environment SOUTHLAND

Te Taiao Tonga

Regional Marine Oil Spill Contingency Plan

This plan covers the entire coastal marine area as defined under the Resource Management Act through the Regional Coastal Plan (See map overleaf)

An electronic copy of this Plan is held in Environment Southland's Electronic Document Records Management System (MORF A215411)

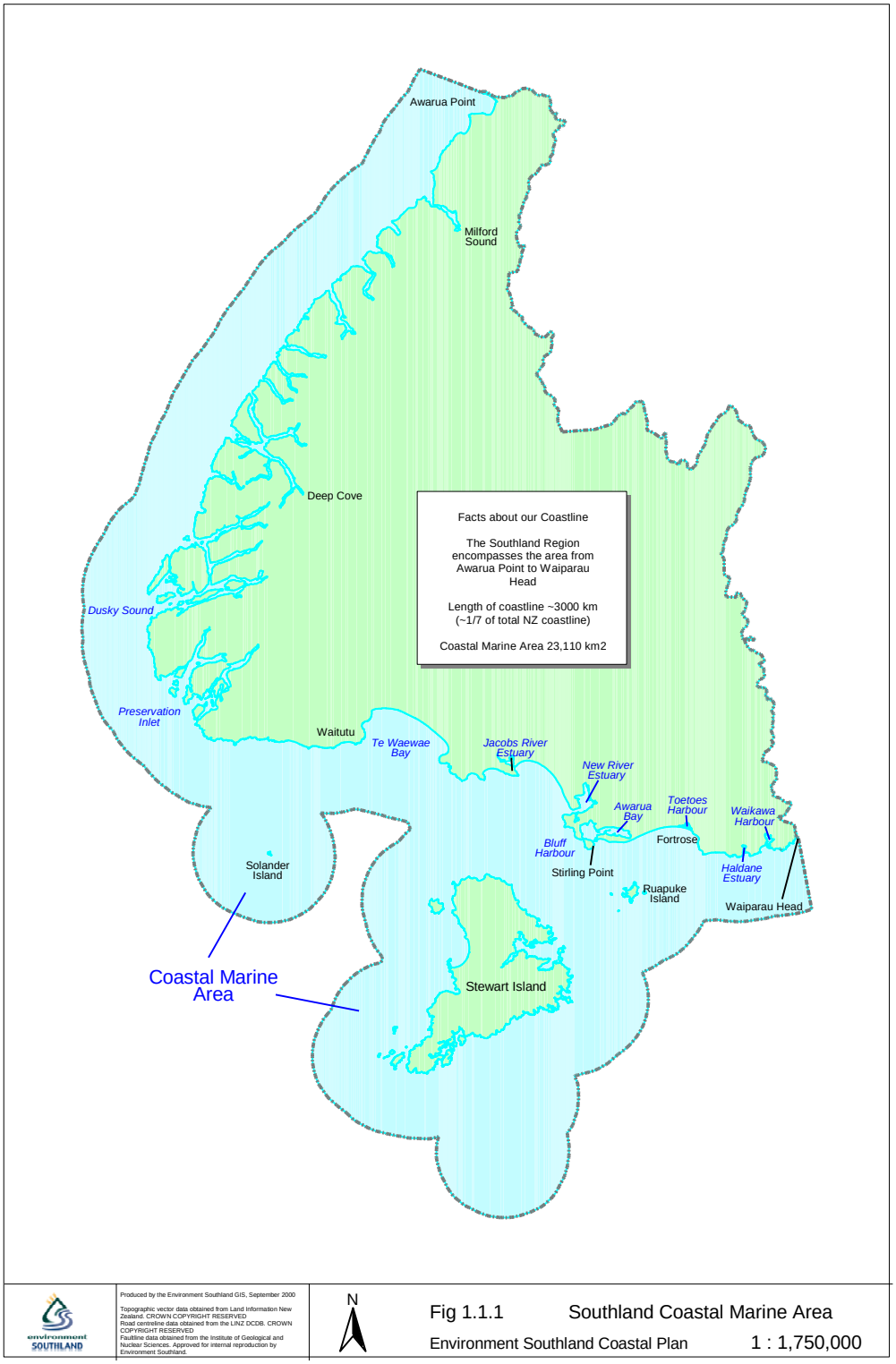
Reports of Marine Oil Spills

All reports of marine oil spills within the coastal marine area of the Southland region, including the Bluff Harbour are to be reported to:

Environment Southland, Invercargill
Telephone: (03) 211 5115 (8.00 am to 5.00 pm) or toll free 0800 76 88 45 (0800 Southland)
After hours (03) 211 5225

Fax: (03) 211 5252 Email:service@es.govt.nz

NB: ***The after hours number for the Council will in most instances be answered by an Answer Service. However, if the Answering Service cannot be contacted, telephone (03) 211 5245. This is the Council's 24 Hour Pollution Response number.***


Awarua Point
Milford Sound
Deep Cove
Dusky Sound
Preservation Inlet
Waitutu
Te Waewae Bay
Jacobs River Estuary
New River Estuary
Awarua Bay
Toetoes Harbour
Waikawa Harbour
Fortrose
Bluff Harbour
Stirling Point
Haldane Estuary
Waiparau Head
Ruapuke Island
Solander Island
Coastal Marine Area
Stewart Island
Facts about our Coastline
The Southland Region encompasses the area from Awarua Point to Waiparau Head
Length of coastline ~3000 km (~1/7 of total NZ coastline)
Coastal Marine Area 23,110 km2
Produced by the Environment Southland GIS, September 2000
Topographic vector data obtained from Land Information New Zealand. CROWN COPYRIGHT RESERVED
Road centreline data obtained from the LINZ DCDB. CROWN COPYRIGHT RESERVED
Faultline data obtained from the Institute of Geological and Nuclear Sciences. Approved for internal reproduction by Environment Southland.
N
Fig 1.1.1 Southland Coastal Marine Area
Environment Southland Coastal Plan 1 : 1,750,000

OPERATIONS

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1.0 Introduction

1.1 Statutory responsibility

Environment Southland has a statutory responsibility under the Maritime Transport Act 1994 to conduct a Tier 2 or regional response to marine oil spills that occur within the coastal marine area. A Tier 2 response will be invoked when either:

- The person responsible for implementing a Tier 1 plan or Shipboard plan considers that the marine oil spill cannot be contained or cleaned up by the resources available to that person; or
- The Regional On Scene Commander considers that it is appropriate to initiate action under the Tier 2 plan.[1]

1.2 Relationship of the regional response to a national response

Maritime NZ is responsible for conducting a Tier 3 or national response to marine oil spills which either occur outside the coastal marine area or occur within the coastal marine area but are beyond Environment Southland's response capability both physically and financially.

Guidelines on determining whether a spill response is Tier 2 or Tier 3 are contained in Appendix D of the NZ Marine Oil Spill Response Strategy 2018-2022.

If the spill response necessitates the exercising of the Director's (of Maritime NZ) powers in respect of a foreign ship, these powers are available to the Regional On Scene Commander pursuant to the delegation instrument in Annex 6. If there is any uncertainty as to whether a ship is a New Zealand or foreign ship, Maritime NZ should be consulted and asked to clarify.

1.3 Purpose of this Plan

This plan establishes operational guidelines that will enable Environment Southland and other organisations listed in the plan to respond to a marine oil spill in the coastal marine area.

In the event of a Tier 3 response in the Southland Region, this plan will provide Maritime New Zealand with regional specific information to assist in responding effectively to the spill.

[1]This change over between Tier 1 and Tier 2 is in accordance with Section 299 and 300 of the Maritime Transport Act 1994.

1.4 Underpinning concepts

1.4.1 *Bluff Harbour is a special case*

Whilst drafting this plan the Council recognised that it was necessary to distinguish between a response operation arising from a spill that originates inside the Bluff Harbour and a response operation arising from a spill that originates outside the Bluff Harbour. This is because spills originating within the Bluff Harbour require a very quick response time to prevent adverse effects on the environment and Port Maintenance Company Ltd staff will be able to respond quickly to most spills originating in this area. Hence, a spill in the Bluff Harbour will utilise resources from Port Maintenance Company Ltd to the fullest extent practicable. Spills outside the Bluff Harbour will fully utilise Council staff, and to a lesser degree, Port Maintenance staff.

1.4.2 *This plan should not be read or used in isolation*

This plan is prepared specifically to guide an oil spill response in Southland. It is not the repository of masses of general technical information. It will however, contain some information that is specific to potential oil spill scenarios in Southland, for example, the physical characteristics of oils frequently used or transferred in specific localities, the location of environmentally sensitive areas and the availability of resources.

The following documents may be utilised during a spill response:

- Te Tangi a Tauira (Ngai Tahu ki Murihiku)
- Fiordland Marine Oil Spill Contingency Plan
- Marine Oil Spill On Scene Commanders Course Book *(Maritime NZ)*
- The National Marine Oil Spill Contingency Plan *(Maritime NZ)*
- Oil Spill Dispersants – Guidelines for use in New Zealand
- The New Zealand Marine Oil Spill Response Strategy *(Maritime NZ)*
- Adios Users Manual – US Coastguard R&D Centre
- Code of Best Practice for Cost recovery and Prosecution Following Discharges of Oil *(Maritime NZ)*
- Identification of Oil on Water; Aerial Observation and Identification Guide
- The Regional Coastal Plan for Southland: Section 3 – Coastal Values, Appendix 3 – Maps, Appendix 4 – Coastal Landscape Assessment

These materials are held by Lyndon Cleaver in his office in a box entitled "Oil Spill Plans and Related Material".

1.4.3 *This plan will be implemented by trained responders*

This plan assumes that those implementing it will be trained Regional On Scene Commanders or Marine Oil Spill Managers. In implementing the plan, those persons will utilise the skills and knowledge of like trained people, trained Marine Oil Spill Equipment Operators, people trained in the Fundamentals of Marine Oil Spill Response and Advisors identified in this plan.

The Regional On Scene Commander responsible for the implementation of the plan is Lyndon Cleaver, Regional Harbourmaster, Environment Southland. In the Regional On Scene Commanders absence, alternate qualified Regional On Scene Commanders will be sourced from other Environment Southland staff or appointees, then Otago Regional Council

staff. See **Chapter 3** for the response structure and a description of the roles within that structure, and **Annex 2** for personnel lists and contact numbers.

1.4.4 *Oil spills from inland waterways*

It is also important to recognise that some spills in the coastal marine area may arise from inland waterways or move into inland waterways. In these circumstances a different response operation to that outlined in this plan may occur, with less emphasis on the role of the Regional On Scene Commander and more emphasis on the role of Pollution Response staff.
Having said that, any oil spill in the coastal marine area that has its source in an inland waterway or stormwater drain, is regarded as a marine oil spill and is covered by the arrangements in this Plan.
Environment Southland staff will co-ordinate any spill response in inland waterways (lakes or upper catchment rivers) where the spilled oil is unlikely to reach the coast.

1.5 Marine Oil Spill Risk in Southland

1.5.1 *Components of risk*

The risk posed by a marine oil spill can be determined from:

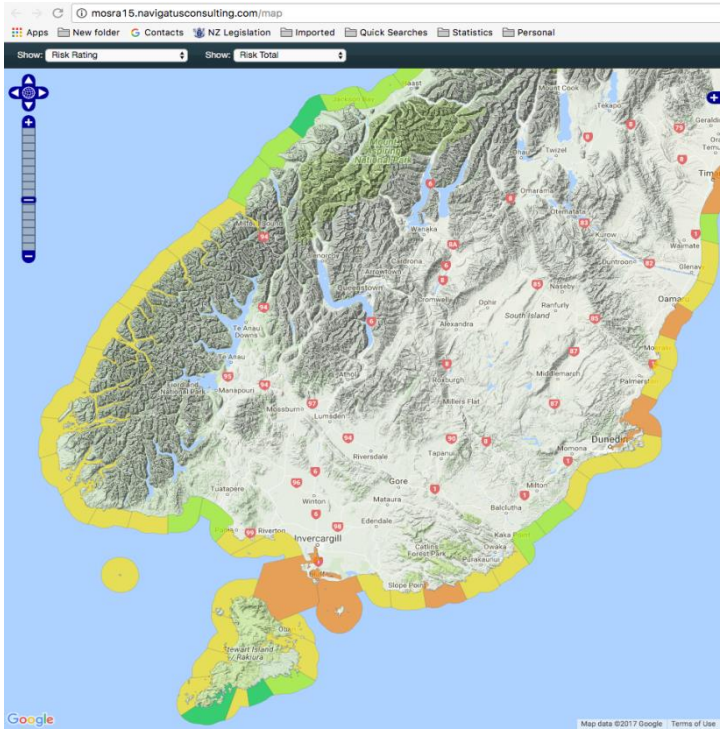
- the quantity and type of the oil spilled;
- the persistence and movement of the spilled oil, under the prevailing environmental conditions (tide, current, wind);
- the proximity of spill sites to sensitive environmental areas.

Most of the oil entering Southland is refined product. Each type of **refined** product has well defined physical and chemical properties that are outlined in Chapter 4.

A National Marine Oil Spill Risk Assessment (MOSRA) was undertaken in 2015. That assessment broke the coastline into 20 kilometre lengths and assigned a risk rating to each length. The outcome of that assessment is shown on the map below, the red area being that of highest risk and the dark green area being that of lowest risk.

http://mosra15.navigatusconsulting.com/map

http://www.maritimenz.govt.nz/public/environment/documents/MOSRA-report-2015.pdf



1.5.2 *Historic spills*

Spill records show that the worst spills in the Southland region occurred as a result of shipping accidents in relatively unpredictable and often remote locations. However, as near misses have shown, a significant threat exists for spills from shipping accidents, at the entrance to the Bluff Harbour. Cruise ships and other vessels entering Paterson Inlet, Stewart Island and the sounds of Fiordland, especially those that are fuelled by light or heavy fuel oil are another source of potentially very significant oil spills.

Many smaller spills occur during bunkering operations or as a result of pumping bilges contaminated with oil.

1.5.3 *Transfer sites*

The owners of the oil transfer sites outlined below are required to prepare an Oil Transfer Site Marine Oil Spill Contingency Plan for approval by the Regional On Scene Commander under delegated authority from the Director, Maritime NZ.

The bulk and bunker transfer sites located in the Bluff Harbour and elsewhere in Southland are shown on the maps in Annex 4.

As part of the Tier 2 response, reference should be made to the Oil Transfer Site Marine Oil Spill Contingency Plan in determining the appropriate response actions.

1.5.4 *General shipping*

The recommended routes for coastal tankers and other shipping in Southland, as published by the MARITIME NZ in "Shipping Routes Around the NZ Coast, - A Voluntary Code for ships carrying oil or other harmful liquid substances in bulk", are as follows:

Bluff

From the East - Keep at least 3 nautical miles off Slope Point, thence: at least 3 nautical miles off Waipapa Point, thence: at least 1.5 nautical miles south of Dog Island and thence to the Pilot station.

From the West - Keep at least 5 nautical miles south of Centre Island and thence to the Pilot station.

Coastal tankers pose a threat of marine oil spill with low probability of occurrence but high potential effects on the environment. However, other vessels carry a significant amount of fuel oil. As such, the above Code is likely to be extended to all shipping.

In addition to larger vessels entering the Bluff Harbour and transiting the Southland coast, there are up to 90 cruise ship visits per annum along the West Coast including one or more of the fiords. Cargo vessels also travel along the west coast and fishing, tourism and private vessels use the sounds. These ships pose a potential threat to the coastal environment in the sounds.

Local fishing vessels operate all around the coast including Stewart Island and larger foreign owned or joint venture fishing vessels transit through the coastal marine area off Stewart Island when travelling from the mainland to southern fishing grounds. These vessels (usually about 60 metres in length) often shelter around the coast of Stewart Island.

1.6 Objectives of this Plan

1.6.1 *Objective 1*

To safely mitigate the effects of a marine Tier 2 marine oil spill within the Southland region and, if practicable, to assist with the rehabilitation of an oil damaged environment. **The safety of human life takes precedence over every aspect of the response operation.**

This plan aims to develop a response system that will safely:

- **evaluate** a reported marine oil spill within **15 minutes** of a spill being reported within the Bluff Harbour or **1 hour** of a spill being reported outside the Bluff Harbour;
- **alert** concerned and interested parties of a marine oil spill which affects them **within 2 hours** of the spill being reported;
- **mobilise** appropriate personnel and equipment in support of a Tier 2 response operation, within **30 minutes** of the spill being reported.
- **commence** any necessary clean-up operations which avoid, remedy or mitigate the effects of the spilled oil and contribute to the rehabilitation of the environment, within **1 hour** of the spill being reported within the Bluff Harbour and **6 hours** of a spill being reported outside the harbour;
- **complete** clean-up operations in an expeditious manner within the resources available to this plan.

1.6.2 *Objective 2*

To recover the costs of responding to the marine oil spill from the polluter and to prosecute the offender where appropriate:

- **obtain** evidence sufficient to prove the:
  - source of the spill
  - parties responsible for the spill
  - amount spilled
  - adverse effects of the spill
- **identify** the costs of the response operation through the keeping of a proper accounting system.

2.0 Standard operating procedures for marine oil spills

2.1 Start Up – Discovery, Notification, Evaluation, Declaration, Activation

2.1.1 *Receiving Oil Spill Reports (General)*

- In the case of spills outside of Southland's coastal marine area (see **Fig 1.1.1**) i.e. spills that are generally beyond 12 Nautical Miles from shore, and including the Sub Antarctic Islands, contact:

  Maritime NZ
  Rescue Coordination Centre of New Zealand (RCCNZ)

  Phone 0508 472 269

- Persons receiving reports of **shipping incidents** should consider whether there may be a consequent risk of marine pollution, irrespective of this being included in the report or not. A potential oil spill is deemed to be an actual oil spill for response purposes.

  If the reportee believes the pollutant to be toxic or otherwise hazardous then they should also promptly forward the report to the **Fire Service, Ph (03) 218 4114**. If in doubt the person receiving a pollution report should refer details of the incident to the Fire Service.

2.1.2 *Receiving Oil Spill Reports (South Port, Bluff Harbour Radio or Port Maintenance Ltd)*

For spills in Bluff Harbour reported to or observed by South Port New Zealand Limited, Bluff Harbour Radio or Port Maintenance Ltd the following actions are to be carried out by the Duty Pilot, Duty Watchman or Company Manager respectively, where **the spill has entered, or is about to enter, the water and is beyond the capacity of a site or ship board response** *(Note: For spills outside of Bluff Harbour reported to the above parties, the report should be forwarded as soon as possible to Environment Southland)*:

- the Duty Pilot, Duty Watchman or Company Manager is to immediately verify themselves, or dispatch a member of staff to verify, that a marine oil spill has taken place. If there is pollution the despatched staff member should confirm this immediately to the person who despatched them. The person verifying the spill should complete the "Pollution Incident Evaluation Form" (**Annex 8**);

- the Duty Pilot, Duty Watchman or Company Manager will immediately advise, by telephone (see phone numbers below), the Environment Southland Compliance Division, or outside office hours the 24 Hour Pollution Response Officer, outlining the circumstances listed in the Oil Pollution Incident Evaluation Form (**Chapter 2**);

Environment Southland Private Bag 90116, Invercargill

Phone	(03) 211 5115 (8.00 am - 5.00 pm)
Toll free	0800 76 88 45 (within Southland region)
After hours	(03) 211 5225

NB: The after hours number for Environment Southland will in most instances be answered by an answering service, who will redirect the call. However, if the answering service cannot be contacted, telephone 03 211 5245. This is the Council's 24 hour Pollution Response number.

- a member of the Environment Southland Compliance Division or the Environment Southland 24 hour Pollution Response Officer will contact the Port Maintenance Manager (John Roderique, 027 2407820 or 03 212 7674) if he is not already aware of the spill. The Environment Southland Compliance Division member or the 24 hour Pollution Response Officer will also contact the Regional On Scene Commander and advise him of the spill.

- the Port Maintenance Manager should, on request, assess the spill and mount an appropriate response in consultation with the Environment Southland Compliance Division member or the 24 hour Pollution Response Officer and/or the Regional On Scene Commander (by 'phone). The Port Maintenance Manager will manage any response at least until an Environment Southland representative is on site or the Regional On Scene Commander assumes control, and then await further instructions.

- on request, the Port Maintenance Manager will initiate the call out of appropriately trained and qualified Port Maintenance and South Port personnel and plant. This may include placing on standby or mobilising the oil spill equipment and personnel in accordance with the Mobilisation Procedures listed in **Annex 1 (Equipment) and Annex 2 (Personnel)**. **Under no circumstances is any dispersant to be applied without the approval of the Regional On Scene Commander;**

- where requested by either the Environment Southland Compliance Division, the 24 hour Pollution Response Officer or Regional On Scene Commander, the Port Maintenance Manager will arrange for oil spill samples to be taken by appropriate personnel in accordance with **the procedures in the dispersant use guidlines <u>before any dispersants are applied</u>.** It is important that a witness is present whilst sampling is carried out. If time permits Port Maintenance will involve Environment Southland Pollution Response personnel in this process.

2.1.3 *Receiving Oil Spill Reports (Environment Southland) & Notifying Maritime NZ and interested parties*

The following actions are to be carried out in response to **any** report of a marine oil spill or oil pollution incident.

The person receiving the call (receptionist or Duty Officer)

- The person receiving the call (receptionist or Duty Officer) is to direct the call initially to a person from the Environmental Compliance Division (business hours) or 24hr pollution response officer (after hours). That person is known as the **"responding officer"**.

The responding officer

- The **responding officer** should record the details of the spill on the "Pollution Incident Evaluation Form" (**Chapter 2**) if this has not already been done.

- In the case of spills in the **Bluff Harbour or Stewart Island Harbours** contact:

  The Port Maintenance Manager and/or South Port Duty Pilot

  Port Maintenance Phone: (03) 212 7674 (bus), 027 240 7820 (mobile), (03) 212 7076 (after hours), (03) 212 7675 (fax), email: portmaintenance@xtra.co.nz

  South Port Phone: (03) 212 8159 (24 hours) (03) 212 8685 (fax, 8.00 am-- 5.00 pm Mon-Fri), email: pilots@southport.co.nz

- In the case of spills in **Riverton Harbour** outside of normal work hours, contact:

  ES Deputy Harbourmaster (Ian Coard)

  Phone (03) 234 8786
  Mobile 021 300 857

- In the case of spills that could affect the coast of **Ruapuke Island**, contact Ruapuke Islanders (See Annex 2.12).

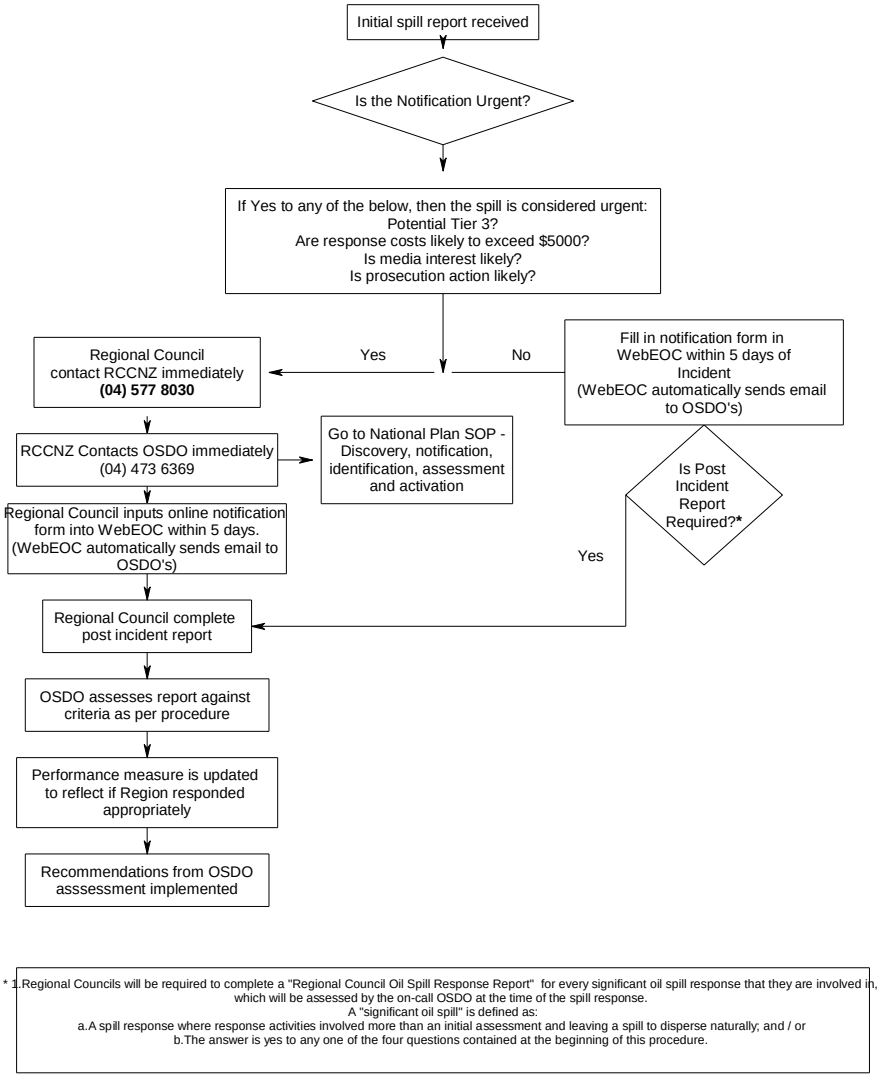
- For all but minor spills, advise the Regional On Scene Commander (Lyndon Cleaver), or if he can't be contacted, the alternate Regional On Scene Commander Simon Moran, SDC, 027 2218222. The responding officer shall continue to respond in a similar manner to any other complaint/pollution callout unless otherwise instructed by the Regional On Scene Commander. The Regional On Scene Commander can authorise the deployment of personnel and equipment that are not available to the responding officer.

- The responding officer should commence filling out the "Spill Assessment" form (Annex 8) or forward the information required to fill out on the form to the Regional On Scene Commander. It should be noted that this form facilitates the procurement of information that is required to guide subsequent decision making.

The Regional On Scene Commander
If contacted the **Regional On Scene Commander** is to:

- **Notify MaritimeNZ** using the procedure set out below (this procedure is largely given effect to by lodging a spill report through the MPRS page on Web EOC http://webeoc.maritimenz.govt.nz/eoc7/). The generic Environment Southland username and password are "southland" and "Environment1". Once logged on, select "MPRS Database" from the Incident menu. Enter the database and navigate to the "incident/spills" tab, then "Add New Incident/Spill".

Regional Council Oil Spill Notification Procedure



- Notify CEO and other interested parties such as IWI, including advisors and owners of facilities that may be directly affected by the spill.

- determine an appropriate initial response, establish an Incident Command Centre suitable for the response, call out appropriate members of the incident response team and advisors (see **Annex 2**) and proceed to the Incident Command Centre (refer to the "Marine Oil Spill Process" Summary Sheet on page 26). The size of the response at this stage will be influenced by the nature and reliability of the initial oil spill report.

- assign roles (Operations, Planning, Logistics, Occupational Health and Safety, Communications and Media & Community Relations) to the incident response team members and advisors (use coloured vests as is appropriate);

- brief the incident response team and advisors using the I-SPEAC-Q format (see **Annex 8**);

- establish Status Boards to display information;

- develop a quick urgent immediate response plan (QUIP) ["Marine Oil Spill Process" Summary Sheet on page 26] with a specific focus on the following:
  - Evaluation & monitoring
  - Sampling
  - Personnel & equipment standby
  - Prevention
  - Cleanup
  - Evidence gathering –source, responsible party, amount spilled, adverse effects
  - Press releases
  - Establishing contact with the spiller or its representative
  - Liasing with Maritime NZ

- Arrange for Environment Southland's finance section to issue a Job Number for the spill response against which all time, goods and services can be charged (see also **guidelines for Regional Councils – prosecution and cost recovery**).

- Remind members of the response and advisory team that:
  - no goods or services are to be procured without the express approval of the Regional On Scene Commander or his designated representative;
  - all media comment/press statements need to be authorised by the Regional On Scene Commander;
    they need to keep a personal log of all significant actions, telephone calls, discussions, meetings and decisions recording the time, date and parties involved;
  - Civil Defence radio message pads are sufficient for this purpose but any pad will suffice provided it has the above headings;
  - record keeping and filing is important for post response investigations, prosecutions and cost recovery including the cost the responders' time.

- Set a time for subsequent briefings.

2.1.4 *Oil Spill Evaluation*

Evaluation of the Spill

The person or persons (in Bluff this will most likely be John Roderique or other member of Port Maintenance) sent to evaluate the Oil Spill Report will:

- take into account the amount of time lapsed since the spill first occurred and the tides and weather since then and the places to which the spilled oil may have travelled.

- take into account the means of travelling to the site. If it is by air, it is desirable to have at least two people to operate the equipment (GPS, cameras & communications) and to observe out of each side of the aircraft.

- take with them such communication and recording equipment as is necessary to speedily report information back to the Emergency Operations Centre (EOC), and vice versa, and to record observations for subsequent dissemination. Such equipment may include:
  - hand held radios and spare batteries and/or radios
  - ear pieces
  - cellphones
  - Warrants (ES)
  - laptop computer
  - digital camera
  - maps or charts (available in the EOC)
  - paper, pens and pencils
  - GPS
  - sampling equipment
  - oil spill sampling kit (in red carry bag in EI shed
  - clipboard
  - back up equipment (camera, comms & GPS in particular)
  - Marine Oil Spill Response – Aerial Surveillance Log (**Annex 8**)

  Before departing for the scene the evaluators should ensure that they have arranged with the Communications manager the means by which they will be communicating back to the Emergency Operations Centre (normally Environment Southland office).

  It should be appreciated that in many situations the Evaluators will be operating from an aircraft. Details of helicopter and aircraft contacts are contained in **Annex 1.**

  On land or on the water the Evaluators may well be working in conjunction with the Sampling and Evidence gathering team;

- confirm the existence of a spillage and immediately report this to the Regional On Scene Commander and brief him/her in full;

- if the spillage is evaluated on the ground or from a boat, obtain samples (even if the spill is diesel or petrol) and photos in accordance with the procedures in **Chapter 10 of the National Plan**. It is important that a witness is present whilst sampling is carried out;

- if the identity of the spiller is known, find out from them the type of oil and obtain the specifications (viscosity, pour point etc) of the spilled oil;

- once the Evaluators have undertaken the initial evaluation they should be placed on standby for ongoing surveillance duties (see **2.4.3**), especially after a change in tide direction.

2.2 Spill Assessment and Prediction

Once the oil spill evaluator confirms that nature of the spill the **Regional On Scene Commander** will initiate the following actions as appropriate:

Revisit the first four bullet points for the Regional On Scene Commander in **2.1.3** above:

- Estimate the volume of the spill (see the Maritime NZ "Spill Assessment" form in **Annex 8**) and assess the likelihood of further spillage. In the case of a vessel this may well require obtaining quite particular information about the oil and fuel tank layout and the quantities of fuel, lubricants, hydraulic oils and liquid cargoes being carried at the time of the incident. Spill volume is quite an important consideration in prosecutions, especially the level of fine. As such it is important to determine whether the spill is in excess of 100 litres or not.

- Predict the behaviour of the spilled oil using ADIOS and the information in **Annex 5;**

- Predict the movement of the spilled oil using meteorological information and the tidal and current information contained on charts and **Annex 5**. **Annex 5** also contains contacts for Weather Information. Generally the predictions should be for specific intervals and be over at least one tide change;

- Obtain environmental information from **Annex 4** and the **Regional Coastal Plan**.

- Develop an Action Plan (AP) with the assistance of the Advisory Team. See Section 2.3 Action Plan Development below**;**

- In developing the AP the following documents shall be consulted as is appropriate:
  - ♦ Regional Responder Aide Memoir *(Maritime NZ)*;
  - ♦ Marine Oil Spill On Scene Commanders Course Book *(Maritime NZ)*;
  - ♦ The National Marine Oil Spill Contingency Plan *(Maritime NZ)*;
  - ♦ The New Zealand Marine Oil Spill Response Strategy *(Maritime NZ)*;
  - ♦ Fiordland Marine Oil Spill Contingency Plan *(Maritime NZ);*
  - ♦ Health & Safety in relation to Hazards On Board Ships *(Maritime NZ)*;
  - ♦ Adios Users Manual – US Coastguard R&D Centre *(contact Maritime NZ, Te Atatu)*, see also http://response.restoration.noaa.gov/software/adios/adios.html
  - ♦ Regional Council Guidelines – Prosecution and Cost Recovery;
  - ♦ Identification of Oil on Water; Aerial Observation and Identification Guide;
  - ♦ "Oil Spill Dispersants – Guidelines for use in New Zealand"

  These materials can be sourced online and in the harboumasters office.

2.3 Action Plan (AP) Development

2.3.1 *Decisions on the scale and type of response*

Decisions on the scale and type of response should be made by the Regional On Scene Commander in consultation with the appropriate members of the Advisory Team and Maritime NZ (potential Tier 3) once a full assessment of the situation has been made. **The decisions made will form the Action Plan** ***(NB: Wherever possible, a spiller's representative should be consulted in the development of the AP. If a vessel is responsible for a spill, the owner's name can be located by Maritime NZ's Maritime Officers based in Invercargill [027 836 1105 or 027 836 1632, or the Maritime NZs Oil Spill Duty Officer (04) 473 6369]). See Annex 1.7.15 also for vessel identification/owner information)***

The degree to which a full operational response is implemented will depend on the size and significance of the spill. However, the procedures, lines of responsibility and authority will remain the same although some intermediate steps may be unnecessary.

Potential or "model" APs developed through table top exercises are available for spills in four areas, those being Port Pegasus (South Arm), Paterson Inlet, Dusky Sound, Secretary Island in Doubtful Sound, Freshwater Basin at Milford Sound and Bluff Harbour (HFO spills that move into Awarua Bay and large petrol spills at the Town Wharf). These APs are located in **Annex 4** (Sensitive Areas and Coastal Information) of this Plan.

The above AP for Port Pegasus is also a suitable example to guide a regional response in any spill that immediately becomes a Tier 3 response.

In addition to the above, the Fiordland Marine Oil Spill Contingency Plan provides guidance for spills in Milford, Doubtful and Dusky Sounds.

2.3.2 *Underlying principles*

The Action Plan is underlain by the following principles in the following order of priority:

- the protection and safety of human life and welfare is paramount, including the protection of casualties, responders, the public and others associated with the incident (***It should be noted, however, that the prime responsibility for casualties may lie with another agency, for example, the Police)*** – The Occupational Safety and Health Advisor should be consulted during the preparation of the Plan. If the response is not sufficiently large to involve the OSH Advisor then OSH matters and the contents of Environment Southland's H&S guidelines should be specifically considered;
- the prevention of further spillage including the protection of ships or pipelines where required to prevent further pollution;
- the protection of environmental, social, cultural and amenity values from the adverse effects of the spilled oil;
- the protection of property, assets and the prevention of financial and economic loss;
- the removal of spilled oil and the clean up of contaminated areas.

2.3.3 *Identification of the issues (problems) and development of a broad strategy*

Before the specific response options can be assessed the broader spill related issues need to be defined to provide focus for subsequent decision making.

Salvage, non oil pollution, rats and undaria invasion are examples of the broader issues that need to be factored into a response. If a vessel has sunk the vessels owners and insurers need to be made aware of Rule 10.3.1 of the Regional Coastal Plan for Southland.

Thought needs to be given to potential for shipping movements, especially in Bluff Harbour and Milford Sound and how that might impact on the response. The Harbourmaster should be involved if restrictions on movements are required.

2.3.4 *Development and Assessment of Options including Oiled Wildlife*

The various options for responding to each issue (problem) need to be identified and assessed. Ultimately one particular option or a combination of options will be selected as a means of addressing each issue (See **National Plan supporting documents** for the range of options available). The collective selected options form the Action Plan (AP) which is implemented through various operational plans.

If an oiled wildlife response is required during a Tier 2 or Tier 3 response this should be requested through the MNZ Oil Spill Duty Officer (OSDO) after discussions with the ROSC as to whether or not this is appropriate. If required the OSDO will contact Wildbase and mobilise the NOWRT.

2.4 Action Plan Implementation, Monitoring and Review

2.4.1 *Implement the Action Plan*

Personnel and organisations will be tasked by the Regional On Scene Commander to undertake various actions (tasks) for which Operational Plans will be required. The Operational Plans will specify the following:

- how the response is to occur
- what **equipment and materials, e.g. dispersant,** will be used
- where operations will take place
- when operations will occur
- with what **personnel**
- what **hazards** to be aware of – **eliminate, isolate, minimise** (site safety plan – **Annex 8**)
- how the assistance (personnel and equipment) will be deployed? **(logistics)**
- what level of site security is required including cordons and people to man them
- what communications will be used (Communications Plan) **See Annex 3** – Comms.

NB: All orders for equipment and the services of personnel should be authorised by the Regional On Scene Commander or a Deputy Regional On Scene Commander in the OSC's absence, using Environment Southland Works Orders.

Review the status/completeness/currency of the "Notification" form and Maritime NZ liaison. Consider whether Maritime NZ assistance is required.

Notify interested/affected parties (see **Annex 2**).

2.4.2 *Monitoring the Action Plan*

Once the AP is implemented it must be monitored to establish whether it is addressing the issues/problems in the manner contemplated.

2.4.3 *Spill Surveillance*

Careful ongoing assessment of the situation **(surveillance)** should be undertaken to provide timely and accurate information and to check on the accuracy of predictions. It may also be necessary to revisit the site when the tide changes as the oil will most probably travel in a completely different direction. It is preferable for the initial spill Evaluators to continue to operate in the surveillance role to obtain accurate comparative assessments.

2.4.4 *Think about "what ifs"*

Once the initial AP is developed and implemented the Planning Team should start thinking about the **"what ifs"**, that is the various situations that could develop if conditions (including vessel state, spill size, sea conditions and wind direction) should change. Changes in the tide are expected and should be accommodated in the initial AP process.

2.4.5 *Reviewing the Action Plan*

The plan will need to be reviewed in the following circumstances:

- monitoring indicates that the plan is not working as well as intended
- the nature or extent of the spill changes significantly
- the weather and/or sea state changes
- new issues/problems arise
- there is a significant change in the nature or quantity of resources.

If a review is required return to Section 2.3.3 bearing in mind the principles outlined in Section 2.3.2.

2.5 Response Termination and Demobilisation

2.5.1 *Termination/Scaling Down*

The On Scene Commander will consult with the Advisory Team and other interested parties, as appropriate, before terminating or scaling down the response operation. If this decision is likely to be contentious the Director of Maritime NZ should be consulted.

The decision will be made considering whether the objectives of the response have been achieved. Prior to seeking termination of the response, the ROSC will hold a meeting of all Emergency Operation Centre Managers and senior response staff with the purpose of this meeting to determine whether the AP objectives have been achieved and the incident response has been adequately completed.

Response termination involves the recovery, cleaning and maintenance of all equipment used during the clean-up (2.5.2.2), the demobilisation of all personnel involved in the response (2.5.2.1), and the collation and completion of all documentation associated with the spill response, including expenditure reports (2.5.4).

Before the response personnel depart their stations they should attend a debriefing meeting with their section supervisor. These supervisors will then attend debriefings with their managers and the ROSC ("hot debrief").

As part of the termination process, all section managers within the EOC shall compile a detailed events log, which should be passed to the Regional On Scene Commander. The Regional On Scene Commander is responsible for ensuring that the event history is compiled, costs are recovered, enforcement procedures are undertaken (if warranted), and for arranging the running of the post incident ("cold") debriefs.

2.5.2 *Demobilising personnel and equipment*

2.5.2.1 **Personnel**

Personnel may be tired and burnt out as a result of the extraordinary effort required in a response. They may require ongoing support after they have returned home. Fresh personnel may be required to clean up and demobilise equipment.

2.5.2.2 **Equipment**

Equipment that is used during the response operation should be returned to its storage depot and the following maintenance carried out:

- all equipment should be cleaned and repaired where any damage has occurred. In the field this should be carried out in a responsible manner whereby the oil that is being cleaned off the equipment is captured and contained in temporary storage facilities. Preferably though, the oil equipment is transported for cleaning at the facilities identified in Annex 1.5.2;
- where possible, final cleaning of oil spill response equipment and associated gear should be carried out at a site with appropriate resource consents. Care should be taken to ensure that no oil is lost during transportation to the cleaning site;
- consumed items such as fuel, dispersant, sampling jars, sorbents should be replaced as soon as possible;
- protective clothing should be checked and replaced or renewed where necessary;
- retrieving and returning loaned/hired resources.

In the equipment demobilisation process, it is important to keep equipment and other facilities secure to ensure nothing is lost in the process.

2.5.3 *Restoration of temporary storage sites and disposal of oil/oily waste*

All sites used for the storage of recovered oil, along with all work areas should be cleaned and tidied and any remediation requirements carried out. All recovered oil and oily waste should be disposed of in accordance with **the National Plan waste management supporting document** using the "preferred supplier" arrangements set out therein.

2.5.4 ***Collating documents***

All costs incurred for the use of plant and personnel plus items consumed should be collated. If requests for works, services and equipment are charged at the time of requisition to the job number issued at the beginning of the response this job will be much easier. All costs are to be ultimately recovered from either the spiller (preferred option) or failing that, the Oil Pollution Fund through Maritime NZ ***(NB: The Oil Pollution Fund is not a compensation fund)***.

All other documents and records relating to the spill e.g. Incident Action Plans and personal logs, should be collated and stored in a safe place for later reference.

2.5.5 ***Civil liability***

Damage to private property is a matter to be resolved between the parties involved. This shall be by way of civil litigation if necessary. Damage to private property from spilled oil is a matter to be resolved between the spiller and the property owner.

2.5.6 ***Compensation funds***

If it becomes necessary to take action to recover costs under either:

- the International Convention for Civil Liability for Oil Pollution Damage 1969 and its Protocols (CLC Convention); or
- the International Convention on Establishment of an International Fund for Compensation of Oil Pollution Damage 1971 and its Protocols (Fund Convention);

such action will be taken through or by Maritime NZ.

2.6 Debriefing, Auditing and Review

2.6.1 *Review and audit*

The Council, OPAC or the Director of Maritime NZ may require a review and audit of a Tier 2 response operation. Accordingly, the Regional On Scene Commander is to ensure that a complete record is kept of significant details of the response including reports from supporting organisations where required.

Whatever the case, the effectiveness of the plan should be evaluated and recorded after its use in response to an oil spill.

The Director of Maritime NZ should be invited to participate in any post-use review of the plan.

Any proposed amendments to increase the effectives of the plan must be submitted to Maritime NZ as soon as practicable for approval under Section 293(2) of the MTA.

Whatever the case, the effectiveness of the plan should be evaluated and recorded after its use in response to an oil spill.

The Director of Maritime NZ should be invited to participate in any post-use review of the plan.

Any proposed amendments to increase the effectiveness of the plan must be submitted to Maritime NZ as soon as practicable for approval under Section 293(2) of the MTA.

2.6.2 *Debriefing following major spills*

A debriefing will be held following any major spill to identify what went well (and needs to be repeated) and to what could be improved upon. This plan may need revising based on lessons from the spill response.

- The Regional On Scene Commander for the spill is responsible ensuring that a debrief is held. The debrief will be organised and chaired by a qualified Regional On Scene Commander, but not the person or persons that undertook that role during the response.

- All participating personnel and organisations shall be invited to the debrief. Where the number of potential participants or practical attendance is a problem, those smaller groups can hold their own debrief and the results can be communicated to the Regional On Scene Commander's debrief by a representative of the group. Similarly, if any invitee is unable to attend, that persons comments can be submitted in writing. Maritime NZ shall be notified of the time and location of all such debriefings, and shall be invited to attend.

The debrief shall be use the plus/delta (+/Δ) format. A model agenda including the debrief rules is included in **Annex 8.4**.

2.7 Training, Testing, Maintenance and Amendment of the Tier 2 Plan

2.7.1 *Training and periodic testing*

All regional council personnel responsible for implementing the plan and dealing with oil spills shall receive training appropriate to their responsibilities under this plan.

The plan shall be regularly tested in accordance with an exercise programme approved by the Director.

Accurate details of training provided, and of each exercise and its results shall be kept and any amendments that would increase the effectiveness of this plan will be:

- submitted to the Director as soon as practicable for approval under Section 293(2) of the MTA; and
- added to the plan and provided to all persons who hold a copy of the plan, once approval has been given by the Director.

The regional council may also be required to participate in a Maritime New Zealand directed exercise in lieu of a programmed regional exercise.

2.7.2 *Update of Information*

This plan shall be checked not less than once every 12 months to verify the currency and completeness of the information contained in it.

At the time of every check, any information in the plan which is not current shall be updated and any new information relevant to the plan shall be incorporated in the plan after approval has been received from the Director.

The Director and every person holding a copy of the plan shall be notified of any changes made to the plan as a result of a check.

The Marine Oil Spill Process

Notification of Spill

Assign Roles

Brief Response Team

Quick/Urgent/ Immediate Response Plan

QUIP
- evaluation (air and ground) take comms (cellphone/radio/laptop) and camera
- preparedness especially sampling/dispersant kit
- equipment stand by
- Personnel stand by (and advisors)
- monitoring spilled oil (and ADIOS)
- prevention
- dispersant ops
- communication with spiller

Advisors
- MARITIME NZ Duty Officer
- wildlife (Internal Team, DoC, Massey University)
- Iwi
- legal
- dispersants
- environment incl Fiordland Marine G
- tier 2 Plan
- Maritime/nautical
- Maritime Officer MARITIME NZ
- Public Health
- MoFisheries
- Spillers rep
- Fishermen
- Salvage

Status Boards
- incident and time
- roles/Personnel
- oil volume and characteristics
- tide and current information
- sea conditions
- weather
- sketch map
- vessel information
- resources (plant and personnel)
- site characteristics
- sensitive environments

OSH
- identify hazards, eliminate, isolate, minimise

Admin/Support
- assist with AP
- manage status boards (see box in top RH corner)
- control of expenditure
- contract management
- insurance
- records
- documents/logs
- HQ security
- job number
- liaise with response staff families
- food & drink ("Camp Mother")
- shifts

Logistics
- assist with AP
- comms especially HQ site
- procure resources
- supply resources
- command centre co-ord
- arrange sampling, monitoring (compliance)
- equipment movement
- personnel requirements
  - food, toilets
  - protective clothing
  - cleaning
  - rubbish
- volunteers
- maintain a resources whiteboard

Planning
- complete MARITIME NZ notification form
- gather relevant information
- determine environmental implications
- liaise with advisors
- develop and assess response options
- prepare AP
- **monitor** AP
- prepare sit reps
- no fly zones
- nautical exclusion zones
- consider the need for a Tier 3 response

Operations
shore water
air wildlife

- assist planning manager with the development of the AP
- predict oil movement and behaviour
- prepare operation plan to meet the AP objectives
- implement plan
- oversee and co-ordinate responses
- report on progress

AP - content
- Response objectives
- Priorities for protection
- Contingencies (what if?)

Media & Community
- assist with AP
- media centre
- co-ordinate media responses
- press conferences
- site visits
- press releases
- liaise with community leaders and community groups

Operations Plan
- how
- what (equipment)
- where
- who (personnel)
- when
- with (logistics)
- flag hazards (safety)
- site security

* Fiordland Marine Guardians

RAPID GUIDE FOR OIL SPILL MONITORING

This guide is designed to help quickly identify the type of monitoring that may be needed following an oil spill

Oil spill monitoring needs to assess:

1. **The source and location of the spill.....(A)**
2. **The likely fate of the oil .....(A)**
3. **The resources likely to be affected .....(B)**
4. **The effect of the response actions.....(C)**
5. **The effect of the spilt oil.....(C)**

STEP 1

Use the following table to identify the monitoring usually considered for spills of varying size/impact

	Monitoring type	Spill size / Potential impact			
		Negligible	Small	Medium	Large
(A) Source and fate	1. Spill surveillance and tracking	✓	✓	✓	✓
	2. Source identification & sampling	✓	✓	✓	✓
(B) Affected resources	3. Identification of sensitive areas		✓	✓	✓
(C) Environmental components usually monitored to assess spill and response impacts	4. Water quality		✓	✓	✓
	5. Shoreline assessment		✓	✓	✓
	6. Birds and sea mammals		✓	✓	✓
	7. Intertidal benthos		✓	✓	✓
	8. Subtidal benthos			✓	✓
	9. Water column organisms				✓
	10. Sediment quality				✓

STEP 2

Use the table presented over the page to decide on which methods to employ for each monitoring type

All monitoring should:

- **Have a clearly defined purpose**
- **Address specific questions**
- **Be timely and defensible**
- **Collect scientifically meaningful information**
- **Be cost effective**

RAPID GUIDE FOR OIL SPILL MONITORING

Monitoring Type	Rationale	Objectives	Common methods
1. Spill surveillance and tracking (required for all spills)	• Provide information on the size, type, location, and movement of oil to identify whether sensitive areas may be impacted • Guide planning and mobilisation of clean-up activities • Indicate time available and physical constraints to mounting a response (e.g. prevailing weather, site access, habitat type, etc.) • Identify appropriate monitoring sites, plus sampling & analysis methods	1. Evaluate the extent and character of a spill 2. Track spill movement in a consistent and accurate manner 3. Identify areas and resources potentially affected 4. Establish protection priorities 5. Provide information to scope and plan response actions and monitoring and assessment studies 6. Document justification for response actions (to assist cost recovery) 7. Collect baseline data on the fate and effects of the oil 8. Collect baseline data for effects of clean-up actions	Aerial overflights Video/photographic records Remote sensing (infra-red imagery etc.) GPS tracking and/or GIS based mapping Manual or computer predictions of oil movement Response plans and resource databases Local knowledge Shoreline assessments
2. Source identification and sampling (nearly always required)	• Source investigation can usually identify the oil type and volume spilt • Prosecution requires evidence to link spill with identified source and to eliminate alternative sources • Oil samples required to characterise oil and receiving environment, to link spill with impact, and to document the weathering of oil	1. Record location of source and spill 2. Confirm source (if possible) 3. Collect legally defensible samples to link source to spill 4. Collect samples to eliminate possible alternative sources 5. Characterise the oil by chemical fingerprinting and documenting weathering over time 6. Determine the likely fate and effects of the oil	Video/photographic records Eye witness records Direct source samples (bunker tank, pipeline, etc.) Slick and water column samples Biological samples Sediment samples
3. Identification of sensitive areas (nearly always required)	• Sensitive areas must be identified to assess potential impacts • Potential impact to sensitive areas (e.g. biological, cultural, human use) determines priorities for protection, response or clean-up	1. Identify sensitive areas (ecological, human uses, cultural, commercial, etc.) and prioritise for protection or clean-up 2. Identify geomorphology, habitat types, access limitations, human uses, equipment staging areas etc. 3. Define appropriate response strategies based on Net Environmental Benefit Analysis 4. Notify affected stakeholders as appropriate 5. Monitor impact of oil and response activities	Response plans and resource databases Aerial video footage Shoreline surveys Local knowledge Expert evaluation
4. Water quality	• Define environmentally important oil compounds, and for oil fingerprinting and toxicity evaluation • Provide semi-quantitative real-time feedback of spill response activities (especially dispersant use) • Detect low-level water borne contaminants and assess safety of water usage (e.g. contact recreation, seafood gathering)	1. Define pre-spill baseline water quality 2. Monitor response effectiveness, especially for dispersant use and shoreline flushing 3. Identify low-level water borne contamination related to the spill 4. Assess biological exposure/bioavailability of contaminants in edible resources 5. Monitor impact of oil and response activities 6. Document post-spill recovery	Discrete water column sampling (e.g. grab samples) Continuous water column sampling (e.g. fluorometry) Sentinel organism monitoring (e.g. natural populations or caged deployment of bivalves) Biomarkers
5. Shoreline assessment	• Geographical distribution and persistence of oil guides response and monitoring efforts • Determines the effectiveness and efficiency of spill response actions • Allows detection of spill and response impacts	1. Collect baseline data on impacted/potentially impacted areas 2. Collect real-time info on oiling, physical/ecological characteristics, human uses, cultural aspects etc. 3. Verify aerial video records and existing data from response plans etc. 4. Assess the effectiveness and impact of response activities 5. Support decision-making for protection or restoration and document post-spill recovery	Video/photographic records Shoreline surveys e.g. SCAT (Shoreline Clean-up Assessment Team) Local knowledge
6. Birds and sea mammals	• High level of public interest • Birds and seals are susceptible to direct oil impacts	1. Identify populations and seasonal susceptibility 2. Determine appropriate response strategies 3. Monitor impact of oil and response activities	Shoreline surveys Databases and local knowledge Expert evaluation (MSA wildlife response team)
7. Intertidal benthos	• Contains resources of high value (biological, human uses, cultural, commercial) • Susceptible to oil impacts • Susceptible to impacts from response activities • Often slow to recover from oil and response impacts	1. Document baseline conditions 2. Determine the actual cause and extent of spill related impact 3. Assess effectiveness and impact of response activities 4. Support decision-making for protection or restoration 5. Document post-spill recovery	Photo quadrats and video transects Estimates of percent cover and diversity Infauna and epifauna composition Ground-truthed aerial photos (vegetation/habitat zones)
8. Subtidal benthos	• Often contain resources of high value (biological, human uses, cultural, commercial) • Susceptible to oil impacts • May be directly impacted by response actions (e.g. dispersant use)	1. Document baseline conditions 2. Determine the actual cause and extent of spill related impact 3. Assess the effectiveness and impact of response activities 4. Support decision-making for protection or restoration 5. Document post-spill recovery	Photo quadrats and video transects Estimates of percent cover and diversity Infauna and epifauna composition Habitat zones (charts, side scan sonar)
9. Water column organisms	• Resources (e.g. fish or plankton) may be of significant value • May be directly impacted by spill or response actions • Monitoring usually required only under extreme circumstances	1. Monitor spill and response impacts ('no effects' conclusions more likely than impact determination) 2. Document post-spill recovery	Continuous pump sampling Discrete net sampling
10. Sediment quality	• Oil may enter intertidal or subtidal sediment • Determine the effectiveness and impact of response activities • Oiled sediment may release oil over time	1. Collect baseline information on oil in sediments and extent of sinking oil 2. Determine the likely source and extent of spill related impact 3. Assess the effectiveness and impact of response activities 4. Document post-spill recovery	Discrete sediment samples (grab, SCUBA) Shoreline surveys (SCAT site maps) Photo quadrats and video transects

Annex 1

Equipment and Resources

1.0 Emergency Operations Centre (EOC) Location and Layout

1.0.1 Location and Layout
1.0.2 Support Equipment

1.1 Mobilisation Procedures

1.1.1 Authority
1.1.2 MSA Marine Oil Spill Response Equipment
1.1.3 Transportation

1.2 Supporting Equipment (Oil Spill Equipment and Other Resources)

1.2.1 Oil Spill Equipment
1.2.2 Oil Spill Safety Equipment

1.3 Local, Regional and National Support

1.3.1 Local
1.3.2 Regional
1.3.3 National

1.4 Equipment (Oil Spill)

1.4.1 Detailed Inventory of MNZ equipment held in Southland
1.4.2 Wildlife Equipment *(see Annex 1.6 also)*
1.4.4 Environment Southland Pollution Response Trailer
1.4.5 Environment Southland Pollution Response Vehicles
1.4.6 NZ Aluminium Smelters Oil Spill Response Equipment
1.4.7 Meridian Energy Equipment located at Manapouri and West Arm, Lake Manapouri and Deep Cove
1.4.8 Milford Development Association Oil Spill Equipment and Arrangements
1.4.9 Southern Lakes Helicopters ("Uni" at Sunday Cove, Breaksea Sound

1.4.10 Real Journeys Oil Spill Response, Large Kits
1.4.11 Environment Southland Oil Spill Response Health and Safety Gear.

1.5 Temporary Storage Sites (Oily Waste) and Oiled Equipment Cleaning Sites

1.5.1 Temporary Storage Sites
1.5.2 Oiled Equipment Cleaning Sites (preferred facility)
1.9.8 Envirowaste **(preferred operator – Maritime NZ contract**) see 1.9.8 below

1.6 Oiled Wildlife Response Equipment

1.6.1 Regional Wildlife Kits & Regional Oiled Wildlife Response Trailers
1.6.2 Limits on Southland & Otago Regional Response Expectations
1.6.3 Generic Wildlife Response Options
1.6.4 Dwyertech Services Ltd Assessment Sheets
1.6.5 Oiled Wildlife Response Trailer

1.7 Resources (Boats)

1.7.1 Steve Gooding Marine Services, Invercargill
1.7.2 Riverton Coastguard
1.7.3 Department of Conservation Boats **(Preferred supplier of dinghies at Stewart Island)**
1.7.4 Environment Southland Boats **(preferred supplier for exercises and general response)**
1.7.4(a) Stewart Island Vessels
1.7.5 Stewart Island Water Taxis
1.7.6 Foveaux Express, Bluff & Stewart Island
1.7.7 "Southern Isle" Charters (Herbie Hansen), Stewart Island
1.7.8 Kiri Waipai Charters, Bluff
1.7.9 Tawaki Dive, Milford Sound
1.7.10 Southland Powerboat Club Rescue Boat – Lower Oreti River, New River Estuary
1.7.11 Deep Cove Hostel Boats, Doubtful Sound
1.7.12 Port Maintenance, Bluff **(preferred supplier of dinghies at Bluff)**
1.7.13 Virago Charters, Bluff
1.7.14 Brendon Frew, Invercargill
1.7.15 Commercial Boat Database (ex Mfish via Harbourmaster)
1.7.16 Maritime NZ Oil Skimmer Barges
1.7.17 Unleashed, Milford Sound
1.7.18 Meridian Boat at West Arm, Lake Manapouri (Doubtful Sound) **(preferred operator in Deep Cove, Doubtful Sound)**
1.7.19 Wai Marino, Invercargill
1.7.20 Awesome, Southland

1.8 Resources (Aircraft)

1.8.1 Southern Lakes **Helicopters (preferred operator for helicopter reconnaissance in Fiordland)**
1.8.2 Waterwings Airways
1.8.3 Airstrips
1.8.4 Heli Harvest Ltd
1.8.5 Rakiura Helicopters

1.8.6 Helicopter Companies used for Spraying Purposes by Environment Southland **(preferred operator for spraying operations)**
1.8.7 The Helicopter Line New Zealand (Fiordland)
1.8.8 Covertex Inflatable Rescue Bridge
1.8.9 Yellow Pages
1.8.10 Stewart Island Flights **(preferred operator for fixed wing reconnaissance ex Invercargill)**

1.9 Resources (Specialist)

1.9.1 Petroleum Waste Solutions/Services **(preferred operator after Envirowaste – see 1.9.8)**
1.9.2 Covertex Shelters and Pillow Tanks
1.9.3 Army Resources
1.9.4 Dark & Turbid Water Imaging Service
1.9.5 Specialist Vehicles
1.9.6 Commercial Divers
1.9.7 HiAb Trucks (Port Maintenance or Purdues)
1.9.8 Envirowaste **(preferred operator – Maritime NZ contract)**

1.10 Resources (Accommodation in remote places)

1.10.1 Milford Sound Emergency Response Plan – Alternative Accommodation/ Cooking Facilities including boats
1.10.2 "A Boaties Guide to Fiordland" – On Shore Accommodation
1.10.3 Deep Cove Accommodation
1.10.4 Kisbee (Preservation) Lodge at Cromarty in Preservation Inlet

1.0 Emergency Operations Centre (EOC)

1.0.1 Location and Layout

The Emergency Operations Centre is located in "Tau Whakamaru", an outbuilding at Environment Southland's offices at the corner of Price Street and North Road, Invercargill. "Tau Whakamaru" houses Emergency Management Southland, the civil defence entity for Southland. This facility is equipped with telephone, facsimile, email, GIS, internet, whiteboards (including a Smartboard), charts, topo maps, individual offices for advisors and radio communications. The diagram on the following page illustrates the layout of the Emergency Operations Centre.

The Emergency Operations Centre may be supplemented by forward command posts located nearer the scene of the spill.

1.0.2 Support Equipment

The EOC contains the following supporting equipment and materials:

- charts
- Topo 50 maps
- 1 Smartboard
- 2 wall mounted whiteboards
- 4 mobile whiteboards
- 1 laser printer/photocopier/fax
- 2 data projectors
- air conditioning
- chart tables
- 24 hour clock
- identification vests
- 16 computers in the Emergency Operations Centre (EOC) with GIS electronic maps and Internet
- Sky TV
- 16 telephones
- clipboards
- pin number entry

The offices surrounding the central EOC contain the following supporting equipment and materials in addition to the above:

- at least 2 PCs per office

- chart tables
- usual office furniture
- air conditioning


Meeting Room
Ext. 409
Double Office
Ext. 420
Ext. 421
Toilets
Kitchen
Ext. 419
Exit
Storeroom
Printer Room
Ext. 408
Radio Shack
Ext. 407
EMS Office
Ext. 404
EMS Office
Ext. 403
EMS Office
Ext. 402
Ext. 411
EMS Duty Phone
EMS Manager Office
Ext. 401
Group Controller
Ext. 451
Ext. 452
Ops Desk
Operations
Ops Desk
Ext. 450
Ext. 449
Emergency Services
Ext. 455
Ext. 456
Planning & Intelligence
Ext. 454
Ext. 453
Ext. 447
Ext. 448
Logistics
Ext. 446
Ext. 445
Public Information Manager
Ext. 443
Ext. 444
Liaison
Ext. 442
Advisor
Ext. 441
Office
Office
Ext. 423
Ext. 424
Office
Ext. 425
Office
Ext. 429
Office
Ext. 428
Office
Ext. 400
IT Room
Ext. 427
Office
Ext. 426
Office

1.1 Mobilisation Procedures

1.1.1 *Authority*

These instructions set out the procedure to be followed when mobilising equipment in response to a marine oil spill. The decision to mobilise equipment will generally be made by the Regional On Scene Commander but for spills inside the Bluff Harbour, the Regional On Scene Commander will normally make the decision after consultation with Port Maintenance Ltd.

1.1.2 *Maritime NZ Marine Oil Spill Response Equipment*

Equipment (See Annex 1.4.1 for list) is located in the Carpenters Store in the South Port complex workshop/garage area (see Port of Bluff Berth and Facility Plan in **Annex 1.4.3**). Access to this store is gained by contacting Port Maintenance 03) 212 7674 (bus), 027 240 7820 (mobile), (03) 212 7076 (after hours) or the Duty Pilot (03) 212 8159 (24 hours) who will make arrangements for the store to be opened and plant and manpower to load the equipment. Keys are held at Port Maintenance and in the watchhouse.

1.1.3 *Transportation*

The equipment will usually be moved to the spill site by road, but may also be moved by vessel or aircraft. The accessibility of the destination, the time to transport the equipment to its destination (by land, sea or air) and the means of unloading the equipment will need to be considered. Many of the items are pre-packed, cumbersome and heavy. Accordingly, equipment may need to be re-configured for transportation to the OSC's chosen destination, and the means to load and unload must be provided.

The Oil Spill equipment stored at South Port will be transported to a spill site within the Port area by Port Maintenance or South Port forklifts and trucks that are available at the time. Port Maintenance is a company based in Bluff (see **Section 1.1.2 above Annex 1.7.12** for contact details) and also has boats and staff trained in oil spill response.

For spills outside the Port that require road transportation the Regional Council may contract the services of a Port Maintenance Hi Ab truck or in the event that a local truck is not available, a Hi Ab truck from Purdues or any transport company (see yellow pages "Transport Operators") ***NB: That transport trucks which are not off-road/4WD may not be able to negotiate small access roads.***

When ordering vehicles (preferably in writing) ensure that:

- the type of equipment and its store is specified;
- direct contact isestablished with the driver if possible;
- the destination of the equipment is clearly specified, and repeated back by the transport dispatcher;
- his/her ETA at the destination;

- the driver reports any unforeseen delay en route to the scene; and his/her arrival at the destination;
- the driver's orders after delivering the equipment are understood.

1.2 Supporting Equipment (Oil Spill Equipment and Other Resources)

1.2.1 *Oil Spill Equipment*

Sections 1.4.-1.10 of this Annex contains a list of oil spill equipment, vehicles, boats, helicopters, sucker trucks, specialised equipment or service providers (including oily waste), aircraft and accommodation houses (including live-aboard boats) that may be available to respond to a marine oil spill in the coastal marine area.

1.2.2 *Oil Spill Safety Equipment*

The Council has a limited supply of oil spill safety equipment some of which is stored at the Regional Council and some of which is stored in South Port's main store next to where the Maritime NZ oil spill equipment is stored.

The equipment stored at the Regional Council consists of eight sets of wet weather gear (See Annex 1.4.16 for a full list) stored in two dive bags in the southwest corner of Harbourmaster's office, plus "personal to officer" equipment and safety equipment stored in vehicles.

The following safety equipment is stored next to the Marine Oil Spill Equipment at South Port:

- 3 full face respirators
- 3 overalls and gloves
- barrier cream

Supplementary safety clothing is available from NZ Safety Limited, 114 Clyde Street, Invercargill, telephone: (03) 218 4273 or fax: (03) 214 9986.

1.3 Local, Regional and National Support

1.3.1 *Local*

The Southland Rural Fire Authority (SRFA), based at the Southand District Council, has resource databases that it maintains for rural fire purposes. The SRFA staff can access these databases and advise oil spill response personnel on the availability of resources. Emergency Management Southland staff have similar resources. The SRFA also has access to a caravan that can be used as a forward command centre/base.

1.3.2 *Regional*

A reciprocal, but dated, agreement exists with the Otago Regional Council to support an operation in the Southland region (see **Annex 6**). Otago Regional Council will mobilise, and arrange the delivery of, their regionally based equipment to a specified site within Southland. A similar agreement exists with the West Coast Regional Council (see **Annex 6 also**).

1.3.3 *National*

The ROSC may request that some/all of the national resources of the Maritime NZ be mobilised to support a Tier 2 operation. These requests are to be made to the Oil Spill Duty Officer ph 04 473 6369 [24 hours].

1.4 Equipment (Oil Spill)

Annex 1.4.1



NOTE:

Photo ID is required to obtain access to the Island Harbour at South Port. If possible, ring security (03 212 8159, 24 hr number) prior to arrival to advise of the purpose of the visit and the number and names of personnel. Alternatively, fill in the "Notice of Arrival" form that is available on the South Port website http://www.southport.co.nz/assets/downloads/South_Port_Ship_Advance_Notice_of_Arrival_Form.pdf and email it to South Port.

Schedule A

Contents List of Maritime New Zealand Equipment Systems/Packages stored at South Port, Bluff

Environment Southland

Boom Systems

Item	Description	No. Held
Harbour boom	**Each 100 meter system includes** 5 - Booms 20 meters long 6 - 22S anchors C/W 6 meter chain 4 - Anchor bridles 2 - end connectors 6 - support buoys 6 - marker buoys 1 - 440 meter anchor warp, 10mm dia	3
Land/Sea boom **80 m**	**Each 80 meter system includes** 4 - Boom lengths 20 meters long 4 - 22S anchors c/w 6 meter chain 2 - end connectors 4 - marker buoys 1 - ballast pump c/w hose and connections 1 - inflator c/w connections 1- 220 meters anchor warp, 14mm dia	2
Land/Sea boom **60 m**	**Each 60 meter system includes** 3 - Boom lengths 20 meters long 4 - 22S anchors c/w 6 meter chain 2 - end connectors	

Item	Description	No. Held
	4 - marker buoys 1 - ballast pump c/w hose and connections 1 -inflator c/w connections 1 - 220 meters anchor warp, 14mm dia	2
Rapid deployment boom	**Each 99 meter system includes** 1 - 66 meter boom 1 - 33 meter boom 2 - marker buoys 2 - end connectors 1 - 70 meter anchor warp, 14mm dia	2

Skimming Systems

Item	Description	No. Held
~~**Ramjet rope mop**~~	~~**Each system includes**~~	
Delta Head Skimmer	On Delta Head for attachment to a suction hose	1

Global skimmer	**Each system includes** 1 - spate pump 3 - discharge hose 1 - suction hose 1 - skimmer 2 - floats 2 - crescent spanners 1 - hose adaptor	1
Komara skimmer	**Each system includes** 1 - Power pack 1 - Skimmer 3 - Discharge hose 1 - Suction hose 1 - Hydraulic hose set 1 - Float set 1 - Strum 1 - Lifting sling set 1 - Adapter, Camlock to fire couplings	1
Desmi Minimax skimmer	**Each system includes** 1 - skimmer 1 - spate pump 1 - suction hose, oil resistant 3 - discharge hose, oil resistant 2 - floats 1 - strum 1 - hose adaptor	1

Pump Systems

Item	Description	No. Held
Spate pump	**Each system includes** 1 - spate pump 3 - discharge hose, oil resistant 1 - suction hose, oil resistant 1 - strum 1 - foot valve 1 - adaptor 1 - hose adaptor	1

Temporary Storage Systems

Item	Description	No. Held
Frame tank – 25,000 ltr	**Each system includes** 1 - 25,000 ltr liner 1 - frame set 1 - cover	1
Frame Tank – 15,000 ltr	**Each system includes** 1 - 15,000 ltr liner 1 - frame set 1 - cover	1

Flexidam – 10,000 ltr	**Each system includes** 1 - 10,000 ltr Flexidam 1 - Cover / Ground sheet 1 - Repair kit	2

Dispersant Application

Dispersant use still remains an option for a Tier 2 response. The procedure for utilising this option is the same as any other piece of kit available in the National Equipment stockpile. A request should be made to the OSDO. The decision making process around its use would remain the same (i.e work through the Dispersant Use Guidelines).

Item	Description	No. Held
	Dispersant stockpile removed 2017	

Ancillaries

Item	Description	No. Held
Hand wringer for sorbent	**Each system includes** 1 - Handwringer	1
Hand Pump	**Each system includes** 1 – Handpump	1
Dolav Storage Bin	**Each System includes** 1 – 700 ltr Dolav Bin complete with lid	1

Wildlife Support (See 1.4.2 also)

Item	Description		No. Held
Wildlife Support Equipment	**Each system includes**	**Number**	1
	Crate (Blue Box)	1	
Capture	Storage Bins	3	
	Transport boxes	50	
	Matasorb (sorbent maps)	100	
	Wildlife collection tags	75	
	Long handled dip nets	10	
Bin 1	Pillow cases	50	
	Tyvex suits – size M	3	
	Tyvex suits – size L	12	
	Tyvex suits – size XL	12	
	Tyvex suits – sixe XXL	3	
	Nitrile gloves (disposable) – size S	2 boxes	
	Nitrile gloves (disposable) – size M	2 boxes	
	Nitrile gloves (disposable) – size L	3 boxes	
	Safety sunglasses	20 pairs	
	PVC gloves (green rubber)	20 pairs	
	High visibility safety vests	20	
	Whistles	20	
	Hibitane/Hibiclens disinfectant – 500 ml	1	
	Paper towels	10 rolls	
	Alcohol hand gel (small bottles)	20	
	Field note books (plastic paper)	10	
	Pencils	20	
	Field Guide to Birds of NZ	1	
	Infectious waste bags	20	
	Plastic leg bands for bird ID	50	
Bin 2	Sharpie pens	10	

Stablisation	50 ml syringes, without catheter 20 20 ml syringes, without catheter 15 10 ml syringes, without catheter 15 Roll of silicone tubing 20 m Cotton buds 5 pkts 0.9% NaC1 (500 ml bottle) 2 Squeeze bottles 3 Digital thermometer 1 Electrolytes, powder	
Bin 3 *Dead bird collection*	Plastic bags 100 Cable ties, 200 mm 100 Cable ties, 100 mm 100 Clipboards 5 Writing pads 5 Nylon rope – 4 mm 30 m 2 Animal admission logs in folder 60 Register of equipment (in and out) 1 Stock rotation schedule 1 Audit checklist 1 Non-tamper plastic sealing bag 1 Bird scare tape 5 rolls Air horn 1 Nitrile gloves – check expiry dates during audit and replace as necessary	

Consumables

The following details the target stock level for the listed consumable items. Operational usage and replenishment of these items will be ongoing. All usage and replenishment is to be recorded and communicated to Maritime New Zealand.

Sorbents

Description	Stock
Pads	1,600
Booms	48
Pillows	60
Snares	60

Regional Wildlife Response Equipment Contents

Blue Box (Stored at South Port, Bluff) See Annex 1.4.1.

These contents are intended to cater for 50 birds and 20 field personnel

		Item	Use	Number	Supplier	On shopping list?	Check ?
Capture		Transport boxes	Transportation of birds	50	Contact NZWHC		
		Matasorb (sorbent mats)	Lining bottom of transport boxes	100	Process lubricants		
		Pillow cases	Holding birds before placing in transport boxes	50	Manchester retailer		
		Wildlife Collection tags	Labelling boxes (live) & Bags (dead)	75	Contact NZWHC		
		Long handled dip nets	Net capture of birds	10	Fishing store or similar		
Bin 1		Tyvex suits - size M	PPE	3	Safety store		
		Tyvex suits - size L	PPE	12	Safety store		
		Tyvex suits - size XL	PPE	12	Safety store		
		Tyvex suits - size XXL	PPE	3	Safety store		
		Nitrile gloves (disposable) - size S	PPE	2 boxes	Safety store		
		Nitrile gloves (disposable) - size M	PPE	2 boxes	Safety store		
		Nitrile gloves (disposable) - size L	PPE	3 boxes	Safety store		
		Safety sunglasses	PPE	20 pairs	Safety store		

		PVC gloves	PPE	20 pairs	Safety store		
		High visibility Safety Vests	PPE	20	Safety store		
		Whistles	Attracting attention in the field	20	Tramping store		
		Hibitane/Hibiclens disinfectant - 500ml	Hand cleaning	1	Order through local veterinarian		
		Paper towels	Hand cleaning	10 rolls	supermarket	Y	
		Alcohol hand gel (small bottles)	Hand cleaning	20	supermarket	Y	
		Field note books (plastic paper)	Field notes	10	www.geosystems.co.nz		
		Pencils	Field notes	20	Local bookshop		
		Field Guide to Birds of NZ	Species Identification	1	Local bookshop	Y	
		Infectious waste bags	Containing oiled PPE etc	20	Contact NZWHC		
		Plastic leg bands for bird ID	Bird ID	50	Contact NZWHC		
		Sharpie pens	Labelling	10	Local bookshop		
Bin 2 - Stabilisation		50ml syringes, without catheter	Oral fluid administration	20	Order through local veterinarian		
		20ml syringes, without catheter	Oral fluid administration	15	Order through local veterinarian		
		10ml syringes, without catheter	Oral fluid administration	15	Order through local veterinarian		
		Roll of silicone tubing	Oral fluid administration	20 m	Rubbermark		
		Cotton buds	Cleaning oil from eyes and mouth	5 pkts	Pharmacy		
		0.9% NaCl (500ml bottle)	Cleaning oil from eyes and mouth	2	Get at local veterinarians	Y	
		Squeeze bottles	Cleaning oil from eyes and mouth	3	Plastic box		

		Digital thermometer	Cloacal temperature taking	1	Local chemist/pharmacy		
		Electrolytes, powder	Oral fluid administration		Pharmacy, supermarket, vet clinic	Y	
Bin 3 - Dead bird collection		Plastic bags	Holding dead birds	100	Plastic box		
		Cable ties, 200mm	Sealing bags	100	Hardware store		
		Cable ties, 100mm	Sealing bags	100	Hardware store		
Bin 3 - Administration etc		Clipboards		5	Bookshop		
		Writing Pads		5	Bookshop		
		Nylon rope - 4mm 30m		2	Hardware store		
		Animal admission logs in folder	Complete for each animal	60	Photocopied forms		
		Register of equipment (in and out)		1	Contact NZWHC		
		Stock rotation schedule		1	Contact NZWHC		
		Audit checklist		1	Contact NZWHC		
		Non-tamper plastic sealing tag		1	Contact NZWHC/MNZ		
		Bird scare tape	Hazing	5 rolls	Farm supplier		
		Sports horn	Hazing	1	NZ Safety		
		Rotatable stock:					
		Nitrile gloves – check expiry dates during audit and replace as necessary					

Regional Oiled Wildlife Response Trailers (One stored at South Port, Bluff) See Annex 1.6.5

These contents are intended to cater for 50 birds, 20 field personnel and 12 wash personnel

PERMANENT TRAILER ITEMS

Equipment	Bin	Category	Use	Number	Supplier	Checked
Waders (various sizes)	1	Search & capture/PPE	Field work	5	Massey	
First aid kit	2	Search & capture/PPE	Rehab centre + staging site	1	NZ Safety	
waterproof notebooks	2	Search & Capture	Recording	10 (1 per field team)	Science supplier	
Pencils	2	Search & Capture	Recording	50 (2 per recorder)	Stationery retailer	
Bird bands	2	Search & Capture	Identification of individuals	150 minimum	Massey	
Wildlife collection tags	2	Search & Capture	Identification of individuals	75	Massey	
Dead bird bags	2	Search & Capture	Collecting dead birds	100	Packaging retailer	
Cable ties (100 mm)	2	Search & Capture	Collecting dead birds	100	Packaging retailer	
Field guide to birds of NZ	2	Search & Capture	species ID	1	Stationery retailer	
'Danger' Tape (300 m)	2	Search & Capture	constructing areas of exclusion	1	NZ Safety	
Bird Scare Tape	2	Search & Capture	hazing	6	Farmlands	
Sports horn	2	Search & Capture	hazing	5	Safety shop	
Pillow cases	2	Search & Capture	Collecting live birds	50	Manchester shore	
Hand nets	-	Search & Capture	Capture	10	Fishing store	
Matasorb' Sorbent mats	-	Search & Capture	Bottom of transport boxes	100	Process lubricants	
Transport boxes - Large	-	Search & Capture	Transport	20	Massey	
Transport Boxes - Small	-	Search & Capture	Transport	30	Massey	
Tarpaulins (4 x 6 m)	-	Staging	Shelter	4	Hardware store	
Warratah stakes & caps	-	Staging	Shelter	6	Farmlands	
Wind break (50 m rolls)	-	Staging	Shelter	2	Hardware store	
Trestle Table	-	Staging	Field stabilisation platform	1	Hardware store	
Rope	3	Tools	Shelter	4	Hardware store	
Masking tape	3	Tools	general	5	Hardware store	
Long-handled pruners	3	Tools	general	1	Hardware store	
Saw	3	Tools	general	1	Hardware store	
Stanley Knife	3	Tools	general	1	Hardware store	
Tape Measure	3	Tools	general	1	Hardware store	

Bottle Jack, 4000kg	3	Tools	general	1	Hardware store	
Staple Gun	3	Tools	Constructing shelter	1	Hardware store	
Staples (box of)	3	Tools	Constructing shelter	1	Hardware store	
WD-40	3	Tools	general	1	Hardware store	
Wheel Brace	3	Tools	general	1	Hardware store	
Duct Tape	3	Tools	general	1	Hardware store	
Cloth Tape	3	Tools	General	1	Hardware store	
Torches, dolphin	3	Tools	general	5	Hardware store	
Cable ties 200 mm	3	Tools	general	20	Hardware store	
Extension Cords (30 m)	3	Tools	general	2	Hardware store	
Tergo bird wash (20 L)	-	Wash	Detergent	2	Massey stockpile	
Large wash tubs	-	Wash	Wash	6	Hardware store	
Fire extinguisher	4	Wash/PPE	Stabilisation, wash	1	NZ Safety	
Plastic aprons	4	Wash/PPE	Wash	12	NZ Safety	
Water pik	4	Wash	Cleaning head	1	Dental supplier	
Tooth brushes	4	Wash	Cleaning head	20	Supermarket	
Small plastic tubs	4	Wash	Holding wash equipment	10	Hardware store	
small measuring jugs	4	Wash	Detergent	4	Supermarket	
Squeeze bottles	4	Wash	Cleaning head	5	Pharmacy	
Towels	4	Wash	wrapping	20	Department store	
Cotton tips (pkt of 100)	4	Wash	Clean oil from delicate tissues	5	Pharmacy	
Silicon tube; sm x 20m	5	Stabilisation	Rehydration	1	Massey	
Silicon tube: lg x 4 m	5	Stabilisation	Rehydration	1	Massey	
50 ml syringe	5	Stabilisation	Rehydration	20	Massey	
20 ml syringe	5	Stabilisation	Rehydration	15	Massey	
10 ml syringe	5	Stabilisation	Rehydration	15	Massey	
Cotton tips (pkt of 100)	5	Stabilisation	Clean oil from delicate tissues	10	Pharmacy	
Fire extinguisher	5	Stabilisation/PPE	Stabilisation, wash	1	NZ Safety	
Heat lamps	6	Stabilisation	temperature modification	10	Hardware store	
bulbs for heat lamps	6	Stabilisation	temperature modification	10	Hardware store	
Enclosure thermometers	6	Stabilisation	Temperature monitoring	3	Electronics store	
Scalpel Blades, Size 22	7	Postmortem	Avian necropsy	100	Medical supplier	
Scalpel Handles	7	Postmortem	Avian necropsy	1	Medical supplier	
Scissors, sharp	7	Postmortem	Avian necropsy	1	Medical supplier	

Scissors, blunt	7	Postmortem	Avian necropsy	1	Medical supplier	
Forceps	7	Postmortem	Avian necropsy	1	Medical supplier	
Bone-cutting forceps	7	Postmortem	Avian necropsy	1	Medical supplier	
Specimen Pottles Pink	7	Postmortem	Sample collection	100	Medical supplier	
Bags, Biohazard	7	Postmortem	Waste collection	10	Medical supplier	
Small sharps container	7	Postmortem	Used scalpel collection	1	Medical supplier	
Tissue cassettes/sponges	7	Postmortem	Fixing tissue in formalin	20	Medical supplier	
Whirlpak bags	7	Postmortem	Storing tissues once fixed	100	Medical supplier	
Waterproof labels	7	Postmortem	To go in formalin with tissues	1 notebook	Science supplier	
Syringes - 1ml	8	Veterinary	Blood collection	100	Medical supplier	
Needles, 25g, 3/4 inch	8	Veterinary	Blood collection	100	Medical supplier	
Capillary Tubes	8	Veterinary	Blood collection for PCV/TPP	400	Medical supplier	
Cristaseal (Sealant)	8	Veterinary	Blood collection for PCV/TPP	2	Medical supplier	
Refractometer	8	Veterinary	Reading TPP	1	Medical supplier	
PCV chart	8	Veterinary	Assess PCV	1	Medical supplier	
Calculator	8	Veterinary	Fluid calculations etc	1	Stationery retailer	
Field centrifuge	-	Veterinary	Spin capillary tubes	1	Medical supplier	
Cotton Balls (pkt of)	8	Veterinary	Swab for venipuncture site	1	Pharmacy	
Micropore tape	8	Veterinary	For venipuncture site	1	Medical supplier	
Coverslips (pkt of)	8	Veterinary	parasitology	2	Medical supplier	
Microscope Slides (pkt of)	8	Veterinary	parasitology	1	Medical supplier	
Small sharps container	8	Veterinary	Used needles etc	1	Medical supplier	
Slide holder	8	Veterinary	Fixing slides	1	Medical supplier	
Stethoscope	8	Veterinary	Auscultation	1	Medical supplier	
Thermometer - digital	8	Veterinary	Cloacal temperature	1	Medical supplier	
Multisorb swabs – box sm	8	Veterinary	Wound dressings	1	Medical supplier	
Multisorb swabs – box lrg	8	Veterinary	Wound dressings	1	Medical supplier	
Vet wrap	8	Veterinary	Bandaging	5	Medical supplier	
Soffban	8	Veterinary	Bandaging	5	Medical supplier	
Melolin	8	Veterinary	Bandaging	20	Medical supplier	
First aid kit	8	Veterinary/PPE	Rehab centre + staging site	1	NZ Safety	
Zeolite	-	Cleaning & hygiene	Cleaning up spills	1	Engineer supplier	

TRAILER SHOPPING LIST (Items to be purchased locally)

Equipment	Category	Use	Number	Supplier	On Shopping list
Tyvex suits	PPE	All stages	1/person/day for 3 days	NZ Safety	Y
Nitrile gloves size S (box of 100)	PPE	All stages	10 pairs / person / day for 3 days	NZ Safety	Y
Nitrile gloves size M (box of 100)	PPE	All stages	10 pairs / person / day for 3 days	NZ Safety	Y
Nitrile gloves size L (box of 100)	PPE	All stages	10 pairs / person / day for 3 days	NZ Safety	Y
Protective sunglasses	PPE	Field work	1 per field personnel	NZ Safety	Y
Rubber gumboots	PPE	Wash, stabilisation	1 per field personnel - sizes variable	NZ Safety	Y
Sunblock	PPE	Field work	1 per field team	Supermarket	Y
Sunhats	PPE	Field work	1 per field personnel	NZ Safety	Y
First aid kit - small	PPE	Field work	one per field team	NZ Safety	Y
Waterproof jackets + pants	PPE	Field work	1 pair per field personnel	NZ Safety	Y
Ear plugs	PPE	Wash	1 packet per wash personnel	NZ Safety	Y
Safety goggles	PPE	Stabilisation, wash	1 pair per wash personnel	NZ Safety	Y
Overalls, cotton	PPE	All stages	3 pairs per personnel	NZ Safety	Y
Long gloves	PPE	Wash	1 per wash personnel	NZ Safety	Y
Face visors	PPE	Wash	1 per wash personnel	NZ Safety	Y

Boot covers	PPE	Wash	1 per wash personnel	NZ Safety	Y
Whistles	PPE	Field work	1 per field personnel	Tramping store	Y
PVC gloves	PPE	Field work	1 pair per field personnel	NZ Safety	Y
Alcohol hand gel (small bottles)	PPE	Field work	1 per field personnel	Supermarket / Pharmacy	Y
Batteries for torches	Tools	general	5	Hardware store	Y
Toothbrushes	Wash	Cleaning head	10	Supermarket	Y
Funnels	Wash	Pouring bird wash	2	Supermarket	Y
Electrolytes (Animal brands e.g. “Revive” for calfs, are preferable. Human brands are ok)	Stabilisation	Rehydration	to make 10 litres	Massey / Veterinarian / Rural Supplier / Pharmacy	Y
Saline (500 ml bottle)	Stabilisation	Removal of oil from eyes/nares	10	Massey / Veterinarian / Pharmacy	Y
Formalin (small bottle)	Postmortem	Fixing tissues	1	Massey / Veterinarian / Rural supplier	Y
A4 Lined Pads	Stationary	general	25	Stationery retailer	Y
Clipboards	Stationary	general	25	Stationery retailer	Y
Pencil Sharpener	Stationary	general	25	Stationery retailer	Y
Duct tape	Stationary	general	3	Hardware store	Y
Sharpie Permanent Marker Black	Stationary	general	25	Stationery retailer	Y
Food blender	Feeding	Rehabilitation - food prep	1	Department store	Y
Electronic Scales	Feeding	Rehabilitation - food prep	1	Department store	Y
Batteries for electronic kitchen scales	Feeding	Rehabilitation - food prep	as necessary	Hardware store	Y
Set of kitchen knives	Feeding	Rehabilitation - food prep	2	Department store	Y
Broom	Cleaning & hygiene	Cleaning	2	Supermarket	Y
Buckets	Cleaning & hygiene	Cleaning	5	Supermarket	Y
Chux Regular Cloths	Cleaning & hygiene	Cleaning	8	Supermarket	Y
Dustpan & Brush	Cleaning & hygiene	Cleaning	2	Supermarket	Y
Garbage Bags (roll of 10)	Cleaning & hygiene	Cleaning	3	Supermarket	Y
Paper Hand Towels (roll)	Cleaning & hygiene	Stabilisation/Cleaning	12	Supermarket	Y

Paper Kitchen Towels (roll)	Cleaning & hygiene	Cleaning	4	Supermarket	Y
Mop	Cleaning & hygiene	Cleaning	1	Supermarket	Y
Dish cleaning brushes	Cleaning & hygiene	Cleaning	2	Supermarket	Y
Scrubbing Brush	Cleaning & hygiene	Cleaning	3	Supermarket	Y
Hibiclens, 500ml	Cleaning & hygiene	Bacteriocidal cleaning	2	Medical supplier	Y
Simple Green All Purpose Cleaner	Cleaning & hygiene	General surface cleaner	1	Hardware store	Y
Dishwashing liquid	Cleaning & hygiene	Rehabilitation	1	Supermarket	Y
Tube Simple Green Hand Cleaner Gel	Cleaning & hygiene	Hand cleaning	2	Hardware store	Y
Trigene (Animal Trigene Advance, 1 Litre bottle)	Cleaning & hygiene	General purpose disinfectant	2	Medical supplier	Y

WD-40	Tools	general	1	Hardware store	
Wheel Brace	Tools	general	1	Hardware store	
Duct Tape	Tools	general	1	Hardware store	
Torches, dolphin	Tools	general	5	Hardware store	
Cable ties 200 mm, pkt 20	Tools	general	1	Hardware store	
Extension Cords (50 m)	Tools	general	2	Hardware store	
Bird Scaring Tape (150 m roll)	Hazing	hazing	2	Horticultural supplier e.g FruitFED	
gas cannons	Hazing	hazing	1	Horticultural supplier e.g FruitFED	
gas bottle	Hazing	hazing	1	Hardware store	
Tergo bird wash (20 L)	Wash	Detergent	1	Massey stockpile	
Wash tub	Wash	Wash	2	Enquire with Massey	
Wash tub stand	Wash	Wash	2	Enquire with Massey	
Water testing kit	Wash	Assessing water hardness	1	Enviroequip	
Water pik	Wash	Cleaning head	1	Dental supplier	
Large plastic tubs	Wash	Carrying water	4	Hardware store	
Small plastic tubs	Wash	Holding wash equipment	10	Hardware store	
small measuring jugs	Wash	Detergent	4	Supermarket	

Squeeze bottles	Wash	Cleaning head	5	Pharmacy	
Towels (pre-washed)	Wash	wrapping	10	Department store	
Silicone tubing (sm & lg 20 m rolls)	Stabilisation	Rehydration	1 of ea	Rubbermark	
Crop needles, curved (set of 3)	Stabilisation	Rehydration	1	Enquire with Massey	
Heat lamps	Stabilisation	temperature modification	10	Hardware store	
bulbs for heat lamps	Stabilisation	temperature modification	10	Hardware store	
Scalpel Blades Box 100 x Size 22	Postmortem	Avian necropsy	1	Medical supplier	
Scalpel Handles	Postmortem	Avian necropsy	3	Medical supplier	
Scissors, mayo	Postmortem	Avian necropsy	2	Medical supplier	
Scissors, sharp	Postmortem	Avian necropsy	2	Medical supplier	
Forceps, rat tooth	Postmortem	Avian necropsy	2	Medical supplier	
Specimen Pottles Pink	Postmortem	Sample collection	100	Medical supplier	
Bags, Biohazard	Postmortem	Waste collection	4 or 5	Medical supplier	
Small sharps container	Postmortem	Used scapel collection	1	Medical supplier	
Lidded plastic specimen containers	Postmortem	Storing formalised tissues until fixed	20	Medical supplier	
Whirlpak bags	Postmortem	Storing tissues once fixed	100	Medical supplier	
Waterproof labels (notebook)	Postmortem	To go in formalin with tissues	1	Geosystems NZ	
Field guide to birds of NZ	Stationary	species ID	1	Stationery retailer	
'Danger' Tape (300 m roll)	Stationary	constructing areas of exclusion	1	NZ Safety	
Zeolite, bucket of	Cleaning & hygiene	Cleaning up spills	1	Engineering supplier	
Syringes - 1ml (100/box)	Veterinary	Blood collection	1	Medical supplier	
Needles, 25g, 3/4 inch (100/box)	Veterinary	Blood collection	1	Medical supplier	
Capillary Tubes (100/pkt)	Veterinary	Blood collection for PCV/TPP	2	Medical supplier	
Cristaseal (Capillary Tube Sealant)	Veterinary	Blood collection for PCV/TPP	2	Medical supplier	
Refractometer	Veterinary	Reading TPP	1	Medical supplier	
PCV chart	Veterinary	Assess PCV	1	Medical supplier	
Field centrifuge	Veterinary	Spin capillary tubes	1	Medical supplier	
Cotton Balls (pkt of)	Veterinary	Swab for venipuncture site	1	Supermarket / Pharmacy	

Micropore tape	Veterinary	For venipuncture site if necessary	1	Medical supplier	
Coverslips (pkt of)	Veterinary	Faecal wet prep for parasitology	1	Medical supplier	
Microscope Slides (pkt of)	Veterinary	Faecal wet prep for parasitology	1	Medical supplier	
Sharps Containers	Veterinary	Used needles etc	1	Medical supplier	
Stethoscope	Veterinary	Auscultation	1	Medical supplier	
Thermometer - digital	Veterinary	Cloacal temperature	1	Medical supplier	
Thermometer - glass	Veterinary	To back up digital one	1	Medical supplier	
Tyvex suits	PPE	All stages	1/person/day for 3 days	NZ Safety	Y
Nitrile gloves size S (box of 100)	PPE	All stages	10 pairs / person / day for 3 days	NZ Safety	Y
Nitrile gloves size M (box of 100)	PPE	All stages	10 pairs / person / day for 3 days	NZ Safety	Y
Nitrile gloves size L (box of 100)	PPE	All stages	10 pairs / person / day for 3 days	NZ Safety	Y
Protective sunglasses	PPE	Field work	1 per field personnel	NZ Safety	Y
Rubber gumboots	PPE	Wash, stabilisation	1 per field personnel - sizes variable	NZ Safety	Y
Sunblock	PPE	Field work	1 per field team	Supermarket	Y
Sunhats	PPE	Field work	1 per field personnel	NZ Safety	Y
First aid kit - small	PPE	Field work	one per field team	NZ Safety	Y
Waterproof jackets + pants	PPE	Field work	1 pair per field personnel	NZ Safety	Y
Ear plugs	PPE	Wash	1 packet per wash personnel	NZ Safety	Y
Safety goggles	PPE	Stabilisation, wash	1 pair per wash personnel	NZ Safety	Y
Overalls, cotton	PPE	All stages	3 pairs per personnel	NZ Safety	Y
Long gloves	PPE	Wash	1 per wash	NZ Safety	Y

			personnel		
Face visors	PPE	Wash	1 per wash personnel	NZ Safety	Y
Boot covers	PPE	Wash	1 per wash personnel	NZ Safety	Y
Whistles	PPE	Field work	1 per field personnel	Tramping store	Y
PVC gloves	PPE	Field work	1 pair per field personnel	NZ Safety	Y
Alcohol hand gel (small bottles)	PPE	Field work	1 per field personnel	Supermarket / Pharmacy	Y
Batteries for torches	Tools	general	2	Hardware store	Y
Toothbrushes	Wash	Cleaning head	10	Supermarket	Y
Funnels	Wash	Pouring bird wash	2	Supermarket	Y
Electrolytes (Animal brands e.g. “Revive” for calfs, are preferable. Human brands are ok)	Stabilisation	Rehydration	to make 10 litres	Veterinarian / Rural Supplier / Pharmacy	Y
Cotton tips (pkt of 100)	Stabilisation / wash	Removal of oil from delicate tissues	15	Supermarket / Pharmacy	Y
Saline (500 ml bottle)	Stabilisation	Removal of oil from eyes and nares	10	Veterinarian / Pharmacy	Y
Formalin (small bottle)	Postmortem	Fixing tissues	1	Veterinarian / Rural supplier	Y
A4 Lined Pads	Stationary	general	25	Stationery retailer	Y
Clipboards	Stationary	general	25	Stationery retailer	Y
Pencil	Stationary	general	50	Stationery retailer	Y
Pencil Sharpener	Stationary	general	25	Stationery retailer	Y
Duct tape	Stationary	general	3	Hardware store	Y
Sharpie Permanent Marker Black	Stationary	general	25	Stationery retailer	Y
Food blender	Feeding	Rehabilitation - food prep	1	Department store	Y
Electronic Scales	Feeding	Rehabilitation - food prep	1	Department store	Y
Batteries for electronic kitchen scales	Feeding	Rehabilitation - food prep	as necessary	Hardware store	Y
Set of kitchen knives	Feeding	Rehabilitation - food prep	2	Department store	Y
Broom	Cleaning & hygiene	Cleaning	2	Supermarket	Y

Buckets	Cleaning & hygiene	Cleaning	5	Supermarket	Y
Chux Regular Cloths	Cleaning & hygiene	Cleaning	8	Supermarket	Y
Dustpan & Brush	Cleaning & hygiene	Cleaning	2	Supermarket	Y
Garbage Bags (roll of 10)	Cleaning & hygiene	Cleaning	3	Supermarket	Y
Paper Hand Towels (roll)	Cleaning & hygiene	Cleaning	4	Supermarket	Y
Paper Kitchen Towels (roll)	Cleaning & hygiene	Cleaning	4	Supermarket	Y
Mop	Cleaning & hygiene	Cleaning	1	Supermarket	Y
Dish cleaning brushes	Cleaning & hygiene	Cleaning	2	Supermarket	Y
Scrubbing Brush	Cleaning & hygiene	Cleaning	3	Supermarket	Y
Hibiclens, 500ml	Cleaning & hygiene	Bacteriocidal cleaning	2	Medical supplier	Y
Simple Green All Purpose Cleaner	Cleaning & hygiene	General surface cleaner	1	Hardware store	Y
Diswashing liquid	Cleaning & hygiene	Rehabilitation	1	Supermarket	Y
Tube Simple Green Hand Cleaner Gel	Cleaning & hygiene	Hand cleaning	2	Hardware store	Y
Trigene (Animal Trigene Advance, 1 Litre bottle)	Cleaning & hygiene	General purpose disinfectant	2	Medical supplier	Y

Resources and Logistical Support

Area A (add a separate table for each significant area within a region if appropriate)

Products	**Company Name** (some examples provided – omit as necessary)	**Address**	**Phone Number (See Phone Book)**	**Fax Number**	**Email**	**Web Address**
PPE	Protector Safety					www.protectorsafety.co.nz
	NZ Safety					www.nzsafety.co.nz
Building Supplies	Mitre 10					www.mitre10.co.nz
	Placemakers					www.placemakers.co.nz
	Carters					www.carters.co.nz
Plumbing Supplies	Plumbing World					www.plumbingworld.co.nz
Gas supplies						
Hire Centres e.g. Marquees Portable buildings Fencing Toilets Refrigeration Tarpaulins Generators	Hirequip					www.hirequip.co.nz
Drainage and Earthworks						
Transportation	Budget Car and Truck Rental					www.budget.co.nz
Waste Management						

Products	Company Name (some examples provided – omit as necessary)	Address	Phone Number (See Phone Book)	Fax Number	Email	Web Address
Veterinary supplies						
Electrolytes, PPE, feeds	PGG Wrightsons					www.pggwrightson.co.nz
	RD1					www.rd1.com
	Farmlands					www.farmlands.co.nz
Fish supplies*	The New Zealand King Salmon Company Ltd (Tracy Dawson)	11-18 Bullen St, P O Box 1180, Nelson	03 346 4861 029 622 4916 (Tracy)	03 546 4861	tracy.dawson@kingsalmon.co.nz	www.kingsalmon.co.nz
Live insects	Biosupplies	201 Eskdale Road, Birkenhead Auckland 1310	09 4182352	09 4182352	bugs@bio.pl.net	www.ak.planet.gen.nz
Security Firms						
Accommodation						
Hazing Supplies e.g. gas cannons, bird scare tape	FruitFed					www.fruitfed.co.nz

* Able to supply up to 2 tonne of salmon smoults within 2 days

NB: Accommodation, catering and personnel transport is typically organised by ICC through MNZ controlled cost centres

Annex 1.4.3

1.4.3a – Sampling Kits

Two sampling kits containing jars, labels etc within bright red PVC carry bags, are stored at Environment Southland's offices in the Skyline Garage at the back of the Councils 22 Price Street office.

A special floating self-tipping device from sampling from ship's bilges or points well above the sampling point is stored in the same garage as the sampling kit.

Environment Southland Pollution Response Trailer
Inventory As at 6/6/2019

Trailer Registration No:R5037

River Boom	3x Yellow inflatable
Anchors	4x
Nitrogen Bottles	1x
Absorbent material –general purpose	1x 20kg Bag
Absorbent Boom	3x3m 3x5m 1x 10m others:small assorted
Absorbent pads	Two rolls (mounted in trailer)Chemical & Oil
Absorbent pillows	8x
Kitty litter	1x Bag
First Aid Kit	1x
Gravel	1x
Axe	1x
Rope	Various for booms
Rope Shackles	Various for booms
Dispersant-Gamlin	Nil
Warratahs	Nil
Wooden stakes	10 Large
Gumboots	5 pairs various sizes
Overalls	3x cotton 3x disposable 1x chemical suite
Hardhats	3x
Safety glasses	3x
Claw hammer	1x
Pliers	1x
Crescents	Nil
Small hammer	Nil
Disposable gloves	In Drum
Hacksaw	Nil
Pinch Bar	Nil
Respirators	3x
Screwdriver set	Nil
Spade	Nil
Square mouth shovel	Nil
Shovels	2x long handle
Trailer stand	1x
Drum	1x 100L
Containers	2x 20L
Life jackets	Nil
Broom	Nil
Road cones/markers	nil

Note
The above trailer is stored in the Environment Southland grages in Invercargill-see a member of the compliance Division to gain access or the Pollution duty officer after hours

Written contents of this page has been removed

NOTE:
The above trailer is stored in the Environment Southland Garages in Invercargill – See a member of the Compliance Division to gain access or the Pollution Duty Officer after hours.

2nd Pollution Response Vehicle Paul Reid

Inside Well Deck

Item	Quantity
ICC Drainage & Water Maps	1
Waratahs	2
Sledgehammer	1
Spade	1
Oleophylic mop& bucket	1
Sampling arm	1
12mm ropes-20 metres	2
T270 Oilsorb boom	1
White mesh boom	1
Large plastic bags	3

45 Litre Container	Safety helmets x2 Heavy gloves x2 Safety glasses Torch Duct tape First aid kit Sorbent mat x1 Hi-viz vest Ropes x2
45 Litre Container	Rhodamine 1 litre 2 litres (water) x2 2 litres containers x2 Whirlpak bags (small) Disposable overalls-2 pairs Sanitiser & hand cleaner Zip lok bags Large rubbish bags x2 Bio-hazard bags x2 Notebook 12mm rope Tape measures-8 metre -20 metre
45 Lire Container	Sorbent Roll 3M pillow Cat litter 7 litre Handee towels Toilet paper Plastic bags x4

NOTE:
The above vehicle is stored at Environment Southland in Invercargill – See a member of the Compliance Division to gain access or the Pollution Duty Officer after hours.



NOTE:
The above vehicle is stored at Environment Southland in Invercargill – See a member of the Compliance Division to gain access or the Pollution Duty Officer after hours.

Pollution Response Vehicles 1 & 3

Item	Quantity
Oleophylic mop & bucket	1
Matasorb	1 bag
3M pillow	2
T270 Oilsorb boom	1
White mesh boom	1
Manhole lifter	1
Sledgehammer	1
Waratahs	2
Spade	1
Rope 12mm	1
Sampling arm	1
Spill Kit	1

45 litre Container	Absorbent Roll
	Duct tape
	Packing tape
	Ropes x2
	Disposable gloves-box
	Dettol handwash
	Pal scoop
	Tape measures-8 metre
	-20 metre
	Rhodamine-1 litre
	Wet ones
	Barrier cream
	2 litres (water) x2
	2 litres container x2
	Pliers
	Craft knife
	Marker pen
	Screwdriver
	Sticky labels
	Whirlpak bags-15
	Toilet paper
Fish Bin	Boom
	Pillows x2
	Plastic bag
20 Litre Chemical Kit	

NOTE:
The above vehicles are stored at Environment Southland in Invercargill – See a member of the Compliance Division to gain access or the Pollution Duty Officer after hours.

20 Litre Solvent/Oil/Lubricant Kit

45 litre Container	Disposable Overalls-3 pairs Cloth Overalls – size 10 Safety glasses Safety helmet with ear defenders Hi-viz vest Jacket Overpants
Inside Cab	Camera GPS Torch – x2 Fire Extinguisher Phone Book Set of plans First Aid Kit Disposable Camera

NOTE:
The above vehicles are stored at Environment Southland in Invercargill – See a member of the Compliance Division to gain access or the Pollution Duty Officer after hours.

1.4.6

NZAS NEW ZEALAND ALUMINIUM SMELTER

BLUFF SMELTER SITE, TIWAI POINT
(03) 218-5999
Ask for Peter Fairbairn.

OIL SPILL RESPONSE EQUIPMENT

OIL BOOM PACKS	25 EA.
MATASORB SPILL RESPONSE KITS	2
CASTROL MOP	8
BUCKET OF PUG N DIKE	1
RAPP IT PIPE REPAIR BANDAGE	7
ASSORTED	
ROPES 15M	4
WOODEN PEGS	18
METAL RODS	6
FILE - CBP ON OIL SPILLS/MAP OF AWARUA BAY/TIDE CHART	
DENSO TAPE 10M ROLLS	4
ROLL OF BARRIER TAPE	2
HAZED LIGHTS	3
RUBBUR TIES	6
SELF AMALGAMATED RUBBER	2

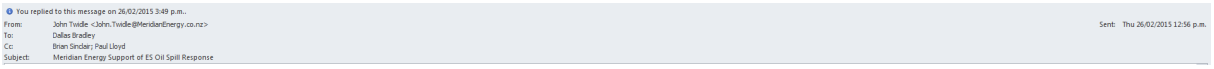
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Contact Persons: Murray Wood or Ray Winter

OIL SPILL RESPONSE EQUIPMENT

CLOTHING	
GUMBOOTS	4 PR
GLOVES - RUBBER	6 PR
- YELLOW LEATHER	10 PR
- WHITE CLOTH	12 PR
CLOTH BALACLAVA	16
JACKETS - YELLOW PARKA	4
- ORANGE "COMMANDER"	1
TROUSERS, YELLOW	2
OVERALLS, WHITE PAPER	8
TOOLS	
BROOMS	4
LONGHANDLED SCRUBBIMG BRUSH	4
MATCHING PLASTIC BUCKETS	2
GALVANISED BUCKETS	2
SQUEEGEES	5
SHOVEL	4
SCREWDRIVER, 300 MM	2
CRESCENT, 12"	2
10"	2
8"	1
PIPE WRENCH	2
CLAW HAMMER	2
SLEDGEHAMMER	2
NAILS	
AXE	2
TORCH	3

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You replied to this message on 26/02/2015 3:49 p.m.
From: John Twidle <John.Twidle@MeridianEnergy.co.nz>
Sent: Thu 26/02/2015 12:56 p.m.
To: Dallas Bradley
Cc: Brian Sinclair; Paul Lloyd
Subject: Meridian Energy Support of ES Oil Spill Response

Hi Dallas,

I would like to re-affirm Meridian Energy's commitment with respect to Oil Spill Response in the areas in and around West Arm Manapouri, and Deep Cove Doubtful Sound, Fiordland.

Meridian is keen to support Environment Southland on a 'Best Endeavours' basis in the event of an emergency of this nature in order to enable the most timely and effective response. Resources that Meridian may have access to include;

Manpower
Environment Southland facilitated the training and refreshing of two Meridian employees from this area, namely John Twidle and Brian Sinclair, to MSA 'Tier 2' standard. Meridian also has access to other manpower in the area should the need arise.

Land & Water Transport:
Meridian has immediate and priority access to;

Water:

Personnel Craft	'MV Mararoa'	Surveyed to 48 pax + 750 Kg's of deck freight operating on Lake Manapouri
Heavy Freight Barge:		Tug Boat 'Hustler' + Barge capable of carrying 250 Tonne on Lake Manapouri
'Fizz' Boat	'Lil Slick'	5.3 Mtr Aluminium, cuddy cabin with 115 4-Stroke Yamaha O/Bd

6.9

Land:
4WD Vehicles based at West Arm for access across Wilmot Pass to Deep Cove
Van for personnel transport based at West Arm
Other specialist equipment: All-terrain forklift, Hiab truck, trailers, marquees, other plant that comes and goes randomly to/from West Arm

Equipment:
Oil Response Trailer: A dedicated, hard-covered trailer equipped with absorbent booms, tools, lighting, signage and PPE. Trailer is rigged with slings for helicopter lifting. Weight is always kept at no more than 1.0 Tonne to enable lift by Squirrel Helicopter.
Additional Booms: A stock of additional booms is held in the West Arm Store.

Process:
Meridian personnel at Manapouri are trained to CIMS2 & CIMS4 standard for Incident Management.
Manapouri Emergency Response capability is supported by Management and support personnel from the Waitaki Valley if needed.
Meridian trains in its emergency response capability and has a site-specific emergency response manual for Manapouri that marries into the overall Meridian Emergency response manual.

Regards,

John Twidle
Site Manager
Meridian Energy Ltd
Manapouri Power Station, PO Box 101 Manapouri
DDI: (03) 249-8711 or (03) 435-9411 Fax: 03 249-8702 Cell: (021) 442-897 Sat: 0088 1641-447026
john.twidle@meridianenergy.co.nz

NOTE: If John Twidle is unavailable, contact Brian Sinclair.

MERIDIAN ENERGY OIL SPILL RESPONSE EQUIPMENT HELD AT WEST ARM, LAKE MANAPOURI

OIL RESPONSE EQUIPMENT

BAY 1	15 METRE BOOMS		9
	30 METRE BOOMS		4
	BOOM HOOKS		2
	20 LITRE FUEL CONTAINERS		2
	OIL		1
BAY 2	LIFE JACKETS		5
	OIL OBSORBENT PADS (86*96cm)		28
	OIL OBSORBENT ROLL (38"*144')		2
	OIL OBSORBENT GRIT 20Kg		8
	OIL OBSORBENT MOP		1
	OIL OBSORBENT PILLOWS (5"*14"*25")		60
	OIL OBSORBENT MINI BOOMS		60
	OIL OBSORBENT PILLOWS (45cm*45cm)		9
	OIL OBSORBENT BOOMS		4
	OIL OBSORBENT BOOMS (Loose)		1
	BALE ROPE		1
	25 HP JOHNSON OUTBOARD MOTOR		1
	25 HP YAMAHA OUTBOARD MOTOR		1
	20 Ltr FUEL CONTAINER AND FUEL LINE		1
	SPARE FUEL LINE		1
CENTRE BAY	BOAT AND TRAILER		1
	BAG CONTAINING	OVERALLS	8
		GLOVES	8
	BAG CONTAINING	OVERALLS	9
		GLOVES	6
END BAY	OIL AIR PUMP		1

OIL SKIM PAK		1
COMPRESS AIR POWERED VACCUM CLEANER		1
209Ltr DRUMS		2
CLEAR SUCTION HOSE	(LENGTHS)	3
BLACK SUCTION HOSE	(LENGTHS)	1

MERIDIAN ENERGY

OIL RESPONSE EQUIPMENT

MANAPOURI VILLAGE

TAJHMAHAL	DESCRIPTION	QUANTITY
Manapouri wharf	SORBENT BOOM	4 EACH
	SORBENT PILLOW	4 EACH
	HP 156 OILSORBENT	50 SHEETS
	RUBBISH BAGS	10 EACH
	RUBBER GLOVES	2 PAIR

This equipment is stored under the seats in the Tajhmahal. The key is in the key press . If you need any more sorbents (as listed below) they are stored on the waste oil stand in the compound. The key from the Tajhmahal will fit the lock on the oil stand gate , there is also a key in the office at the workshop

OIL STAND	DESCRIPTION	QUANTITY
Freight yard	SORBENT BOOM 6.1 m.	6 EACH
(Oil Storage Area)	SORBENT PILLOW	4 EACH
Village Compound	T 4 MINI - BOOM	12 EACH
	T 24 MINI - BOOM	2 EACH
	T 48 MINI - BOOM	2 EACH
	HP 156 OILSORBENT	50 SHEETS
	RUBBER GLOVES	2 PAIR
	RUBBISH BAGS	10 EACH
	STANLEY KNIFE	1 EACH
	SAFETY PINS	2 PACKETS
	RUBBER MAT	1 EACH

There is a total of 47 meters of sorbent boom at both sites, this boom is for the use on water ways, if more is needed ring the station operator on ph 2497916.
The mini - boom is used on land based spills but can also be used on water ways if needed ,the safety pins are used to hold these booms together .
The pillows, sorbent sheets, mini-booms,are all used for absorbing oil on land and water based spills,the rubber mat is used to block of stormwater drains.
please contact me at the station on ph 2497916 or at home on ph 2496683 if an help is needed

Twizel but can be directed to Manapouri

Colin Sinclair Warren (greenie) ~~Green~~

ps The amount of equipment my very at times ,please let me no if you use any thanks.

West Arm - Sorbents etc in each floor in powerhouse
- $45,000 boat
- heaps of gear in a store (Oil Spill Response Store)
- some gear going to Deep Cove next 7 days ← temporary.

Colin Sinclair to email an inventory. 5/12/01

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MERIDIAN OIL SPILL RESPONSE TRAILER STORED AT WEST ARM, LAKE MANAPOURI

OIL RESPONSE TRAILER

ROAD SIGNS		2	
ANCHOR AND CHAIN		1	
ANCHOR AND CHAIN		1	
BOUYS	MED	1	
	SMALL	1	
CLEANSACKS	PAPER	50	
	PLASTIC	48	
LIFE JACKETS		5	
OIL OBSORBENT MINI BOOMS		2	BOXES
OIL OBSORBENT PILLOWS		4	
OIL OBSORBENT PADS		50	
HALOGEN LIGHTS (500W)		4	
HALOGEN LIGHTS AND STANDS (250W)		4	
POWER CORDS 30M		1	
POWER CORDS 15M		4	
POWER BOARDS 4 WAY		2	
RCD		1	
ROPES 10M (YELLOW BAG)		1	
ROPES 20M (RED BAG)		1	
ROPES 30M (GREEN BAG)		1	
ROPES 50M (GREEN REELS)		3	
RUBBER GLOVES (LONG)		4	
RUBBER GLOVES (SHORT)		16	
GOGGLES		5	
SAFETY GLASSES		6	
SUN GLASSES		1	
DOLFIN TORCHES		3	

FLASHING LIGHTS		2
PAPER OVERALLS	LARGE	18
	XLARGE	18
SKIN CREAM	TUBES	2
	BOTTLES	2
SUNTAN LOTION	TUBES	2
	BOTTLES	4
HAND CLEANER	TUBES	2
DISTRESS SHEETS		6
SHOVELS		2
CROW BAR		1
STANDARDS		2
FUEL FUNNEL		1
BAG OF RAGS		1
BAGS (BLUE)		11
INSECT REPALLENT		2
BABY TALC		1
BAGS DIVING		2
WARDENS VEST		1
GUMBOOTS		2PR
OIL OBSORBENT GRIT 20 kg		2

Milford Development Association (MDA) Oil Spill Equipment and Arrangements

Oil Spill – Inner or Outer Harbour

Responsible Agency:

- Environment Southland.

Most likely manner of notification:

- Direct notification of spill from on-site observer; or call from Environment Southland (ES).
- If you are notified by a means other than Environment Southland, your first notification should be to them (telephone 0800 76 88 45).
- If MERT agrees to deploy, Fire Comm must be notified, either via telephone 111 or by radio (see below).
- Fire Comm notification will activate MERT pagers.

Comms:

By telephone: 0800 76 88 45 to Environment Southland. Other calls may be directed by the Regional or National On-Scene Commander (ROSC or NOSC).

By radio: LMR system (Land mobile radio) of the Police and Fire Service. This radio enables communication with Fire Comm in Christchurch, and directly with the police and/or fire in Te Anau. St John is not part of this system and messages for St John has to be relayed by Fire Comm.

Before You Go:

Incident Management

- Follow CIMS:
  - Decide who is in charge.
  - Assemble team.
  - Allocate roles (one person may fill more than one role).
  - Start the IMO form.
- Gather any additional information possible from radio contacts and the Emergency Comm centre. Add any additional equipment or skills likely to be required.

Equipment

Oil Booms, pads as directed by On-Scene Commander in Environment Southland.	Emergency tape
PPE including wet weather gear	Torches
Boat (boom deployment)	Notebooks
Camera	Food and water
Incident Management Organiser document	

En Route:

- Think about the consequences of the spill on any sensitive areas.
- Consider the equipment carried and how it is to be deployed.
- Review the following instructions for what to do at the scene.

At the Scene:

- Send Arrival Message.
- Prevent further spillage.
- Gather info and report to Comm on:
  - Volume of spill and reasonably precise location.
- Set up security cordons to prevent public access.
- Deploy oil spill booms, pads or any other equipment, under the direction of the ROSC. Do not use any dispersants unless authorised by the ROSC.
- Provide regular updates to the ROSC via Comm, at least every 30 minutes.
- Think about other resources required – request through Environment Southland / Fire Comm.

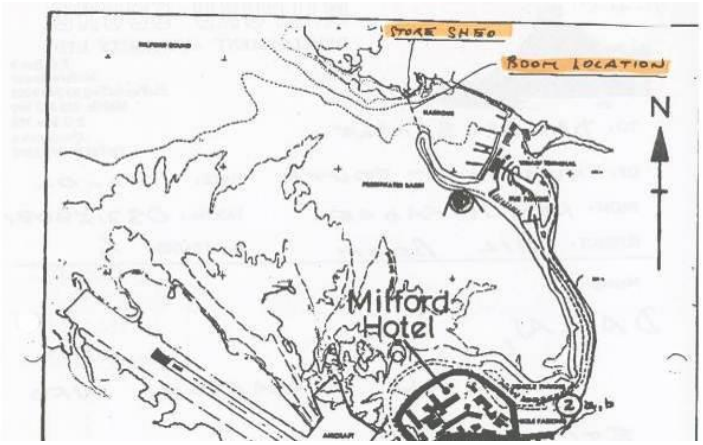
After the Event:

- Records:
  - Complete any documentation required by the ROSC.
  - Complete the IMO form, send a copy to Environment Southland, and file.
  - Complete the MERT Incident Report Form.
- Conduct a local debriefing (in concert with Environment Southland).

Attachments:

If Marine Charts are required, they will be provided by Environment Southland or MDA during the event. Charts are also available from local boat operators.

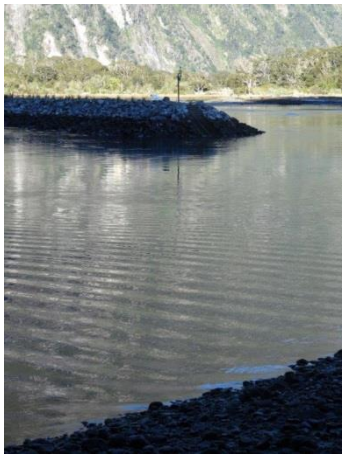
MILFORD SOUND DEVELOPMENT AUTHORITY		
Oil Spill Equipment		
Quantity	**Description**	**Location**
1	130mm x 85 metre Sorbent Oil Boom	Oil boom Shed
1	Dingy with Oars	Oil boom Shed
1	Storage Oil Boom Shed	Cemetery Point
3	240 litre Oil Spill Clean-Up Kits	HC Office
5	75mm x 6 metre Oil Spill Sorbent Socks	HC Office
1	20 litre bag mineral Sponge	HC Office
1	240 litre Oil Spill Clean-Up Kit	VT Staff Room
10	75mm x 6 metre Oil Spill Sorbent Socks	Fire Station
10	75mm x 1.2 metre Oil Spill Sorbent Socks	Fire Station
2	120 litre Oil Spill Clean-Up Kits	Fire Station
1	Roll 900mm x 20 metres Oil Only (HW)	Fire Station
40	38cm X 48cm Oil Spill Pads	Fire Station



Oil Spill Equipment is located in the oil boom shed at Cemetry Point, the Harbour Controllers Office, and the Fire Station (See photos below).



Oil Boom Shed at Cemetry Point



Freshwater Basin Outlet Channel



Harbour Controller's office



Harbour Controller's office

SOUTHERN LAKES HELICOPTERS

'UNI'

FUEL SPILL CONTINGENCY PLAN

1. Fuel spill on deck or in contained areas such as bilge's, generator room etc.

   a. Immediately place a berm around the fuel spill to avoid leakage overboard.

   b. Place absorbent material on the spill so as to fully absorb all spilled fuel.

   c. Gather absorbed material and place in a green rubbish disposal bag and then in turn, place in a further rubbish disposal bag (double-lined) and arrange for used absorbent berms and pillows to be transported to approved landfill site for disposal.

2. Fuel spillage to sea

   a. Immediately locate source of fuel spill and remedy against further spillage occurring.

   b. Place absorbent berms so as to completely surround the fuel spill.

   c. Place loose particulate or pads so as to absorb fuel spilled.

   d. Once fully absorbed, remove all used material and place in green rubbish disposal bags (double-lined).
   Arrange disposal of used material to a recognised landfill site.

   e. If fuel spillage is material, immediately notify Southland Regional Council and report on remedial action.

3. Extra Supplies of Absorbent Materials

   In the case of a spill which cannot be contained using onboard supplies of absorbent material, ring the following for emergency backup supplies:-

   Fiordland Travel Ltd
   Phone: (03) 2498901 workshop

   New Zealand Safety Ltd
   Phone: (09) 5792880 Akld (supplies held in Invercargill on a 24 hour callout basis)



REAL JOURNEYS

Oil Spill Response, Large Kits

In addition to the small oil spill response kits we have at various locations around the company, we have purchased three large bins and filled these with absorbent materials suitable for use at either a marine or land spill.

The lidded bins are constructed of a plastic type material and are suitable for the removal / transportation of used absorbent materials to disposal sites following a cleanup. The bin dimensions are 1220mm long x 1020mm wide x 820mm high. These are built on a standard pallet and can easily transported to all locations.

Contents Bin No. 1:
25 - W Mesh Booms 10cm x 3m

Contents Bin No. 2:
200 – Natural Fibre Pad 16cm x 20 cm
14 – W Mesh Pillow 45cm x 45cm
5 – W Mesh Pillow 45cm x 80cm
4 – PSKFL5 Spill Kit 12.5cm x 15.2m roll
(PSKFL5 Spill Kit – similar to Fibre Pads on a roll.)
6 – W Mesh Boom 10cm x 3m

Contents Bin No. 3:
200 – Natural Fibre Pad 16cm x 20 cm
6 – T270 Oilsorb Boom 20cm x 3m

These bins are stored at:
Real Journeys
Maintenance Division
Captain Roberts Road
Te Anau

Phone (03) 249 8901
Emergency afterhours:
021 935 139
0272 744 264
025 228 6571

Environment Southland Oil Spill Response Health and Safety Gear

	Gear	Quantity
1.	Waterproof coats, lined, preferably zipped and high visibility.	8
2.	Waterproof leggings, bib type.	8
3.	Respirators, capable of preventing inhalation of diesel fumes	8
4.	Gloves, non absorbent, capable of being used to handle rope	4
5.	Hard hats	2
6.	Protective eyewear (could be incorporated with respirators)	8
7.	One piece chem. resistant disposable overalls, large sizes	8
8.	Medical kit	1
9.	Eye Wash	1
10.	Oil remover – swarfega or similar	1
11.	Insect repellent	2
12.	Sunscreen	2
13.	Bag to store above in.	1

Health and Safety Gear (2)

1.5 Temporary Storage Sites (Oily Waste) and Oiled Equipment Cleaning Sites

1.5.1 Temporary Storage Sites

Site	Owner	Location	Comment
Quarry	Southland District Council	Omaui Road. Map Ref E47:488:964	Need key. Contact SDC 0800 732 732 Kevin McNaught Quarry is leased for for grazing.
Gravel Pit	Invercargill CityCouncil	Tiwai Road. Map ref: E47:596:957	Disused, Open
Gravel Pit	Invercargill City Council	West of Tiwai Road. Map ref: E47:582:956	Need Key. Contact ICC (03) 218 1959 Russell Pearson

Also consider skip bins and frame tanks. See **Chapter 11 of the National Plan** and Annex 1.9.1 for Oily Waste Disposal Contractor contact details.

1.5.2 Oiled Equipment Cleaning Sites

Two Southroads facilities have been identified for cleaning oiled equipment. They are the Southroads Depot, in Hunt St, Waikiwi, Invercargill and the Southroads Workshop in Lower Spey St, Invercargill.

The facility at the Depot is a truckwash and the facility at the Workshop is a washdown facility. The facilities consist of either a bunded area or sloping pad/collection sump arrangement that leads to a sediment trap and a 3 stage oil interceptor that ultimately connects to a sewer.

The Depot facility includes two water blasters that are connected to a detergent solution ("Fleetwash"). The facility also has a high volume high pressure hose.

The Workshop facility has a variable temperature waterblaster/steam cleaner that can do a cold or hot wash or steam clean

To use any of the facilities, contact Nick Riley of Southroads. Personnel using the facilities are to wear hi viz clothing and complete the appropriate paperwork held at the reception area/office. When using the facilities, sorbent materials or screens should be used to minimise the amount of oily waste entering the sediment traps and interceptor.

1.6 Oiled Wildlife Response Equipment and Generic Wildlife Response Options

1.6.1 *Regional Wildlife Kits and Regional Oiled Wildlife Response Trailers*

The Regional Wildlife Kit is stored at South Port, Bluff (see **Annex 1.4.1 for its location and Annexes 1.4.2 for its contents**). The kit contains equipment required for the first 24 hours of a response. A Regional Oiled Wildlife Response Trailer is also stored at Bluff

Currently, there are three mobile trailers owned by the Maritime NZ but managed by Massey University. To mobilise the trailers contact Maritime NZ, Oil Spill Duty Officer **04 473 6369.** As mentioned above, one of the trailers is stored in the Oil Spill Equipment Store at Bluff (see **1.6.5 for details re keys and the contents of the trailer**).

NB: ***The regional kits are start-up units for small numbers of birds for the initial stage (first 24 hours) of a response. They are not substitutes for Temporary Holding Centres and Temporary Rehabilitation Centres.***

1.6.2 *Limits on Southland Regional Response Expectations*

Taking into account the type and number of species likely to be impacted in the event of an oil spill, and the limitations with respect to the Temporary Holding Centres, Temporary Rehabilitation Centres, equipment and trained personnel in the regions, the regional response expectations are:

- Up to 50 birds (mixed species)

If there is a need to prioritise an oiled bird response, that response will be guided by the priority lists of birds contained in **Annex 4.15**.

1.6.3 *Generic Wildlife Response Options*

WILDLIFE RESPONSE OPTIONS

RESPONSE OPTION	PREFERRED STRATEGY	NOTES
Deployment of field teams	Road, boat, air	For assessing situation
Field Reconnaissance	Shore-based on foot Shore based by ATV Aerial	For assessing situation, planning and decision making
Deterrence	Case-by-case	Will vary with season/species etc.
Pre-emptive Capture	Case-by-case/site by site; particularly endangered/threatened species (NZ dotterel) – may not be feasible for scattered pairs in isolated locations	Seek expert advice
Wildlife Recovery	Shore-based on foot Shore based by ATV Boat	Live / Dead specimens
Shoreline Staging Area	Shore-based – appropriate sites with access	Collection and stabilisation before transport to THC
Temporary Holding Centre	Stabilisation – prior to transport to OWF	Where????
Oiled Wildlife Facility	Where???	
Transport of Wildlife	Vehicle type??	Consider on case-by case basis for different species

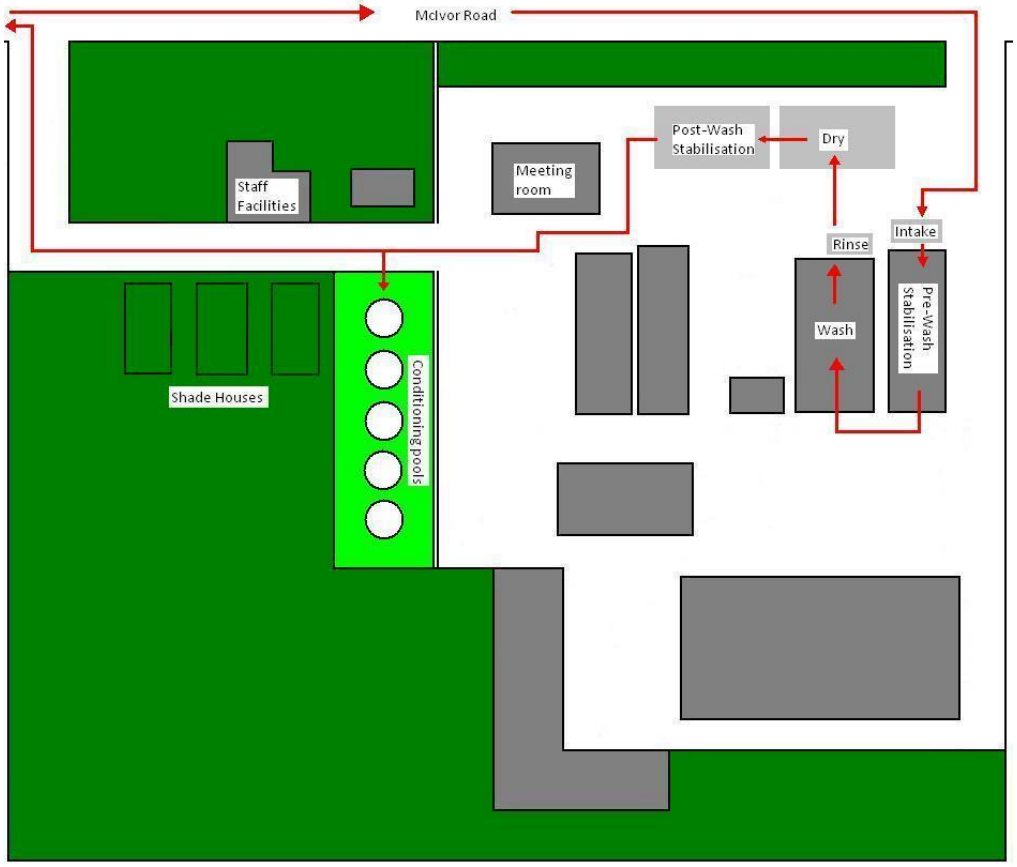
DWYERtech services ltd
Quality outcomes every time!

Oiled Wildlife Recovery Site Survey

Region:	Southland Region
Date:	15 December 2008
Site Address:	Invercargill City Council
	McIvor Road Nursery
	112 McIvor Road, Invercargill
Sewer connection:	Septic Tank only
Water main size:	100 mm town supply to holding tanks then pumped around the nursery
Power supply:	3 phase, 50 amp supply at main building
Water flow:	Very good supply with two feeds both from town supply
Hot water system:	Limited and for domestic use only
Amenities:	Some showers and toilets on site – Also a kitchen area
Who owns the site:	Invercargill City Council – ph: 03 219 9070
Who controls the site:	Robin Pagan, Parks Manager – ph: 027 437 495
Parking:	Ample parking throughout the complex
Truck access:	Good access – limited truck parking on site
Security:	Easy to secure, well fenced with gates
Difficulties:	No obvious difficulties with this site
Clean land for marquee:	Good grassed areas throughout that could be used for marquees or pools
Toilets:	5 x wc's and 2 x showers in main building
Area for managing site:	Ideal in the class room at the rear of the section
Induction process area:	There are several suitable areas available
Rest area for staff:	The class room at the rear would work well

Food suppliers:	The nursery is close to the city
Existing cleaning area:	None available
Outside lighting:	On the main building, lighting up the metal driveway
Distance to town:	5 km from city centre
Nearest airport:	Invercargill
Comments:	Fletcher Brown House is a 10m x 20m glass house that is heated and is ideal.
	The staff are helpful and the site would work well if required.

Establishment plan



Oiled Wildlife Recovery Site Survey

Region: _____

Date: _____

Site Address: _____

_____

_____

Sewer connection: _____

Water main size: _____

Power supply: _____

Water flow: _____

Hot water system: _____

Amenities: _____

Who owns the site: _____

Who controls the site: _____

Parking: _____

Truck access: _____

Security: _____

Difficulties: _____

Clean land for marquee: _____

Toilets: _____

Area for managing site: _____

Induction process area: _____

_____

Rest area for staff: _____

Food suppliers: _____

Existing cleaning area: _____

Outside lighting: _____

Distance to town: _____

Nearest airport: _____

Comments: _____

_____

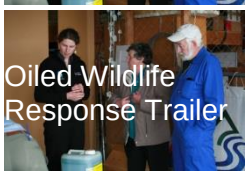
Oiled Wildlife Recovery Site Survey

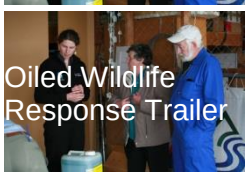
Region:	Southland Region
Date:	16 December 2008
Site Address:	Department of Conservation – Te Anau Area Workshop
	Caswell Road
	Te Anau
Sewer connection:	The buildings are connected to the Te Anau sewerage system
Water main size:	100 mm town supply
Power supply:	3 phase, 45 amp supply at main building
Water flow:	Very good supply
Hot water system:	Suitable for domestic use only
Amenities:	1 x wc, 1 x shower and small kitchen
Who owns the site:	Department of Conservation
Who controls the site:	Warren Simpson – Workshop Manager – 027 441 5963
Parking:	All of the yards are metal and there is ample parking
Truck access:	Very good and a turning area
Security:	The site is well fenced and easy to control
Difficulties:	No obvious problem found with this site
Clean land for marquee:	Large metal areas throughout the complex
Toilets:	1 x wc only
	A portable shed is available and ready to move on site

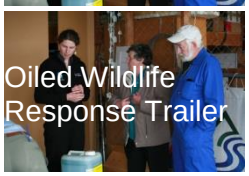
Area for managing site:	
Induction process area:	There are many garages and buildings the could be used for induction
Rest area for staff:	One of the buildings or the site is in town so rest area could be off site
Food suppliers:	There are many cafes and food outlets nearby
Existing cleaning area:	None available
Outside lighting:	Outside lighting on some of the buildings
Distance to town:	The workshop is in town
Nearest airport:	Manapouri Airport (10km)
Comments:	There are many useful building and areas on this site and it would world well in a spill.

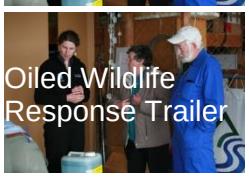


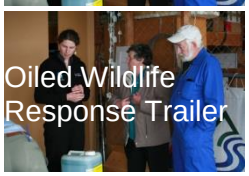


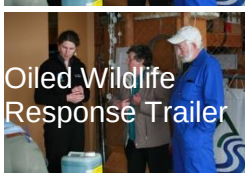


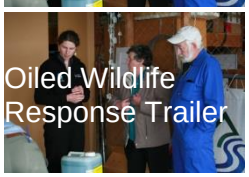












Oiled Wildlife Response Trailer

← Key ring marker (contained inside a blue tab)

One key held in Environment Southland strongroom in Finance, the other kept at Port Maintenance on the key board with other keys.

Trailer delivered to Port Maintenance 13 January 2010. Kept in Oil Spill Equipment Store at South Port.

Massey University to organise warrant of fitness etc, probably with Port Maintenance. Massey personnel (will contact us nearer the time as they get reminders re WOFs and all their WOFs (all due at about the same time).

See **Annex 1.4.2** for the trailer's contents and shopping list for items required to support the trailer.

1.7 Resources (Boats)

1.7.1

STEVE GOODING MARINE

PO BOX 7116 281 BLUFF ROAD INVERCARGILL
PHONE (03) 2142426 MOBILE 027 4367941 FAX (03) 2142426



Southland is a great place to live, we are only an hour or two from the best lakes in New Zealand. They offer the best in fishing, spectacular scenery and great water sports.

Why not make the most of what is on offer on our back doorstep and hire a Stabi-Craft boat from STEVE GOODING MARINE.

We have five late model boats available. All boats are surveyed under the 'Safe Ship Management Scheme' and come fully equipped with all safety gear and accessories required.

Stabi-craft 533/530		**Stabi-craft 430**	
Daily Rate	$150.00	Daily Rate	$ 90.00
Weekend	$250.00	Weekend	$150.00
Weekly	$700.00	Weekly	$420.00

All hire charges are inclusive of GST and include insurance cover.

Also for hire: **Water Skis and Ski Biscuit.**

So contact us now for any further enquiries or bookings for a great way to enjoy the outdoors.

Note:

1. Charge out rates may now be higher.
2. Boats come full of fuel ready to go.
3. Skippers must be appropriately qualified.
4. Ensure that the boats are not operated beyond the geographic operating limits for either the skipper or the vessel.



RIVERTON COASTGUARD (INC.) 1.7.2

ESTABLISHED 1958

President
Noel Anderson
Coxswain
Ian Coard

Secretary
Anita Wilson
Address
PO Box 52
RIVERTON

13th August 2001

10201
ENVIRONMENT SOUTHLAND
16 AUG 2001
File 202311

Dallas Bradley
Hazard Mitigation Officer
Environment Southland
North Road
INVERCARGILL

Dear Dallas

This letter is writing confirmation, of the phone conversation between Mr Ian Coard and yourself regarding the use of our Rescue Vessel for transporting your staff to Marine Oil Spills location.

Mr Coard has agreed to this, but has raised the following points.

- That we can not do it at nighttime.
- We need one hours notice.
- If we can not get a crew, then we can't do it.

If you have any further queries regarding the above matter, please do not hesitate to contact Mr Coard or myself.

Yours faithfully

Anita Wilson
Secretary

MEMBER OF THE ROYAL NEW ZEALAND COASTGUARD FEDERATION (INC.)
RESCUE BASE PH 03 234 8666

NOTE: See Annex 2.8.2 for Ian Coard's contact details

1.7.3

Department of Conservation Boats

Stewart Island based

Dinghies – 3.9 m stabis with 15 or 25hp outboard (3 at Stewart Is.)	- $50/day plus fuel
"Hananui" – 13.2 m	- $400/hr incl skipper (8 pax open water, 12 pax Paterson Inlet. Based at Stewart Island.
"Southern Winds"	- approx 70 ft long based at Deep Cove, Doubtful Sound. - Sleeps 10 people plus two crew. - $2,000/day plus food, $1,000/day for a day trip.
Vehicles	- at standard govt charge out rates – currently 62 c/km
Staff	- at standard departmental charge out rates including overtime as authorised by the On-Scene Commander and including allowances and approved expenses.
Office and field equipment e.g. cell phone calls	- on a cost basis
Subcontractors to DOC	- to be set
Argo eight wheeler	- $200/day plus fuel and driver's time

Note: Costs need to be confirmed at the time of acquisition.

1.7.4

Environment Southland Boats

1. **Hoiho** - 3.9 m stabicraft with a 35 hp outboard jet unit. Total Weight = 440 kgs excluding trailer.

2. **Toroa** - 5.6 m stabicraft with a 135 hp outboard.

1.7.4(a)

Stewart Island Vessels

[an extract from the Stewart Island SAR Plan (contact person Phred Dobbins, DoC Stewart Island]

Vessels based at Stewart Island: Foveaux strait/sea going

"Aurora Australis" 64' (19 Metre) Sea going Cray and Charter Boat

- Fully equipped electronics, for night navigation
- Hiab
- Rubber Inflatable
- huge deck space
- Self Sufficient over nighting

Owner/skipper Colin HOPKINS	Ph 03 2191 126
	Cell 027 4328782
Boat	Ph 027 4806559

'FOVEAUX EXPRESS' (See Annex 1.7.6 also)

65' (20 Metre) Sea going Catamaran

- Stewart Island Ferry
- Full electronic equipment for night navigation
- Hiab
- Huge deck space

'SOUTHERN EXPRESS'

Slightly smaller version of Foveaux Express.

Stewart Island Experience:	03 2191-134 or 03 2191-487
Manager: 03 2128080 or 027 4912144	
Skipper: Jason WELLS (Bluff Office)	03 212-8080 or 027 228-6429
Skipper: Tim DAWSON	03 2191-262 (hm)
Skipper: Graham COWLEY	03 2191-505 (hm)
Phone on board Foveaux Express:	0274483351
Phone on board Southern Express:	0274481727

F.V 'MCLAUGHLAN'
60' Cray boat. Fully equipped. Fishes as far south as Snares Island.
Skipper: Stuart CAVE Ph 03 2191-367. Cell 027 4336151

'SOUTHERN ISLE' (See Annex 1.7.7 also)
Large Charter Boat. More capacity for passengers with less deck space.
Skipper: Herbie HANSEN Ph 2191-133 Cell 027 4343420

'WILDFIRE'
Large charter boat.
Skipper: Phillip SMITH Ph 03 2191-144 Cell 027 4309427

F. V 'BAJONA'
Large Cray boat.
Skipper: Russell SQUIRES Ph 03 2191-353 Cell 0274351396

F.V 'ARUN'
Large Cray/fishing boat.
Skipper: Gary NEAVE Ph 03 2191-385. Cell 027 2191385

HANANUI
13.2m (44') D.O.C boat. purpose built DOC boat. 8 Pax Open water 12 Pax paterson Inlet.
Skipper: Ph 03 2190-002 (wk) Boat

Local Rescues: Halfmoon Bay and Paterson Inlet

Water Taxis

- There are three commercially operated water taxis in Stewart Island. All are based in Golden Bay on Paterson Inlet side. All operators know the inlet very well and take trips to Freshwater landing (high tide).
- The taxis are all approx. 6.5+ metre (22') Stabi craft outboard powered vessels. They have fully covered hard tops and can operate in most weather conditions in the inlet and in more favourable conditions further along the coast (most as far as Christmas Village).
- Each licensed to take up to 9 passengers.

'ECO TAXI' Stabi
Skipper: Ian WILSON Ph 03 2191-394
I.D: Bright red in colour. Passengers 9

'SEAVIEW' WATER TAXI Stabi (See Annex 1.7.5 also)
Skipper: Ken GEESON Ph 03 2191-014
ID: Maroon/White Passengers 9

'KAIAN' WATER TAXI Stabi
Skipper: Peter COX Ph 03 2191-284 or 2191-013
ID: Bright Blue. Passengers 9.

Aihe Stabi
Blue and Green Stabi 759. Passengers 12
Owner Furhana AHMED Ph 03 219 1066

DOC
Deparment of Conservation has a range of small boats which can be called on at short notice to assist around Patterson Inlet:

- 5.5 metre (18') Kiwicraft Hardtop alloy pontoon boat, 115 hp outboard. (moored at Thule Bay) 5 POB
- 3 x 3.8 m Stabicraft, 25 hp o/board (4 pax). Tailored from D.O.C.

TALISKER
Large Steel Ketch fully equipped for charters all around island. Moored in Thule Bay, Patterson Inlet. Able to tow stricken vessels or as a base on the water. Peter TAIT, a very experienced skipper who can assist police, often at short notice. (Lives nearby).

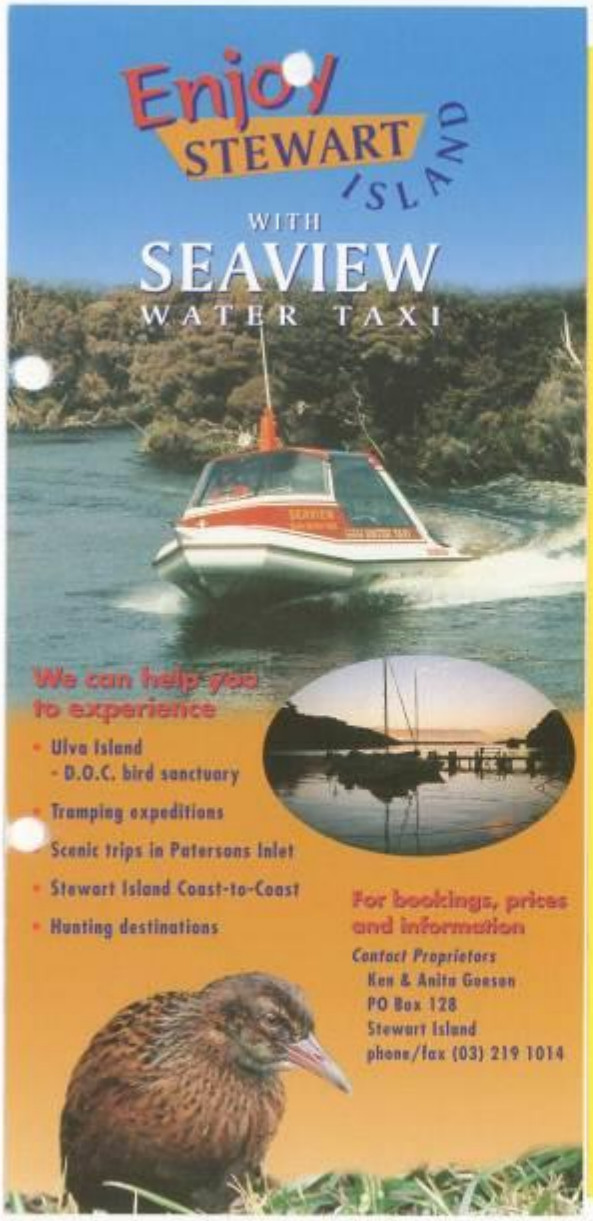
Peter also usually has a Zodiac rubber inflatable at Watercress (nr Golden/Thule Bay) for any small urgent jobs in the inlet.

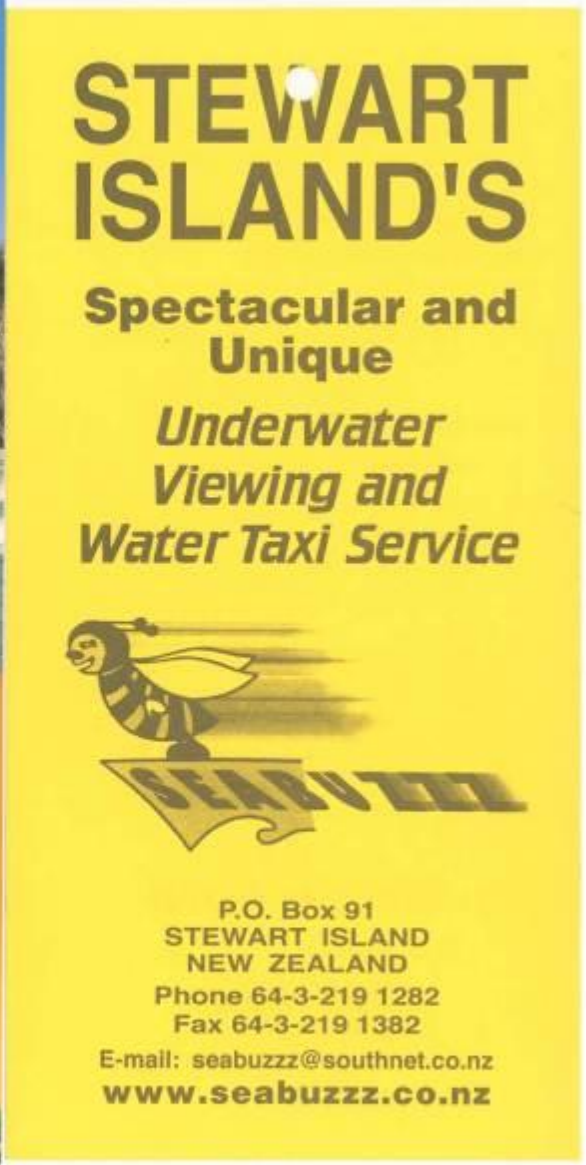
Peter TAIT Ph (03) 2191-151

SANFORDS SALMON FARM Manager Ph 03 2191181
Have boats working daily around Big Glory Bay in Patterson Inlet. 'SAN BRAZ' is a large sea going vessel with a qualified skipper and they also have a runabout at the farm.
SANFORD Boats

San Hauraki	Contact Jason Eriksson, Sanford Ltd, Bluff
Erin	027 200 5751
San Mystic	027 200 5752

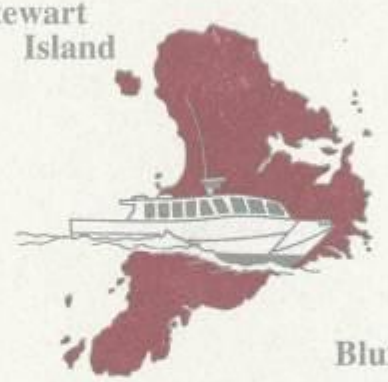
'YAHOO'
Based in Horseshoe Bay. 8 metre Catamaran, twin outboards.
Zane Smith 03 219 1064


Enjoy STEWART ISLAND
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We can help you to experience
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• Tramping expeditions
Scenic trips in Patersons Inlet
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phone/fax (03) 219 1014


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Fax 03-212 8377

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Website: www.foveauxexpress.co.nz

Southern Isle Charters

For information and bookings
Skipper: HERBIE HANSEN

P.O. BOX 23 PH/FAX 0-3-219 1133, HALFMOON BAY
STEWART ISLAND, NEW ZEALAND





CHARTERS DEPART FROM BLUFF OR STEWART ISLAND

- **FISHING**
  Full and Half Day/Rods, bait supplied.
- **DIVING**
  in crystal clear waters.
- **SCENIC CRUISES**
  Visit Ulva Island, salmon farms, bird and seal colonies and other points of interest.
- **CHARTER WORK**
  Full and Half Day.
- **HUNTING**
  Deer Stalkers especially catered for. Dinghies for hire.
- **FAST COMFORTABLE VESSEL**


KIRI WAIPAI CHARTERS
We cater for:
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- Kayak Trips & Hire
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- Fishing Trips
- All Dive Gear Hire
- Dive Trips for individuals from $50
- Overnight Trips
- Destinations: Stewart/Ruapuke Islands
- Diving Trips
Contact us for more details:
Southern Aqua Adventures
100 Gore St Bluff
Ph: 03 212 7757 Fax 03 212 7737
E-mail: Southern.aqua@xtra.co.nz
Adventure Dive
129 Dee St Invercargill
Ph/Fax 03 218 4774



New owners – Descend Scubadive

0800 337 2363

1.7.10

Southland Powerboat Club Rescue Boat

The Powerboat Club rescuecraft and crew will be available for oil spill response in the estuary if needed. It is also available for CD and SAR purposes.

The craft is a 6 m Stabicraft with a 140hp motor. It is trailerable.

Contact:

Brian Railton	Ph 03 206 4454
Commodore	Contact Citizens Advice Bureau for contact details
Southland Powerboat Club	Ph 03 213 0412 (not normally manned)

1.7.11

Deep Cove Hostel Boats

One 4.2 m Kiwicraft (15 hp)
One 4.2 m Stabicraft (2 x 8 hp)
One 3.0 m Kiwicraft (8 hp)

For an oil spill response, the hostel would endeavour to make the above boats available.

Contact: Deep Cove Hostel Trust (Paul Gay or manager)
(see **Annex 2.8.2** for contact details)

They have one other vessel that is larger than those listed above. Harbourmaster is familiar with the vessels.

Deep Cove Hostel Boats.doc

1.7.12

Port Maintenance – Bluff

John Roderique – Owner/Manager
Website: www.energyandmarineservices.com

Resources

Manpower - John Roderique, Hayden Roderique, Michael Roderique, Daniel Roderique, Lindsay Woodrow, Zak Campbell, Bernie White, Johnathan Dantith and Jung Yun Kim are all trained as Regional Response Team members.

Up to 15 untrained men who can assist the above.

Trucks - 4 Hiab Trucks
[the largest Hiab has a 22 metre reach
at 1.5 tonnes (8 tonne in close)]

30 foot curtain sider truck
(six wheeler with a 1.5 tonne tail lift capability)

Forklift - 5 tonne forklift

Boats - 32' Landing Barge
15' dinghy (25 HP) x 2
52' Motor Sailor "Patricia" ex Goughs
23' Shark Cat (Twin 140 hp Out Boards)

Contact Details

Address: Island Harbour, P.O. Box 46, Bluff 9842

Telephone: 03 212 7674
Cellphone 027 240 7820
Fax 03 212 7675
Email portmaintenance@xtra.co.nz
A/hrs phone 03 212 7076

Comments

Port Maintenance also maintains the oil spill equipment under contract to Maritme NZ.

(T:Policy_Planning\DallasB\Tier 2 Plan 2007\Port Maintenance Bluff July 2009.doc)

1.7.13

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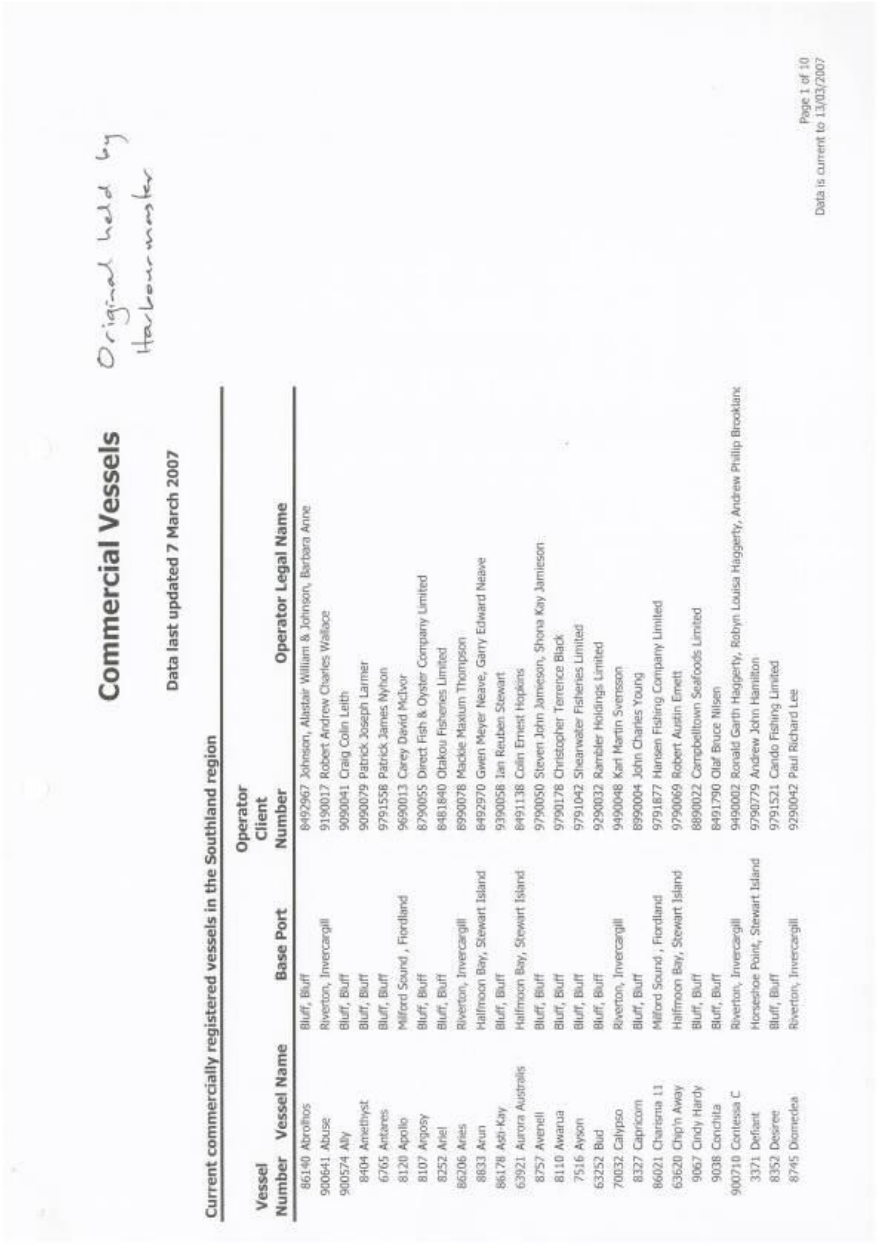
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This database is sourced from MFish and is not publicly available. Other sources of boat owner and boat size information include:

- "Mainstay", a Maritime NZ database;
- the Food Safety Authority register of NZ Fishing Vessels supplying the European Union Listed Processing premises www.foodsafety.govt.nz/registers-lists/eu-registered-vessels/index.htm?set
- www.shipspotting.com;
- AIS.



Original held by Harbourmaster

Commercial Vessels

Data last updated 7 March 2007

Current commercially registered vessels in the Southland region

Vessel Number	Vessel Name	Base Port	Operator Client Number	Operator Legal Name
86140	Abrolhos	Bluff, Bluff	8492967	Johnson, Alastair William & Johnson, Barbara Anne
900641	Abuse	Riverton, Invercargill	9190017	Robert Andrew Charles Wallace
900574	Ally	Bluff, Bluff	9090041	Craig Colin Leith
8404	Amethyst	Bluff, Bluff	9090079	Patrick Joseph Larmer
6765	Antares	Bluff, Bluff	9791598	Patrick James Nyhon
8120	Apollo	Milford Sound , Fiordland	9690013	Carey David McIvor
8107	Argosy	Bluff, Bluff	8790055	Direct Fish & Oyster Company Limited
8252	Ariel	Bluff, Bluff	8481840	Otakou Fisheries Limited
86206	Aries	Riverton, Invercargill	8990078	Mackie Maxium Thompson
8833	Arun	Halfmoon Bay, Stewart Island	8492970	Gwen Meyer Neave, Gainy Edward Neave
86178	Ash Kay	Bluff, Bluff	9390058	Ian Reuben Stewart
63921	Aurora Australis	Halfmoon Bay, Stewart Island	8491138	Colin Ernest Hopkins
8757	Avenell	Bluff, Bluff	9790050	Steven John Jamieson, Shona Kay Jamieson
8110	Awarua	Bluff, Bluff	9790178	Christopher Terrence Black
7516	Ayson	Bluff, Bluff	9791042	Shearwater Fisheries Limited
63252	Bud	Bluff, Bluff	9290032	Rambler Holdings Limited
70032	Calypso	Riverton, Invercargill	9490048	Karl Martin Svensson
8327	Capricorn	Bluff, Bluff	8990004	John Charles Young
86021	Charisma 11	Milford Sound , Fiordland	9791877	Hansen Fishing Company Limited
63620	Chip'n Away	Halfmoon Bay, Stewart Island	9790069	Robert Austin Emett
9067	Cindy Hardy	Bluff, Bluff	8890022	Campbelltown Seafoods Limited
9038	Conchita	Bluff, Bluff	8491790	Olaf Bruce Nilsen
900710	Contessa C	Riverton, Invercargill	9490002	Ronald Garth Haggerty, Robyn Louisa Haggerty, Andrew Phillip Brooklane
3371	Defiant	Horseshoe Point, Stewart Island	9790779	Andrew John Hamilton
8352	Desiree	Bluff, Bluff	9791521	Caridio Fishing Limited
8745	Diomedea	Riverton, Invercargill	9290042	Paul Richard Lee

Page 1 of 10
Data is current to 13/03/2007

Vessel Number	Vessel Name	Base Port	Operator Client Number	Operator Legal Name
86186	E.T.	Bluff, Bluff	9791521	Cando Fishing Limited
8100	Echo	Bluff, Bluff	8492485	Urwin & Company Limited
86148	Eclipse	Milford Sound , Fiordland	9090028	Phillip Wayne O'Sullivan, Shirley Marie O'Sullivan
8163	Elaine	Riverton, Invercargill	9791181	Steven John Pratt, Elizabeth Anne Pratt
7443	Electra	Bluff, Bluff	8990020	Patuki Fisheries Limited
8228	Elioenai	Bluff, Bluff	8490729	John Walter Fewster
8149	Enterprise	Riverton, Invercargill	9791327	Schofield Fishing Company Limited
86174	Equinox	Oban, Stewart Island	9791592	Kevin John Scurr
8917	Exenda	Stewart Island, Stewart Island	9791140	Trevor Barry Johnson
9072	Exporta	Bluff, Bluff	9090076	Ernest Neville Excell
63624	Far-Coff	Riverton, Invercargill	9690011	Sakana Holdings Limited
86019	Flyer	Halfmoon Bay, Stewart Island	9090058	Ian Bruce Wilson
63883	Galeos	Bluff, Bluff	9791087	Galeos Fishing Company Limited
6097	Golden Bay	Halfmoon Bay, Stewart Island	9690009	Zermatt Investments Limited
8203	Golden Harvest	Bluff, Bluff	9080029	Steve Little
8200	Golden Lea	Bluff, Bluff	9080002	Pacifica Seafoods (Dunedin) Limited
9074	Golden Quest	Bluff, Bluff	9080002	Pacifica Seafoods (Dunedin) Limited
86176	Guardian	Waikawa, Waikawa	9760160	Coulson Holdings Limited
900333	Guardian	Halfmoon Bay, Stewart Island	9760160	Coulson Holdings Limited
63490	Hellfire	Riverton, Invercargill	9190017	Robert Andrew Charles Wallace
8376	Hilda J	Halfmoon Bay, Stewart Island	8790046	Anthony Dominic O'Rourke
8401	Hustler	Riverton, Invercargill	8492314	Lance Kevin Strong
8897	Jasmine	Bluff, Bluff	9790414	Jasmine Fishing Company Limited
63347	Jewel	Riverton, Invercargill	9690011	Sakana Holdings Limited
900571	Jo 11	Bluff, Bluff	9791534	Simeon Diving Services Limited
8307	Joan	Bluff, Bluff	9791397	Quinn Fowler
5841	Joy Maree	Bluff, Bluff	9790883	Jenkins Trust Enterprises Limited
7600	June I	Bluff, Bluff	8680053	Paul Ernest Jenkins
63455	Kapala	Stewart Island, Stewart Island	8490399	Helen Mildred Cave, Harold Gordon Cave
86235	Kar-Reece	Bluff, Bluff	8492957	Southerly Fishing Co Limited
86219	K-CEE	Riverton, Invercargill	9390046	David Alfred Excell
8146	Kelly-G	Bluff, Bluff	9090068	Colin Alfred Johnson, Karen Ann Johnson
86222	Kendor 11	Riverton, Invercargill	9790692	Thomas Jay Weke-Tuhimata
8863	Kiri Lee	Bluff, Bluff	9790074	Tane Ronald Henry Fisher, Maree Elizabeth Fisher

Data is current to 13/03/2007

Vessel Number	Vessel Name	Base Port	Operator Client Number	Operator Legal Name
66153	Kuini Moana	Bluff, Bluff	8492960	Michael David Shand, Kaye Marie Shand
8104	Lady Sarah	Bluff, Bluff	8990001	Crosbie Brothers Limited
8860	Larson	Bluff, Bluff	9090069	Bruce Michael Beaton, Rowena Moana Beaton
7331	Leander	Bluff, Bluff	9090086	Ronald William Paulin
86237	Legacy	Bluff, Bluff	8492485	Urwin & Company Limited
86137	Light	Riverton, Invercargill	9790079	N & H White Limited
8188	Loyal	Bluff, Bluff	8492620	Robert Joseph White
8326	Lucy Star	Bluff, Bluff	8491719	Mountfort Fishing Company Limited
63743	Lynx	Invercargill, Invercargill	8490376	Ross Anthony Campbell
900768	Mary	Waikawa, Waikawa	9560070	Ngakauroa Fishing Limited
9096	Matac	Riverton, Invercargill	8990078	Mackie Maxium Thompson
86227	Matai	Bluff, Bluff	9390077	Keith John Hildebrand
9031	McLachlan	Stewart Island, Stewart Island	8490399	Helen Mildred Cave, Harold Gordon Cave
64021	Meerschaun	Bluff, Bluff	9790724	Lee Anthony Barris
63468	Might & Power	Riverton, Invercargill	9090084	Sabin John Kirkland, David James Gibson
8137	Miss Stewart Island	Bluff, Bluff	9790993	Stanley Ronald Geary, Arta Geary
9320	Moonwalker	Riverton, Invercargill	9791124	M & T Fishing Limited
8748	Neroli	Stewart Island, Stewart Island	9090004	John Colin Barry
900684	Ngakauroa	Waikawa, Waikawa	9560070	Ngakauroa Fishing Limited
8201	Ngaroimata	Bluff, Bluff	9790042	Awarua Tio Development Limited
8790	Nimbus	Bluff, Bluff	8492485	Urwin & Company Limited
8876	Oraki	Riverton, Invercargill	9290076	David Raymond Haywood, Albert Raymond Haywood
8826	Othello	Bluff, Bluff	9290032	Rambler Holdings Limited
63585	Overdraft 1	Halfmoon Bay, Stewart Island	9090058	Ian Bruce Wilson
9373	Owenga III	Bluff, Bluff	8492447	Colin Wayne Topi
44271	Owenga VII	Bluff, Bluff	9190028	James Ashwell Foggo
63487	Ploppy	Stewart Island, Stewart Island	9790102	Rakiura Fishing Co Limited
86211	Pluto-Too	Riverton, Invercargill	9690003	Gavin Palmer Hamilton
9002	Polaris	Bluff, Bluff	8492485	Urwin & Company Limited
900479	Quick Flight	Bluff, Bluff	9290023	Gallagher Fishing Company Limited
86128	Raewyn	Bluff, Bluff	9791008	Lancelot Fishing Company Limited
8042	Reggae	Bluff, Bluff	8570027	Paul Harold Young
~~8145~~	~~Reliance~~	~~Bluff, Bluff~~	~~9290004~~	~~David Trevor Williams, Debbie Waiheaka Williams~~ Sunk
8139	Rigel	Bluff, Bluff	9090041	Craig Colin Leith

Vessel Number	Vessel Name	Base Port	Operator Client Number	Operator Legal Name
8229	Rita	Bluff, Bluff	8890015	Marjason Oysters Limited
63780	San Nicholas	Bluff, Bluff	9791521	Cando Fishing Limited
8246	Santa Rosa	Bluff, Bluff	9791871	Young Fisher (2006) Limited
86160	Saracen	Milford Sound , Fiordland	8493404	Desmond Patrick King-turner, Julie Olive King-turner
8372	Sea Air	Bluff, Bluff	8490734	Carroll James Fife
8324	Sea Emerald	Bluff, Bluff	8492620	Robert Joseph White
7552	Sea Shag	Bluff, Bluff	9790003	Desmond George Arnold
8365	Shaft II	Riverton, Invercargill	8491609	Norma Rosemarie Mckay, Morris John Mckay
8763	Shangri-La	Bluff, Bluff	9791115	G.T & S.M Wardrop Limited
86156	Sharcaree	Bluff, Bluff	9790093	Roy Sutherland, Charmaine Islay Sutherland
8295	Silver Fern	Bluff, Bluff	9790025	Owen Beaton, Marcia Beaton
9269	Solitaire	Bluff, Bluff	8990020	Patuki Fisheries Limited
8106	Southern Enterprise	Bluff, Bluff	9790018	Jane Marjorie Calder, Jeffrey Bernard Walker
8068	Southern Extreme	Bluff, Bluff	9290007	The Reliance Fishing Company Limited
900590	Southern Legend	Milford Sound , Fiordland	9790159	D P Nylon Holdings Limited
6273	Southern Star	Bluff, Bluff	8491622	Noel Edward McLellan
8392	Sovereign	Milford Sound , Fiordland	8460980	William Hansen
8230	St Ronald	Bluff, Bluff	8492485	Urwin & Company Limited
63856	Sting	Riverton, Invercargill	9690011	Sakana Holdings Limited
86052	Stormalong	Stewart Island, Stewart Island	8690009	Stormalong John Stanley
86020	Strathallan	Waikawa, Waikawa	8492313	Walter Allan Stronach
7781	Stratus	Bluff, Bluff	8490121	Philip John Ballantyne
8267	Surpris	Riverton, Invercargill	9090063	Cyril Edward Lawless
8196	Te Moana	Bluff, Bluff	8491212	John Francis Jamieson
62861	Te Wai	Milford Sound , Fiordland	9160069	Alamo Fishing Company Limited
8119	Te-Anau	Waikawa, Waikawa	8492313	Walter Allan Stronach
86139	Tequila	Halfmoon Bay, Stewart Island	9690001	Eriksson Quota Holdings Limited
900563	The Codfather	Riverton, Invercargill	9090084	Sabin John Kirkland, David James Gibson
7445	Thetis	Bluff, Bluff	9790033	Tristan Jared Topi
8357	Titan	Halfmoon Bay, Stewart Island	9090039	Michael Robert Squires
86165	Toad	Bluff, Bluff	9290007	The Reliance Fishing Company Limited
8263	Toiler	Bluff, Bluff	9490028	Jones Group Limited
8264	Torea	Bluff, Bluff	8890022	Campbelltown Seafoods Limited
8771	Trident	Riverton, Invercargill	8492965	Kevin White, Jacqualene White

Vessel Number	Vessel Name	Base Port	Operator Client Number	Operator Legal Name
63900	Tuna	Queenstown, Fiordland	8490013	Asovale Aggerholm
900513	Ugly Duck	Invercargill, Invercargill	8491532	David Mason
~~8142~~	~~Victor Hugo~~	~~Bluff, Bluff~~	~~9790095~~	~~Kyle Fishing Limited~~ sunk
63804	Viper	Bluff, Bluff	8790036	Russell Malcolm Keen
63350	Wasp	Bluff, Bluff	9390077	Keith John Hildebrand
900655	X.T.C.	Riverton, Invercargill	9791201	Fat Flats Limited
63383	XS	Bluff, Bluff	8493468	Hellfire Enterprises Limited
900532	Yahoo	Stewart Island, Stewart Island	9790102	Rakiura Fishing Co Limited

P O Box 297, Wellington, New Zealand

Phone: 09 430 1955 Fax: (04) 460 9570

requests@fishserve.co.nz

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P O Box 86, , , Stewart Island, 9530, New Zealand
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210 Barrow Street, , , Bluff, 9503, New Zealand
1 Aramoana Road, Careys Bay, Port Chalmers, Dunedin, 9001, New Zealand
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coast

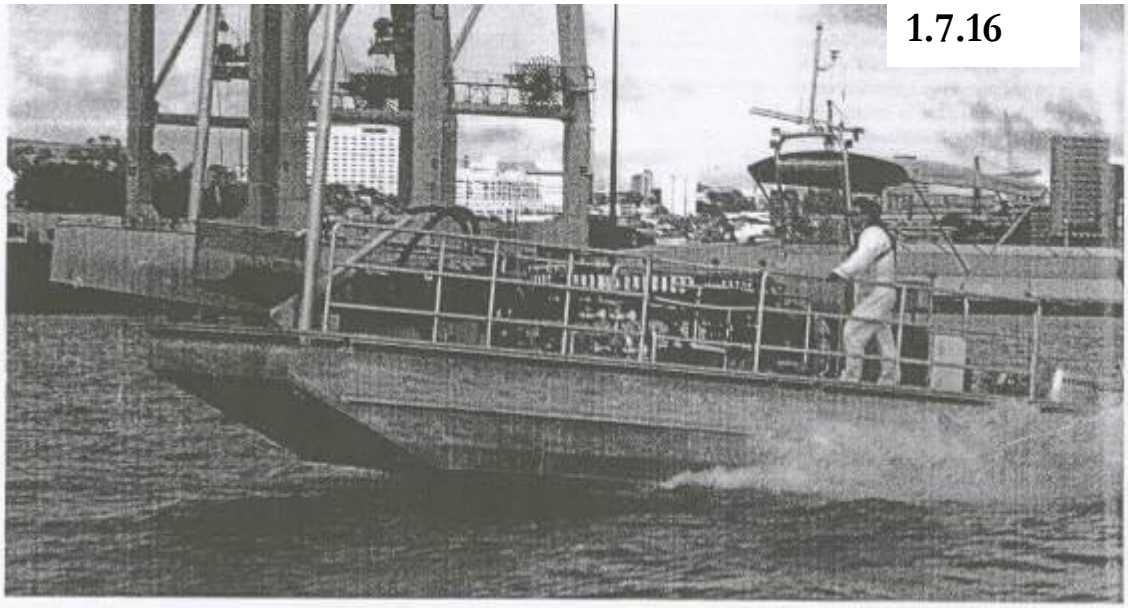
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Whiteacres, 260 Findlay Road, , Invercargill, 9051, New Zealand
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59 Palmer Street, , , Bluff, 9503, New Zealand
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P O Box 70, , , Bluff, 9503, New Zealand
P O Box 254, , , Invercargill, 9515, New Zealand

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59 Palmer Street, , , Bluff, 9503, New Zealand
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P O Box 254, , , Invercargill, 9515, New Zealand



BY MARK BARRATT-BOYES

The new mobile oil skimmer barge *Taranui* is the first of three vessels to be deployed around the New Zealand coast to collect oil or spread dispersant during a spill. She will be leased to the New Zealand Refining Company on a five-plus-five year agreement, and will be based at Marsden Point, near the Northland city of Whangarei, as part of their oil spill response plan.

The skimmers have primarily been designed for tier three response - national incidents where the MSA is brought in to handle the incident in conjunction with the regional and local council. This does not preclude their use in tier two incidents. That will be governed by the cost of the cleanup, including the logistics of moving a barge to the cleanup site, and providing trained personnel to operate the barges.

Taranui is the result of 18 months of planning, design and construction by the Maritime Safety Authority following the *Jody F Millennium* spill in Gisborne in 2002, which highlighted the need for such a vessel. Later that year, during the *Tai Ping* incident in Bluff, the authority borrowed one from its Australian counterparts. "Simply put, *Taranui* will allow the MSA to go to oil spills, rather than wait for the spills to come to us," says the MSA.

At first glance, *Taranui* looks as though she is strictly a displacement vessel, but her two extra-long shaft Honda four-stroke 90hp outboards aft give the game away. The barge can reach a top speed of about 26 knots in light ship mode, 18 knots cruising, and seven knots when fully laden with 4.5 tonnes of oil in her tanks. *Taranui* will stay within harbour limits when on her own, but she will be able to go further offshore, say 5km, if an assisting vessel is close by. She weighs 2.7 tonnes with outboards but no deck equipment, and three tonnes total, and is usually manned by three crew, a ticketed skipper and two hands, one on the pumps and one at the bow to direct the skimmer.

"The policy is to get out there quickly, and come back slowly," says her skipper, Neil Roweth of the Maritime Safety Authority. Her five 150mm deep runners provide useful grip in turns, and

spray is thrown well clear. She is surprisingly manoeuvrable, as the two outboards provide good separation.

The barge is 8.2m long by 2.4m wide, right on the upper limit for her customised trailer built by GT Trailers in Pakuranga, Auckland to tow her on the open road. The skimmer itself, A JBF DIP400, which stands for dynamic inclined plane, comprises two long arms like crab's pincers and a special conveyor belt. The skimmer is stowed neatly on deck, until required, when it is manually swung down over the bow, where the two inflatable tubes, one each side, ensure the arms are suspended just below the surface. As *Taranui* moves slowly forward, a special conveyor separates the oil and deposits it in a vertical sump. Because oil is lighter than water, it rises to the top, where it is pumped off into one of three longitudinal oil compartments, each of which ▶

"Unleashed"



Contact details are:

O'Sullivan Ltd
Phillip O'Sullivan
25 Moana Crescent
Te Anau

phone 03 249 7889
cellphone 027 249 7998

email: phil.shirley@xtra.co.nz

Meridian Boat, West Arm, Lake Manapouri

Land & Water Transport:
Meridian has immediate and priority access to;

Water:

Personnel Craft 'MV Mararoa' Surveyed to 48 pax + 750 Kg's of deck freight operating on Lake Manapouri

Heavy Freight Barge: Tug Boat 'Hustler' + Barge capable of carrying 250 Tonne on Lake Manapouri

'Fizz' Boat 'Lil Slick' 5.3 Mtr Aluminium, cuddy cabin with 115 4-Stroke Yamaha O/Bd (based at West Arm, Lake Manapouri and can be transported to and used on Doubtful Sound.

Refer to Annexes 1.4.7 and 6.9.

1.7.19

Wai Marino



This boat belongs to the Waihopai Runanga. To use it, contact Michael Skerrett (See 2.8.2 for contact details).

The boat is a 7.0 metre stabicraft powered by a 200hp motor.

1.7.20

Awesome (Awesome Charters Ltd)

18.4 metres long, offshore survey for 12 pax plus crew, toilet & shower, 12 berths.
Range of 1000 miles at 17 knots or 2500 miles at 10 knots.
Two gensets, one 10 kva and one 37 kva.
Deck Cargo 10 tonne. On board Hi Ab can lift 2 tonne close in.



To hire, contact Jack Topi on 027 529 3766 (0275 AWESOME) or Jack's personal mobile number is 027 227 6627 or email awesomecharters@xtra.co.nz.

While Jack is out, his partner, Kelly Johnson, looks after things at the first phone number and email address and is in radio contact with Jack.

Southern Lakes Helicopters

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ABOUT/CONTACT US



Welcome to Southern Lakes Helicopters, Te Anau, New Zealand

We invite you to take a scenic helicopter flight with us and experience the Fiordland that we know...a wilderness of spectacular scenery that is isolated and untouched.

Click here to read what's new at Southern Lakes Helicopters!



Southern Lakes Helicopters is your gateway to Fiordland National Park, Doubtful Sound, Dusky Sound and Milford Sound. Fly over Fiordland spectacular scenery with our experienced pilots for a trip that you will never forget. We offer scenic Fiordland helicopter flights, heli-skiing, scenic charter flights.

We go out of our way to make every experience for our clients one that leaves a lasting impression of professionalism and friendliness. Safety is of the highest priority. Our privately owned helicopter company specialises in personal service. Te Anau owned and operated. Flying in Fiordland is our passion and speciality.

Southern Lakes Helicopters operate a modern fleet of aircraft, providing professional and efficient service in Fiordland and lower South Island. We operate a modern fleet of aircraft, including our two B3 Squirrels for heavy lift operations.

We undertake Fiordland helicopter flight charter options, commercial charter flights, filming/recce support, photography, winch and rescue services. We provide helicopter access to hunting locations throughout Fiordland and the South Coast. We have a wealth of knowledge of the Fiordland area and can offer advice and information relating to your preferred hunting sites.

tripadvisor

Southern Lakes Helicopters in Fiordland has 11 reviews

Southern Lakes Helicopters

TripAdvisor Traveler Rating:

Based on 11 traveler reviews

TripAdvisor Popularity Index:

1 of 4 tours in Fiordland

Most Recent Traveler Reviews:

Jun 26, 2011: "Couldn't have been better!"
Mar 11, 2011: "Once in a lifetime experience"
Feb 28, 2011: "An outstanding experience"

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THERE'S MOUNTAINS OF WATER IN FIORDLAND
1.8.2
See it all with us.
ZK-EEI
ZK-EEI











Waterwings Airways

Scenic Flights

Your visit to Te Anau is incomplete without the unique experience of a scenic flight by floatplane.
Waterwings Airways will fly you to some of New Zealand's most remote and inaccessible areas. Scenic flight options vary from a short 10 minute overview of Te Anau and Manapouri to the Fiordland Fantastic which includes Doubtful Sound and Historic Dusky Sound.

• MILFORD SOUND OVERHEAD FLIGHT

Return scenic flight from Te Anau over Milford. Spectacular views of Milford Sound, Tutoko Glaciers, Sutherland Falls and the Milford Track.
***Duration** 1 hour*

• DOUBTFUL SOUND OVERHEAD FLIGHT

See majestic Doubtful Sound from the air – aerial views of this fiord's stunning waterfalls are unmatched and will leave you in awe of this dramatic region.
***Duration** 40 minutes approximately*

• FIORDLAND FANTASTIC

Dusky Sound and Doubtful Sound combined. On this exhilarating flight you will see over 350 islands scattered through the clear blue seas of the Fiordland Coast.
***Duration** 1 hour 15 minutes approximately*

• KEPLER TRACK SCENIC FLIGHT

Follow the Kepler Track from Te Anau, over Mt Luxmore to Lake Manapouri and back.
***Duration** 20 minutes approximately*

• TE ANAU LOCAL SCENIC FLIGHT

Experience the Te Anau basin from the air with magnificent 360° views. This flight includes panoramic scenes of Lake Manapouri and The Hidden Lakes.
***Duration** 10 minutes approximately*

RESERVATIONS AND INFORMATION
Waterwings Airways
P.O. Box 222, Te Anau, New Zealand
Telephone 0-3-249 7405, Facsimile 0-3-249 7939

Copies 171751

Waterwings Airways

Scenic Flights

(TE ANAU) LIMITED



Source: go Southland Emergency Response Plan

Southland Country Airstrips (See Map at end of table).

Site No	Location	Name	Phone	GPS Reference (Latitude / Longitude)	Lgth/Mtres	Comments
1	Blackmount	School	03 2255315	S 45/48.489 x E 167/40.479	800	10 Old Monowai Rd
2	Athol	Soper J	03 2488869	S 45/30.866 x E168/33.889	700	67 Athol/Five Rivers Hwy Air Radio 119.1mhz
3	Awarua	McKenzie P	03 2188206	S46/31.011 x E168/21.792	800	Undulating Runs east & west
4	Benmore SH 6	Land on highway		S 45/59.255 x E168/19.978	6000	Between Otapiri Rd & Kuana Rd
5	Bixter Rd	Baird A	03 2487345	S 45/34.520 x E168/27.329	400	166 Bixter Rd height 480 meters
6	Blackmount 2	Robertson	03 2255493	S 45/46.254 x E167/40.337	600	Rough 4 wheel drive access
7	Boundary Rd			S 45/51.129 x E 168/19.154	600	
8	Braxton Stn	M Beattie	03 2486125	S 45/42.032 x E168/04.867	500	102 Endowment Rd
9	Callum Rd	Heslip	03 2016215	S 45/54.914 x E168/28.329	500	Paddock beside house
10	Cascade			S 44/58 x E 168/01		Knobs Flat
11	Castledowns	C Affleck	03 2485172	S 45/47.674 x E168/16.477	400	Mossburn Rd Top of Hill
12	Castlerock Rd			S 45/46.449 x E 168/24.234	500	Near Double Rd ,easy access Runs N - S
13	Castlerock	Lex Gibb	03 2487029	S 45/42.671 x E 168/24.229	500	McKenzie Aviation 104 Irthing St 2487689
14	Centre Bush	D Kane	03 2360503	S 46/02.552 x E168/18.596	650	Sth Hillend Dipton Rd
15	Centre Hill	Broughton	03 2497633	S 45/30.132 x E168/06.908	450	1064 Mavora-Centre Hill Rd
16	Clinton	Hurst		S 46.14 x E 169/06		
17	Collis Rd			S46/31.921 x E168/55.780		
18	Cuming Rd			S 45/45.713 x E168/20.534	600	189 Cuming Rd - Road Access
19	Curio Bay	I Woodrow	03 2468768	S46/39.774 x E169/05.858		
20	Days Rd	W Day	03 2361115	S 45/59.192 x E 168/15.802	450	Sue Day-Whyles Rd 2361109
21	Dipton Flat	H.Ruddenklau	03 2485015	S 45/49.850 x E 168/22.239	650	Glencairn
21a	Dog Island	NSA	03 212 8958	S 46°35' E168° 24'		South East Air Knows all about this strip
22	Dunrobin Station	J Lang	03 2486065	S 45/47.368 x E168/08.608	1500	P Vanderbijl 03 2486090 RN 2361
23	Eastern Bush	D.Begley	03 2255807	S 45/58.898 x E 167/44.611	400	Ring first Remove sheep
24	Edmond Elk Stud	D Edmonds	03 2486472	S 45/46.490 x E168/11.540	500	Long Grass
25	Fairlight	Lora Stn		S 45/25.408 x E 168/41.720	450	
26	Fairplace Station		03 2025301	S 45/57.567 x E 168/40.098	500	Waimea Plains/9 Mile Rd
27	Feldwick	W Clarke	03 2254870	S 45/59.331 x E 167/49.692	750	

1.8.3

Source: Otago Southland Emergency Response Plan

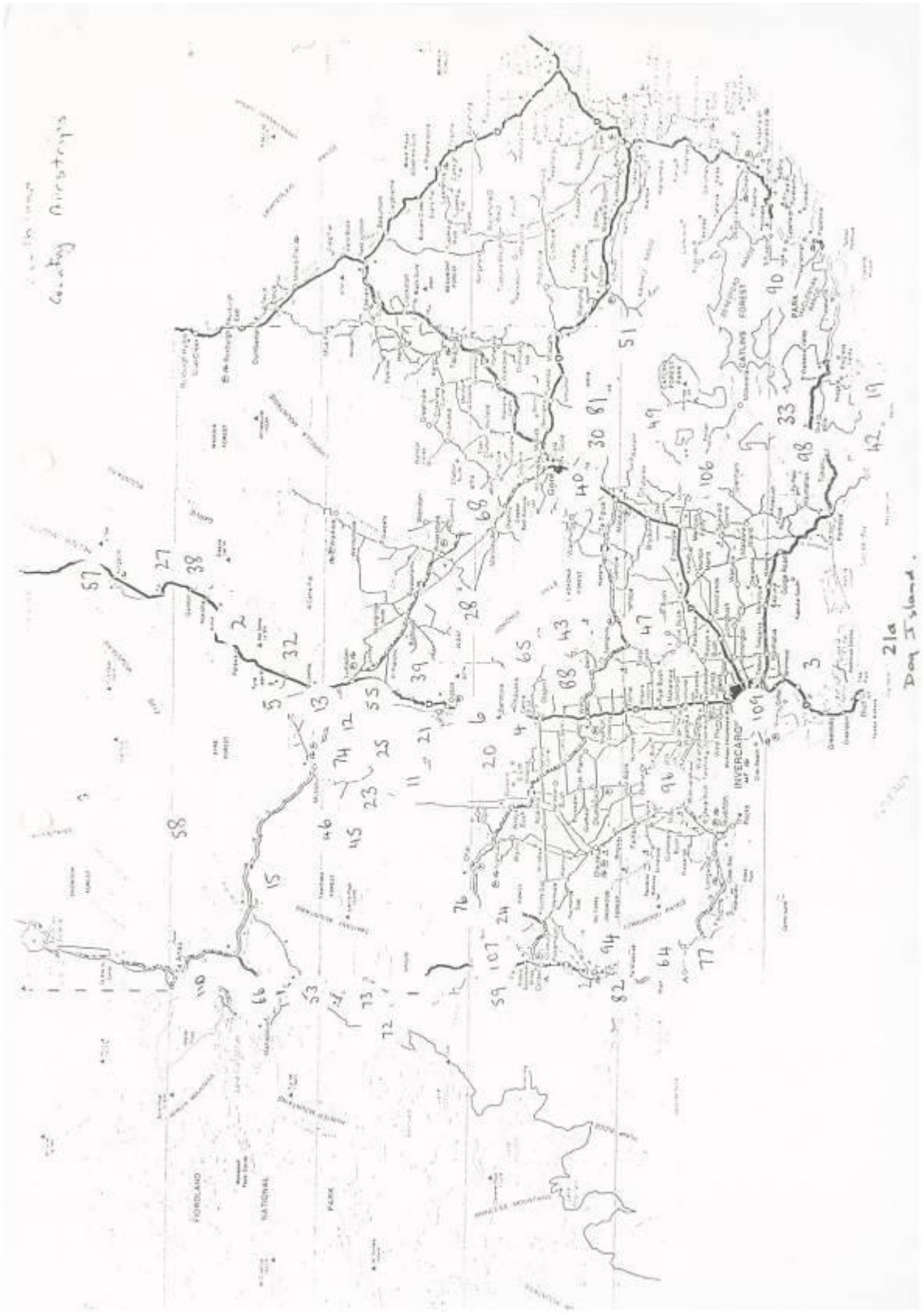
Site No	Location	Name	Phone	GPS Reference (Latitude Longitude)	Lgth/Mtres	Comments
28	Ferndale	Dickie	03 2038129	S 46/11.238 x E 168/58.413	450	Runs N- S,Up to Sth, cnr Ferndale & SH93
29	Five Rivers	Burdon	03 2487358	S 45/35.432 x E 168/25.175	450	235 Irthing Rd Five Rivers
30	Five Rivers			S 45/37.512 x E 168/27.502	800	Beside SH 6 Runs W-E Gliding Strip
31	Fortification	A Heenan	03 2469720	S 46/31.899 x E 168/55.782	450	583 Collis Rd
32	Fortification	J Fallow	03 2469585	S 46/30.530 x E168/57.681	700	1340 Fortification Rd
33	Fortification	M Buckingham	03 2469596	S 46/30.450 x E 169/00.305	700	1669 Fortification Rd
34	Fortification	A Fox	03 2469533	S 46/29.180 x E 168/57.353	600	468 Carswell Rd
35	Fortification			S 46/28.252 x E 168/55.757	550	Gibb Rd
36	Garston	Menlove	03 2488516	S 45/28.544 x E168/41.225		
37	Glenure			S 45/54.056 x E 168/29.228	450	Access of Dipton-Balfour Rd
38	Gore			S 46/10 x E 168/53		
39	Gorge Hill			S 45/33.751 x E168/01.533	400	Burwood Station - TeAnau Mossburn Rd
40	Haldane			S 46/37.942 x E 168/58.902		Mt Florance 200m from Rd
41	Hall Rd	L Middleton	03 2360942	S 46/06.071 x E 168/32.353	400	Top of Ridge
42	Hamilton Rd	P Turner	03 2486175	S 45/41.011 x E168/06.368	700	376 Hamilton Rd
43	Hamilton Rd	D Lietze	03 2486497	S 45/38.738 x E168/05.751	500	672 Hamilton Rd
44	Hedgehope			S 46/12.540 x E168/32.837	2000	Land on Hedgehope Rd near town
45	Henderson Rd			S 46/04.139 x E 168/25.386	1000	Land on Road Sealed
46	Hole& Cnr Rd			S 46/14.892 x E169/01.272	450	X Runway runs NW-SE & E-W
47	Humphries Rd			S 46/18.630 x E168/56.608	400	Humphries-Wairikiki Rd
48	Jericho Hill			S 45/43.760 x E 167/39.594	600	Remote but drive on by ambulance
49	Jewett Rd			S 46/10.652 x E168/33.443	400	Top of Hill Road Access
50	Josephville			S 45/50.155 x E168/27.247	600	Josephville -Glenure Rd
51	Kingston	Glendinning	03 2488571	S45/20.317 x E168/43.556	500	Beside SH 6
52	Lake Mavora	Cavanagh	03 2498014	S 45/23.825 x E168/04.976	1000	Easy access N end 2586 Mavora Lakes Rd
53	Lillburn Valley	R.Hampton	03 2266743	S 45/59.498 x E 167/40.058	500	Remove sheep
54	Lime Hills	D Cooney	03 2360893	S46/03.006 x E168/20.684	600	Tree west end
55	Lora River Rd	J Cockeram	03 2360938	S 46/02.867 x E 168/30.277	600	Walker 215 Lora River Rd 032360456

Source: ...ago Southland Emergency Response Plan

Site No	Location	Name	Phone	GPS Reference (Latitude Longitude)	Lgth/Mtres	Comments
56	Lora Gorge Rd	W Taylor	03 2360940	S 46/04.529 x E 168/29.837	500	296 Lora Gorge Rd
57	Lora Gorge	L Andrews	03 2360973	S 46/04.516 x E 168/27.433	400	Hokanui School Rd
58	Orapuki	Menpes	03 2345009	S 46/15.715 x E 167/43.145	500	261 Orapuki Tuatapere Rd
59	Otapiri Gorge	L Andrews	03 2360195	S 46/02.695 x E 168/28.014	500	80 Cathcart Rd Ridge Top 172m
60	Manapouri Stn	Dean	03 2495888	S 45/34.662 x E 167/50.532	800	Remove fence
61	McLeod Rd	McDonald	03 2485002	S 45/51.627 x E 168/25.869	500	Gavinwood Farm 50 McLeod Rd Caroline Vly
62	Mandeville			S 45/59.644 x 168/48.397		
63	Mandeville Rd	M Swanson	03 2369941	S 46/04.490 x E168/32.025	300	Short Strip off Hall Rd
64	Matthews Rd	R Palmer	03 2485152	S 45/56.931 x E168/25.140	700	Road Access by shed
65	Mernivale			S 46/04.939 x E 167/51.489	450	95 Gill Rd
66	Monowai	M O'Brian	03 2255148	S 45/47.220 x E 167/36.801	900	Remove sheep
67	Monowai Turnoff	Robertson	03 2255493	S45/46.947 x E 167/40.139	500	Long Paddock slopes gently up to S
68	Mossburn			S45/40.218 x E168/14.000	800	
69	Mt Hamilton	Stephens	03 2486052	S 45/35.312 x E168/04.437	500	Mt Hamilton Station 1901 Cuming Rd
70	Mt Linton Stn	A McGregor	03 2254838	S45/56.184 x E167/52.347	500	Homestead 225 4938
71	Mt Victoria Rd	A.Young	03 2345138	S 46/22.125 xE 167/45.852	400	Rural No 175 formed Access
72	Orapuki	Menpes	03 2345009	S 46/15.727 x E 167/43.145	400	Runs N- S
73	Oreti Rd	A McNally	03 2497631	S 45/26.933 x E168/07.522	400	Steep Hill to Bin Centre Hill Station
74	Otaraia	Jackson	03 2053722	S 46/12.229 x E169/04.761	600	Isla Station,Power lines N,house to sth.
75	Papatotara	Thwaites	03 2266711	S 46/10.695 x E 167/37.242	600	Paddock 15 Undulating?.
76	Peters	Peters	03 2255425	S 45/54.025 x E 167/42.934	700	Paddock beside Clifden/Blackmount Rd
77	Purakireki	R Landels				
78	Redcliff Stn	W.Speight	03 2497993	S 45/40.724 x E 167/39.995	450	Cell 025 444435
79	Rosemakie Rd			S 46/11.838 x E 169/00.321	400	Powerlines western end near Waikana Rd
80	Rowley Rd	Keast	03 2266513	S 46/11.498 x E 167/42.256	400	Slopes up to sth
81	Sinclair Rd	A Labes	03 2364199	S46/07.149 x E168/24.487	400	Rural 279 Browns
82	Tahakopa	M Stott	03 4158086	S 46/30.657 x E 169/21.402		Needs Review
83	Tapanui					

Source: ...ngo Southland Emergency Response Plan

Site No	Location	Name	Phone	GPS Reference (Latitude Longitude)	Lgth/Mtres	Comments
84	Taylor Gorge Rd	R Gill	03 2369983	S 46/05.467 x E168/30.155	850	Land on Sealed Road
84	Te Anau	P Chartes				
85	Te Tua	D Peek	03 2266770	S 46/10.448 x E 167/40.592	400	Watch for deer
86	Te Tua	R Horrell	03 2266771	S 46/09.930 x E 167/41.006	430	Runs NE- SW
87	Thornbury	A Hall	03 2246347	S 46/17.139 x E168/07.125	700	495 Thornbury- Waimatuku Rd
88	Tiromaunga Rd			S 45/51.294 x E 168/09.620	400	180 Tiromaunga Rd Avondale
89	Tokanui	Alsted		S 46/33.119 x E168/55.891	400	Uphill to Bin.173 Neill Rd
90	Waddell Rd	R Pears	03 2486135	S 45.43:165 x E 168/04.967	700	
91	Waikaia					
92	Waikawa Valley	Buckingham	03 2468499	S 46/31.214 x E 169/11.018	400	43 George Rd
93	Waikawa Valley	SC. Stratford	03 2468485	S 46/30.841 x E 169/10.43	380	221 Buckingham Rd
94	Warruslea Downs	D Shuttleworth	03 2485038	S 45/57.187 x E168/22.236	600	Long paddock by road
95	Waterloo Stn	J Minty	03 2486145	S 45/42.438 x E 168/03.749	600	475 metres rough by car
96	Wyndham			S 46/19.990 x E168/51.021	350	Cardigan Rd
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Gowlland Inlet
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19.6.14 210/01/14

Heli Harvest Ltd

18 Page Point
Howick
Auckland 1704
New Zealand

Phone: 64 9 534 4803
Fax: 64 9 534 4129
http://www.heliharvest.co.nz
info@heliharvest.co.nz

5 December 2003

Mr. Dallas Bradley
Civil Defence Emergency Management Officer
cnr North Rd & Price St
Invercargill

Dear Mr. Bradley,

Heli Harvest Ltd is New Zealand's leading provider of helicopter heavy-lifting services.

We own and operate three Mi-8MTV-1 helicopters and have 10 years experience working with these aircraft in such diverse roles as timber extraction, fire fighting, and construction.

The helicopters are based at Taupo airport in the central North Island and are able to position around New Zealand and the South Pacific under their own power.

We would like to draw your attention to our capabilities and how we could assist in the event of a civil emergency:

- Excellent payload/range envelope, allowing rapid delivery of large quantities of people and/or supplies to remote/isolated areas;
- Large cabin with utility seating for 28 passengers, or forward-facing seating for 24 passengers;
- Potential for large-scale MedEvac;
- "Bambi" monsoon bucket for fire-fighting;
- Capable of lifting and placing external loads of up to 5,000 kg with precision;
- High-volume internal cargo area, with dimensions of: 5.34 m x 2.34 m x 1.8 m) with 4,000 kg internal payload;
- Clam-shell rear-loading freight doors (with hook-on vehicle ramps).

For further information on our company and our operations, we invite you to visit our website at http://www.heliharvest.co.nz

Should you have any questions, or wish to discuss our capabilities further, please contact:

Qwilton Biel
Administration Manager
Phone: 09 534 4803
Fax: 09 534 4129
Mobile: 025 935 655
Email: qwilton@heliharvest.co.nz

Yours faithfully,
HELI HARVEST LTD

Qwilton Biel
Administration Manager

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Rakiura Helicopters
Stewart Island, NZ

Welcome to... Rakiura Helicopters Stewart Island



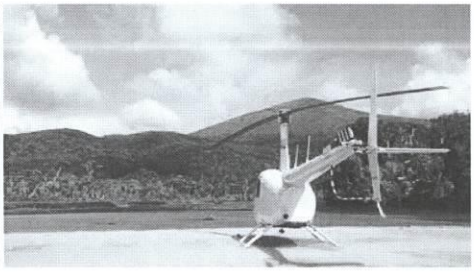
Rakiura Helicopters Stewart Island, the professional & experienced helicopter team, providing helicopters services of all types from Stewart Island adventures to Commercial work. Based on Stewart Island with an additional base in Bluff (only 20 mins drive from Invercargill) we are in a central position for aerial work all over Southland and Stewart Island.

Our friendly staff will have you on Stewart Island in just minutes with our rapid Heli-Flight service. Enjoy the 1,746 square kilometres of breath taking scenery and tranquillity that Stewart Island's remote beaches, forests and birdlife have to offer. The Natural forest of Stewart Island extends to the South some 75 km. Enjoy the many excursion options during your stay on the island such as cruises, fishing charters, kiwi-spotting, underwater experiences, bus tours, cafes, restaurants and hiking.

Rakiura Helicopters Stewart Island offers:
Scenic flights
Bluff to Stewart Island Transfers
Hunter Transport
Tramper Transport
and Commercial Charter.

We look forward to flying you around our beautiful Stewart Island.





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Rakiura Helicopters Ltd - 151 Main Road - PO Box 54 - Stewart Island, New Zealand
info@rakiurahelicopters.co.nz - Phone (office): 03 219 1155 - mobile: 027 2219217

HELICOPTER COMPANIES USED FOR SPRAYING PURPOSES by ENVIRONMENT SOUTHLAND.

~~Page 1 of 1~~

1.8.6

Dallas Bradley

From: Paul Pollard
Sent: Friday, 11 June 2010 2:12 p.m.
To: Dallas Bradley
Subject: Helicopter Companies

Dallas

As discussed there has been a major change in the helicopter companies carrying out ag work in Southland. Southwest Helicopters agricultural operations division (Peter Garden) was sold last year to Helisouth Ltd (Jeff McMillan). Helisouth is a sister company of Helicopters Otago Ltd which is owned by Graeme Gale. They have a Bell Jetranger based at Invercargill airport which is pretty handy for a quick response. Helisouth and Helicopters Otago have 8 Jetrangers set up for ag work between them which would be useful if needed. They also have a Bell Long Ranger, two BK 117's and a Robinson R44. The BK's have a heavy lift ability of up to 1350 kg.

Main contacts are:
Jeff McMillan (Balclutha) 0274 357387 Hanger 03 418 0158 - Jeff is Helisouth general manager
Hayden Cherry (Invercargill) 0274 322227 - Hayden is the local pilot
Helicopters Otago (Mosgiel base) 03 489 7322 if other two numbers couldn't be reached.

They are still using Peter Garden on an as required basis but he is living in Wanaka and wouldn't be a first response option.

I have talked to Jeff about them taking over Southwest's role as first choice in a response situation and he is quite happy to do so. He suggested that he could meet with us at some point to confirm the arrangement and discuss the various issues that would be involved such as hire rates, equipment required and contact details etc.

There is also have the option of using High Country Helicopters Ltd based out of Waikaia. We used them for the riverbed work on the Mataura and Oreti rivers this year and they were fine. They aren't quite as professionally organised a company as Helisouth/ Heli Otago but they have a good chief pilot/ company CEO in Andrew Gunton and they have a Bell Jetranger and Hughes 500D available. Andrew Gunton's phone number is 021 1820583 or hanger 03 202 7783. I haven't discussed oil spill response with Andrew but I am sure he would be keen.

Polly

Note:

Companies, personnel and ES Contract arrangements vary from year to year. Speak to Paul Pollard, ES staff member regarding the most current information.

The Helicopter Line New Zealand (Fiordland)

Operates out of Lill Burn Valley Road, Lake Hauroko

Pilots:
Gaven Burgess 027 235 9631

Dale Green 027 568 8204

Website - http://www.helicopter.co.nz/fiordland.asp

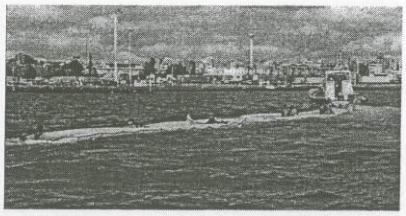
1.8.8 *Covertex Inflatable Rescue Bridge*

One of these bridges is stored in the Fiordland SAR training rooms. Contact the Te Anau Police or Southern Lakes Helicopters should it be required. (**See also Annex 1.9.2**)

covertex
technical fabric products

RESCUE BRIDGE





The Rescue Bridge is a directionally launched and tow-able platform for rescues on water, mud and ice.
The Rescue Bridge® provides an inflatable platform for evacuations, rescues or crash site access.
The built in water ballast pockets ensure stability at sea and enables Helicopter patient airlifting.

Design Criteria

- Emergency evacuation from vessels or aircraft.
- Crash site access for rescue personal and equipment.
- Able to be directionally launched.
- Provide a platform on water, mud, ice or other surfaces.
- A stable platform at sea, under tow or during air lift rescues.
- Quick and easy to deploy.
- Light and compact for transport and storage.
- Able to be used for training and operational repacked by the operator.

Features & Benefits

Features	
Polymer PVC construction and design	• PVC fabric provides good puncture, abrasion, flex and UV resistance. • The Rescue Bridge® can be stored for long periods without material degenerating. • If required the Rescue Bridge® can be easily repaired with only minor fabric preparation.
Easy to Use	• The Rescue Bridge requires no special tools or equipment simply open the carry bag aim the bridge and operate the cylinder valve.
Directional Launching	• The rescue Bridge unrolls like a party whistle, therefore can be aimed and inflated towards a stricken vessel, persons or a crash scene. • In marine situations this enables the rescue

Specifications& Accessories

Standard Fittings:

- External webbing grab lines.
- Internal webbing grab lines.
- Dual bow towing bridles with snap hooks.
- Water Ballast Pockets.
- Hosing and regulator to accept a Dive Bottle.
- 2 x manual inflation/deflation valves.
- 1 x over pressure relief valve.

Dimensions	12m Unit
Lengths	12m (39.3 ft)
Width OA	1.5m (59")
Width Internal	1.0m (39")
Chamber Diameter	250mm (10")
Packed Weight (Excluding Dive Bottle)	44kgs (97lbs)
Packaged Dimensions	1.4m x .45m dia (55" x 18" dia)
Other	
Inflation Time - CO2	25 sec
Inflation Time - Dive Bottle	45sec
Load Capacity	20 persons
Operating pressure	21 Pa (3psi)

Inflatable Chambers:

- Polyester reinforced PVC.
- Excellent flex, puncture, abrasion and UV resistance.
- Air grade properties.

Flooring:

- Polyester reinforced PVC.
- Good flex, puncture, abrasion and UV resistance.
- Tear stop fibre reinforcing.

Custom Sizes:

The rescue Bridge is available in lengths 6m (19.5ft), 9m (29.5ft) and 12m (39ft). The bridge is available in longer lengths or customised to specific customer requirements.

Inflation Systems

The Rescue Bridge is supplied standard with hosing to accept a Dive bottle. Other options available are the BA air cylinder or a CO^2 system.

	vessel to stand off and launch the bridges towards the survivors.
Deployment by Air	• The Bridge can be deployed via Helicopter by dropping the bridge and one person. • The bridge will float even when packed in its carry bag.
Water ballast pockets	Fitted down the length of the bridge the water ballast pockets fill with water upon deployment and provide high stability for Helicopter airlifting or heavy sea conditions.
Easy water access	• Unlike other rescue platforms the rescue bridge has a small diameter tube, which rotates inward as person enters, making both boarding or the pulling in of an injured person easy.
External webbing grab lines	• Provides outside grab lines for survivors to use for support should the bridge be full. • Enables the emergency services to manoeuvre the Rescue Bridge® from outside the unit.
Internal webbing grab lines	• The grab lines helps survivors both pull themselves on board and provide a means of holding on or securing in extreme conditions.
Joining of the Rescue Bridges together	• The Rescue Bridges can be connected to each other using the snap hook and the bridle fitted to each end of the bridge. • Joining on mud or ice provides a continuous bridging for access to crash sites or individuals. • Joining at sea enables a number of bridges to be connected and towed to safety by one vessel.
Towing at sea	• The Rescue Bridge® has been specially designed so it can be easily towed by any craft from Jet ski's to commercial vessels. • The towing provides the ability to reposition the bridge or importantly remove survivors from the scene to the shore or sheltered waters.
Airlifting Patient Rescues	• Due to the effectiveness of the ballast pockets a patient can be air lifted from the bridge without the prop wash effecting stability.
Light weight & Compact size	• When packed the Rescue Bridge is compact and lightweight for ease of handling or transport by air or small craft.
Pressure relief valve	• The relief valve safely vents excess air pressure during inflation or from changes in atmospheric conditions.

Low Cost Training and Operator Experience

For Safety personnel the ability to train with the product and gain hands-on experience is extremely important. The Rescue Bridge's advantage is that it can be deployed by rescue staff for training as often as required and repacked ready for operation without the need for specialist servicing.

After each use the RB is simply inflated, inspected then deflated and packed with a full cylinder.

1.8.9

Yellow Pages

- Helicopter Companies are forever changing so it is worth checking the Yellow Pages

1.8.10

ABOUT US
OUR PHILOSOPHY
STEWART ISLAND
History
Oban
Ulva Island
North-West Circuit
West Coast
Mason Bay
Hunting
Image Gallery
THE FLIGHT
Why fly to Stewart Island
Scenic flights
Flight Schedule
Air Fares
Special Deals
Day Trips
Coast to Coast
Southern Scenic Route
Port William Excursion
Frequently Asked Questions

Contact Us

Stewart Island Flights
PO Box 860
Invercargill
New Zealand

Phone: 64 3 218 9129

Fax: 64 3 214 4681

Email: **sif@xtra.co.nz**

Internet: **www.stewartislandflights.com**

For booking enquiries please **click here**



After Hours – Phone should divert to the Duty Officer's phone.

In case it doesn't their cell phone numbers are as follows:
Raymond Hector, Chief Pilot: 027 543 1540
Bill Moffat, Ops Mgr/pilot: 027 475 9355

Alternatively, try South East Air, a subsidiary company – 03 2145522.

1.9 Resources (Specialist)

From: Lindsay Divett [mailto:lindsay.divett@xtra.co.nz]
Sent: Wednesday, 3 August 2011 7:43 p.m.
To: 'dallas.bradley@govt.nz'
Subject: contact details

Hi Dallas,

just to confirm we are still operating out of Dunedin, my contact details have changed these are set out below. The services we provide are,

1, treatment and disposal of contaminated soil. We specialize in material which has be contaminated with hydro carbons but will look at other material as required

2. Disposal of absorbent products

3. The collection, transportation of all fuels including waste oil

4. Dangerous Goods Spec fuel tankers with the capacity of 30,000 litres. These are available in the case off emergency's [24 hours] we also have a variety of pumping equipment available as well

5. Disposal of all old underground fuel tanks

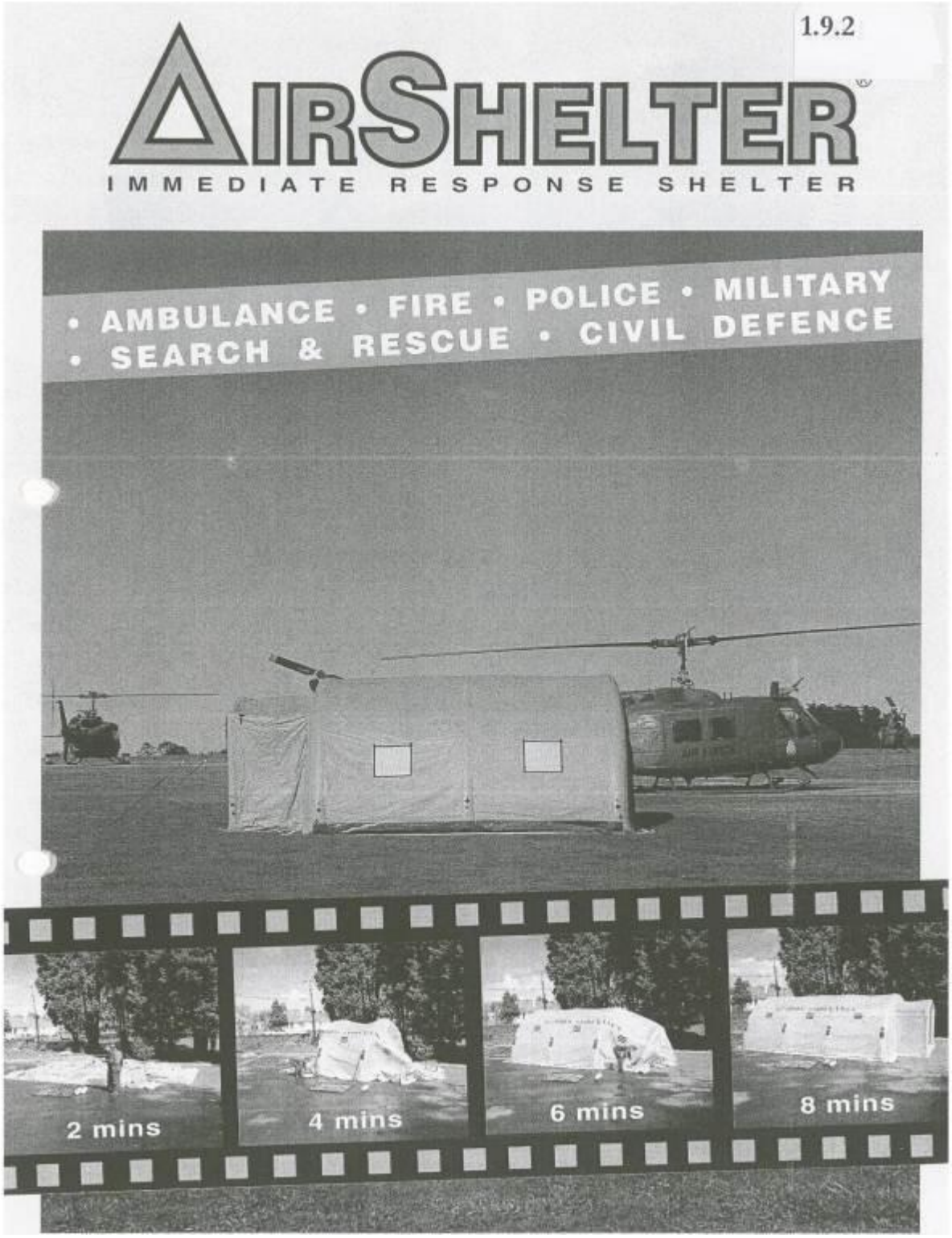
If you require more information let me know and we will provide this

Regards Lindsay

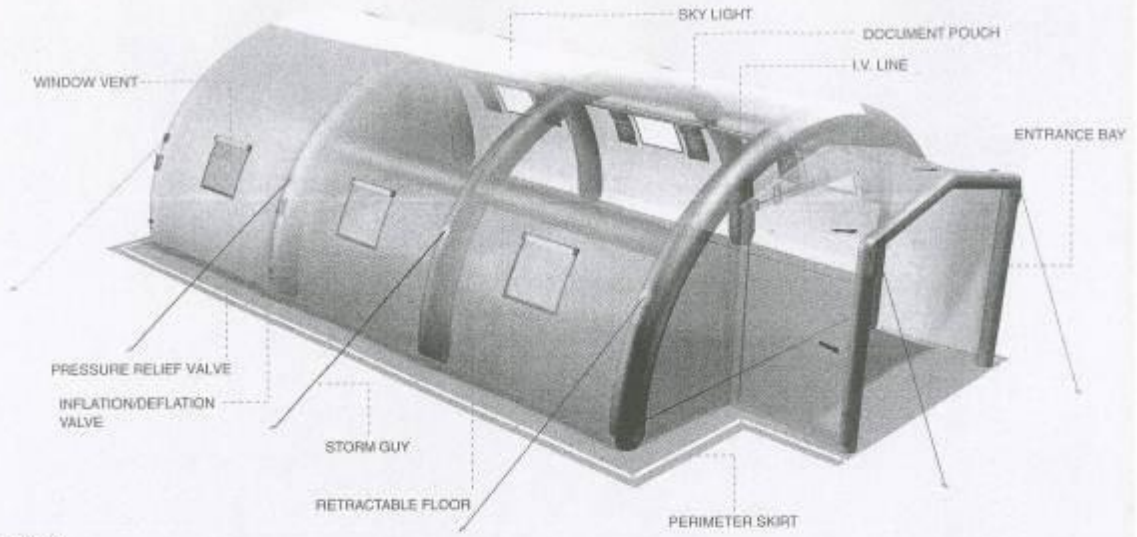
Lindsay Divett

m- 0274 338 731
e- lindsay.divett@xtra.co.nz

Southern Bulk Transport Limited
Petroleum Waste Solutions Limited



Note: The NZ Fire Service in Invercargill has one of these.



DESIGN
A self-contained inflatable structure designed to provide shelter in any location for emergencies or time critical situations. The design incorporates a network of independent inflatable arch and horizontal chambers supporting a protective outer skin and built in floor. Modular in design, individual AirShelters inter-link via the Entrance Bay, providing a weather proof grouping of shelters for field hospitals or group operations.

ROBUST CONSTRUCTION
The AirShelter is manufactured from quality polymer coated fabrics with seams and attachments welded or cemented to provide a robust construction for repetitive or long-term use. Internal lug attachments are fitted for the suspension of lighting, fabric partitions or similar.

AIR-DEPLOYMENT
With the exception of the inflation system, the AirShelter is totally manufactured from plastic/fabric components making it capable of sustaining considerable impact without damage. No rigid components also eliminates component loss while minimizing weight and pack size.

INFLATION
Even in adverse conditions the AirShelter is handled and inflated easily by two persons within 5 to 8 minutes. Each arch chamber is fitted with a Pressure Relief Valve to compensate for over-inflation or changes in atmospheric temperature.

RELOCATABLE
Once fully inflated the AirShelter can be carried by four persons and relocated for investigative work or shelter interconnection.

STABLE
The large diameter chambers and perimeter skirt ensure a stable form in winds up to 30 knots (15m/s). If required the Storm Guy option can be selected for increased stability in extreme conditions.

INFLATION SYSTEM OPTIONS
The AirShelter may be inflated by a number of methods including electric or manual pump, compressed air, CO_2, B.A., or Dive Cylinder. Inflation time will vary depending on the option selected.

ACCESS
Both ends of the AirShelter have 2.25m wide zip openings allowing access for large objects.

MAINTENANCE
The internal inflatable arches can be independently removed to make maintenance and in-field replacement a quick and easy procedure.

OPTIONAL ACCESSORIES

- **WINDOW VENTS**
  0.6m x 0.6m PVC mesh window and covering flap for visibility and ventilation.
- **SKY LIGHT**
  Translucent centre roof panel to provide additional diffused natural light.
- **RETRACTABLE FLOOR**
  A roll back floor to provide an open area for on scene or investigative work.
- **STORM GUYS**
  A webbing guy and storage pouch fitted to each arch chamber for additional support in extreme weather conditions.
- **PERIMETER SKIRT EXTENSION**
  Predominately for use on sand or asphalt the ground skirt can be extended during manufacture providing a greater attachment or weighting area.
- **I.V. LINES**
  Internal longitudinal lines and attachments for the suspension of intravenous drips.
- **DOCUMENT POUCHES**
  Clear A4 size pouches for documents or patient records.
- **LININGS**
  Antibacterial or chemical resistant fabrics are available to suit specific applica
- **FABRIC PARTITIONS**
  Full width partitions with a zip door way are available for dividing the AirShelter.
- **VENTILATION / HEATING**
  External chute and internal ducting is available for mobile ventilation or heating units.

STANDARD SPECIFICATIONS

AirShelter type	Length OA	Width OA	Height OA	Internal height	Chamber diameter	Operational pressure	Perimeter skirt width	Packed size	*Total weight	**Inflation time
5 x 5m unit + Entrance Bay	5.1m 1.45m	5.0m 2.55m	2.6m 2.24m	2.3m 2.07m	0.30m 0.17m	3 psi 3 psi	0.35m 0.30m	1.4 x 0.6 x 0.6m	99KG	5 minutes
7.5 x 5m unit + Entrance Bay	7.48m 1.45m	5.0m 2.55m	2.6m 2.24m	2.3m 2.07m	0.30m 0.17m	3 psi 3 psi	0.35m 0.30m	1.4 x 0.7 x 0.7m	130KG	8 minutes
7.5 x 5m central junction unit:	Standard 7.5 x 5m unit with an additional Entrance Bay located centrally each side, designed as a centre T junction unit for interconnecting AirShelters in group operations.									
Standard Kit:	Operation manual, 12 volt electric inflation/deflation pump, manual pump, ground pegs, hammer, leak-stoppers & repair kit.									

** Inflation times are based on B.A. (breathing air) cylinders, operated by two persons. * Lightweight versions or custom designs are available on request.

NZ Fire Service Ingill has one of these

COVERTEX
POLYMER FABRIC TECHNOLOGIES

COVERTEX LTD. 23 Westhaven Dr. P.O. Box 90 191 AMC, Auckland, New Zealand
Telephone: 64-09-308 9109 Facsimile: 64-09-303 0245
Email: covertx@ak.planet.gen.nz

ISO 9002 CERTIFIED SUPPLIER

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FLEXIBLE INDUSTRIAL AND TRANSPORT TANKS

POTABLE WATER • WASTE • CHEMICALS • FUEL • ISO9002
COST EFFECTIVE • HEAVY DUTY FITTINGS • ROBUST MATERIAL



DESIGN

- Transportation or static storage of water, waste, chemicals and fuels
- Customised sizes up to 100,000 litres
- Minimal packed size
- Robust material and construction

APPLICATION

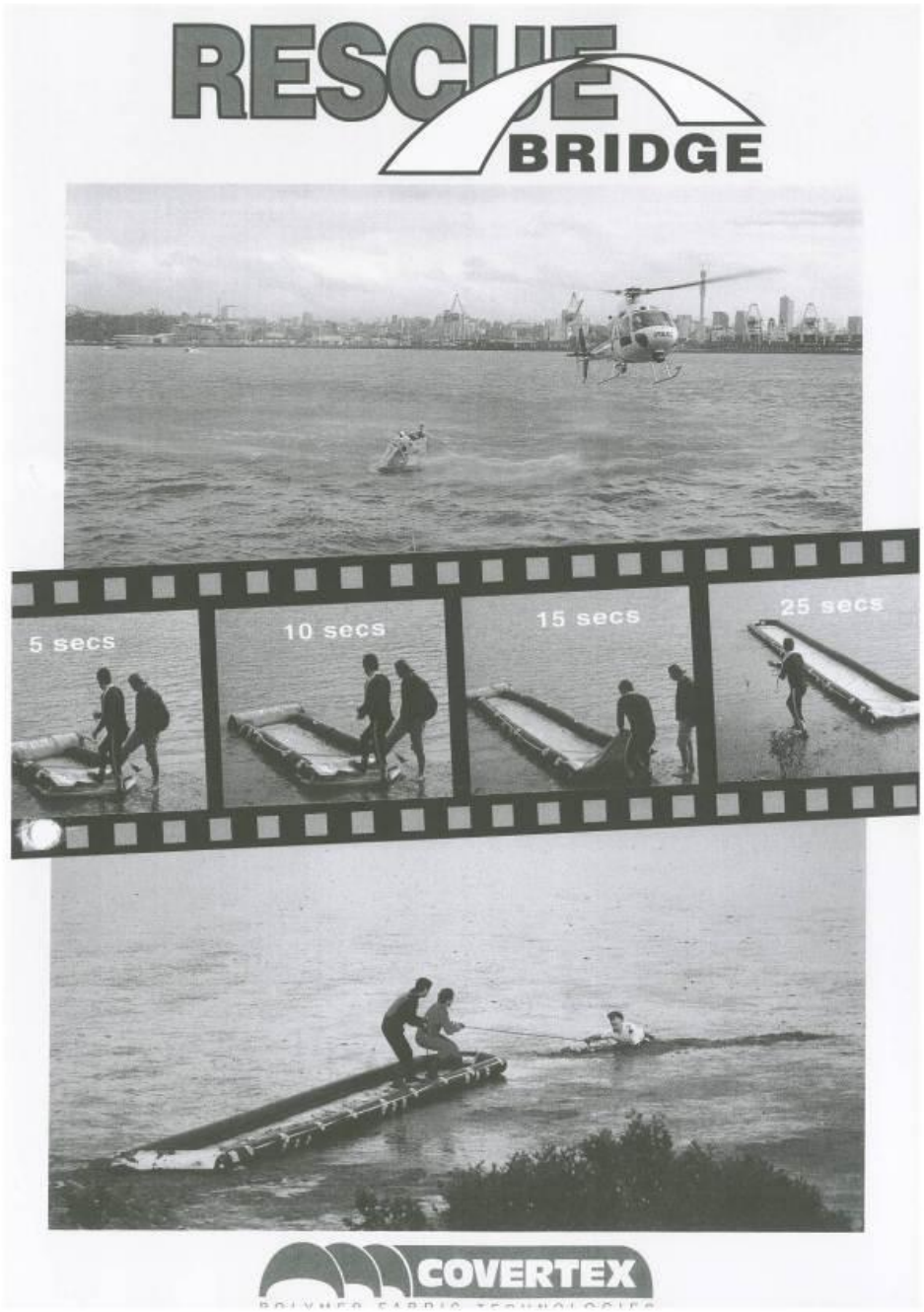
- Military
- Agri/Vini/Horticulture
- Transportation
- Disaster relief
- Remote location
- Marine
- Emergency services
- Large events

RELIABILITY

- Over 10 years experience
- ISO9002 certified
- Full material and workmanship warrantee
- Material certified to US Military standards

COVERTEX
POLYMER FABRIC TECHNOLOGIES

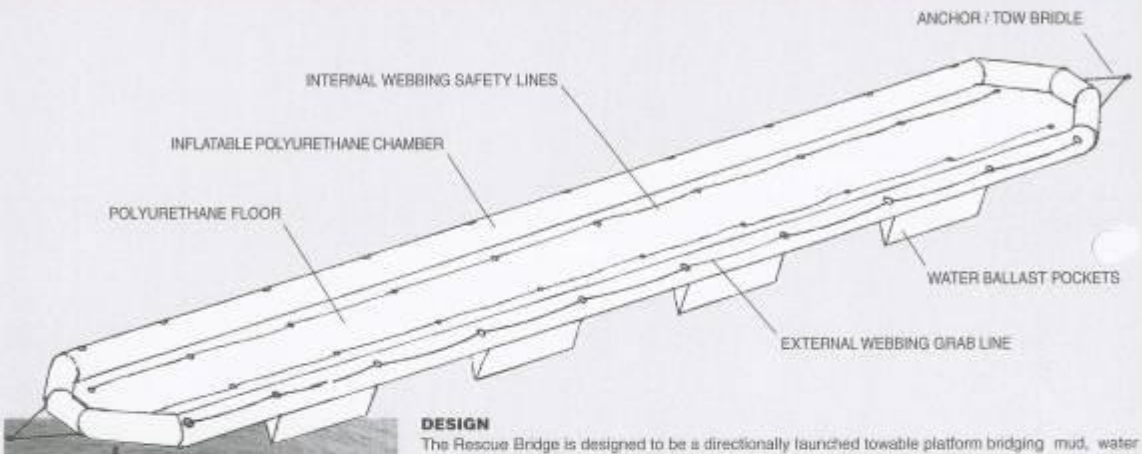
Covertex Limited. 23 Westhaven Drive, P O Box 90 191 AMC, Auckland, New Zealand.
Ph: 64-9-308 9109 Fax: 64-9-303 0245 E-mail: covertex@pl.net Web Site: www.covertex.co.nz



See Annex 1.8.8 also.

RESCUE BRIDGE

• Directional deployment in 25 seconds • Stable platform • Easily boarded • Towable • Re-deployable • CO_2 or Air cylinder inflation







DESIGN

The Rescue Bridge is designed to be a directionally launched towable platform bridging mud, water or other non-trafficable surfaces; Provide a stable platform for evacuation, rescue personnel and equipment access, or floatation platform for multiple persons.
Continuous spans can be achieved by linking Rescue Bridges together. Standard units are 12m in length or can be custom made to your requirements.

SPECIFICATIONS

- Dimensions standard unit: LOA 12m, Width OA 1.5m, Internal Width 1.0m, Chamber Ø 250mm
- Weight 45 kg (including CO_2 inflation system)
- Packed dimensions 1.3m x 0.4m x 0.3m
- Inflation time 25 seconds
- Operating pressure 3 psi
- Load capacity 20 persons

STANDARD FITTINGS

- External webbing grab lines
- Internal webbing safety lines
- Dual anchor/ towing bridles
- Water ballast pockets

MATERIAL SPECIFICATIONS

Both air chambers and flooring are manufactured from nylon reinforced polyurethane. This fabric is ideally suited for the Rescue Bridge due to its flexibility, chemical and abrasion resistance. The longevity of the fabric enables long term storage.

INFLATION SYSTEM

The Rescue Bridge is designed to operate with CO_2, BA or Dive Cylinder inflation equipment (inflation times will vary depending on the option selected).
Pressure Relief Valves are fitted to the air chambers to allow for over-inflation or changes in atmospheric temperature.

HANDLING AND TRAINING

The Rescue Bridge is lightweight and compact allowing easy operation by two people. Inflation/deflation valves are fitted for inspection or rapid deflation and repack following training or incident deployment.
Redeployment is quickly achieved once a charged cylinder has been refitted providing a cost effective training medium.

COVERTEX
POLYMER FABRIC TECHNOLOGIES
Covertex Ltd. 23 Westhaven Dr, P.O. Box 90 191 AMC, Auckland, New Zealand
Telephone: 09-308 9109 Facsimile: 09-303 0245
E-mail: covertx@ak.planet.gen.nz

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ISO 9002 CERTIFIED SUPPLIER

Southland Company
Otago and Southland Regiment
PO BOX 817
INVERCARGILL

PH: (03) 2187309 Zeke or Duty NCO.
Fax: (03) 2144934

1.9.3

ARMY STORES
HELD AT INVERCARGILL ARMY HALL

AS AT 17TH SEPTEMBER 2002

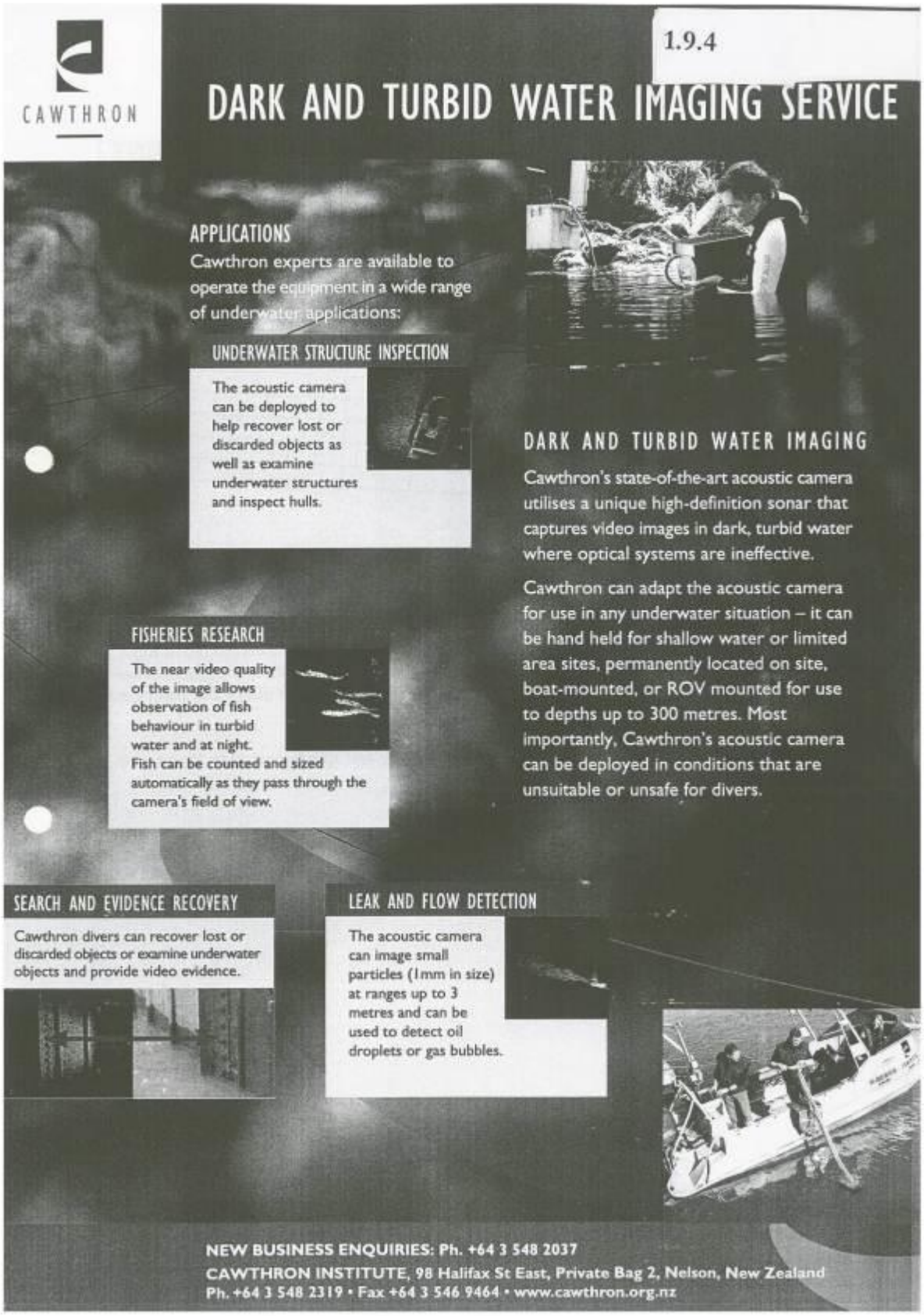
1. 11" by 11" Tent;
2. 10 x Sleeping Bags
3. 100 x Ration Packs complete with cookers and Hexi Tabs;
4. 20 x Blankets;
5. 1 x Forms Folding;
6. 4 x Stools;
7. 2 x Large Tables;
8. 6 x Torches;
9. 2 x Stretcher Ambulance; and
10. 1 x Unimog 1700.

More resources in Dunedin.

Would come with own comms.

Territorial Forces are now available in a CD emergency.

May 2015 – Sgt Simon Perkins, Cadre for Charlie Company is in charge. Mobile 027 637 7893.
Alternate contact – Waka Parkinson, 027 637 7895.
The ambulance is no longer based in Invercargill.



Phone Number is now 03 548 2319 – See below for 12 May 2015 update from Cawthron.

From: Rasmus Gabrielsson <Rasmus.Gabrielsson@cawthron.org.nz>
To: Dallas Bradley
Cc:
Subject: DIDSON SONAR

Hi Dallas,

Cawthron has a DIDSON sonar that is capable of imaging objects (fish, fixed structures, topography, cars, boats etc) up to 30 meters away.

The links below will help you better visualise how this type of technology can be applied.

About Sonar Imaging: http://www.soundmetrics.com/About-Sonar-Imaging

Here is a link to some real-world examples of imaging sonars in action: http://www.soundmetrics.com/Image-Gallery

Regards

Rasmus

Rasmus Gabrielsson
Freshwater Ecologist

CAWTHRON INSTITUTE . 98 Halifax Street East, Nelson 7010 . Private Bag 2, Nelson 7042 . **NEW ZEALAND**
Tel +64 3 548 2319 . DDI +64 3 5393277. Fax + 64 3 546 9464 . **www.cawthron.org.nz**

1.9.5 *Specialist Vehicles*

Vehicle	Owner	Contact Details
"Argo" eight wheeler (See Annex 1.7.3 also)	Department of Conservation Invercargill – DoC lease on Argo for 8 months/annum	Access through DoC Wildlife Advisor
"Argo" six wheeler	Te Anau Spray Contractors	Selwyn Cranstoun 03 249 7669
2 Suzuki 4WD ATV with tow bars plus trailer and ramps	Environment Southland (Winton Depot)	Dave Burgess (03 211 5115) or (03) 236 6040
2 Honda 200 motorbikes	Environment Southland (Winton Depot)	Dave Burgess (03 211 5115) or (03) 236 6040
4WD ATVs	Hire from motorbike retailers	
"Argos"	Blairs Engines, Geraldine (importers)	Bob Blair (03) 693 8126
Argo (eight wheeler)	Craig Smith	Biosecurity Division, Environment Southland, 021 784 945

1.9.6 *Commercial Divers*

Name	Phone No	Comments
NZ Diving and Salvage	0508 DIVERS (0508 348 377) (has an office in Dunedin)	www.nzds.co.nz
Gray Russell	(03) 212 8964	Osborn Engineering
Luke Simeon	0272 757 015 simeon diving@gmail.com	Stewart Island based diver who has dived on Bluff moorings for ES
Lyndon Cleaver	03 2115115 & 021 673043	Environment Southland
Doug Ridley	(03) 249 7368 (03) 249 7322 (bus)	Te Anau (Not sure that he still does it but he may know who does)
Mike Haines	(03) 212 7757	Operator of Kiri Waipai
Paul Young	(03) 212 7355	Bluff Paua Diver (Does a lot of undaria monitoring for Biosecurity NZ)
Tony Cree, Civil Marine Group Ltd – Construction Diving & Engineering Services	dive.cds@xtra.co.nz 027 325 7821 03 384 3215	Extensive professional diving experience. www.civilmarinegroup.com
Craig Harpur	03 249 7984	Based in Te Anau - Not a diver himself but has links to commercial divers and has organised a few salvage jobs in Fiordland

1.9.7

Port Maintenance – Bluff

John Roderique – Owner/Manager
Website: www.energyandmarineservices.com

Resources

Manpower -	John Roderique, Hayden Roderique, Michael Roderique, Daniel Roderique, Lindsay Woodrow, Zak Campbell, Bernie White, Johnathan Dantith and Jung Yun Kim are all trained as Regional Response Team members. Up to 15 untrained men who can assist the above.
Trucks -	4 Hiab Trucks [the largest Hiab has a 22 metre reach at 1.5 tonnes (8 tonne in close)] 30 foot curtain sider truck (six wheeler with a 1.5 tonne tail lift capability)
Forklift -	5 tonne forklift
Boats -	32' Landing Barge 15' dinghy (25 HP) x 2 50' "Awarua" ex South Port Pilot Boat (surveyed for 12) 52' Motor Sailor "Patricia" ex Goughs 23' Shark Cat (Twin 140 hp Out Boards)

Contact Details

Address:	Island Harbour, P.O. Box 46, Bluff 9842
Telephone:	03 212 7674
Cellphone	027 240 7820
Fax	03 212 7675
Email	portmaintenance@xtra.co.nz
A/hrs phone	03 212 7076

Comments

Port Maintenance also maintains the oil spill equipment under contract to Maritme NZ.

(T:Policy_Planning\DallasB\Tier 2 Plan 2007\Port Maintenance Bluff July 2009.doc)

1.9.8

Envirowaste

Maritime NZ has a contract arrangement with Envirowaste to provide nationwide waste management services including disposal, temporary storage, decontamination, site establishment and equipmentcleaning during either a Tier 2 or Tier 3 oil spill response. 24 hour contact details for Envirowaste are:

Des McCleary	0274 874 946; or
Wayne Plummer	021 966 488.

1.10 Resources (Accommodation in Remote Places)

ALTERNATIVE ACCOMMODATION/COOKING FACILITIES

Milford Sound

Venue:

Name: **Mitre Peak Lodge (Seasonal)**
Address: Milford Sound
Telephone: (03) 249 7926
Capability: Beds: 100 Meals: 100

Contact Person/Key Holder

Name: **Bill Neilsen**
Address: Te Anau
Telephone:

Venue:

Name: **Milford Sound Lodge**
Address: Milford Sound
Telephone: (03) 249 8071
Capability: Beds: 100-150 Meals: 100

Contact Person/Key Holder

Name: **Colin McKinnell**
Address: Milford Sound Highway
Telephone: (03) 249 8071

Venue:

Name: **Hotel Coffee Bar**
Address: Milford Sound
Telephone: (03) 249 7926
Capability: Snack type food, seats 50 people

Contact Person/Key Holder

Name: **John Robson**
Address: Milford Sound
Telephone: (03) 249 7926

Alternatively, accommodation/meals may be available on vessels – contact Real Journeys or Southern Discoveries, the principal tourist boat operators. The above & following information is somewhat dated but is indicative of what is available. The ES Harbourmaster is also likely to know what may be available.

A BOATIES' GUIDE TO FIORDLAND

ES Library No 2455.

Update to June 1996

Please incorporate these changes into your copy of the **Guide.**

The following informati FIORDLAND g in the Fiordland area in February/March 1996. T ly changing nature of this type of information.

The Mana Cruising Clu ACCOMODATION accurate information, but please note that the discla o applies to this Update.

p.16 final para to p.17 para 1 **Radio Communications:** *Delete all text* "Kerikeri Marine Radio ... collect calls". The station is no longer operational.

p.47 para 4 **Milford Sound:** *Delete para* "Laundry ...." *and substitute:*

Milford Lodge: This is 20 minutes walk from Deep Water Basin on Highway 94, and offers budget-accommodation and facilities. Laundry, showers, meals and basic supplies are available.

p.52 final para **Bligh Sound, Bounty Haven:** *Add:*

A permanent anchor and sternline mooring facility is available. A kedge anchor laid abeam to the east is recommended, to prevent boats being taken by tidal eddies into the shallows by the rock wall. GPS coordinates for the anchorage, which can be difficult to identify, are 44° 52.3' S, 167° 31.3' E.

p.60 para 8 **Charles Sound, Eleanor Island** *Delete text and substitute:*

The anchorage in the cove on the east side is all-weather, and there is a mooring rope across it to tie alongside.

p.64 para 5 **Thompson Sound, Deas Cove:** *Insert after first sentence:* There is a combined mooring/sternline available.

p.68 para 5 **Doubtful Sound, Blanket Bay** (Anchorages): *Add:* A freshwater hose is available at the breastwork.

p.68 para 6 to p.70 para 7 **Blanket Bay** (Facilities): *Delete all text.* These services are no longer available. (*But please note:* Power House Tours and trips to Te Anau (also referred to on p.73) can still be arranged through Fiordland Travel.)

p.73 para 1 **Doubtful Sound, Deep Cove** (Facilities) "Deep Cove Outdoor Education Trust": *Add:* The hostel is available only in school holidays.

See Annex 1.10.3 below

p.81 para 9 **Breaksea Sound, Vancouver Arm:** *Delete text and substitute:*

There is a large anchorage area of 15 to 25 metres depth, surrounded by high hills. It may be gusty in strong conditions.

p.84 (sketch) **Dusky Sound, Western Anchorages:** *Note:* The rock north of Stop Island is close to the middle of the passage between Stop and Anchor Islands. The passage between the Two Sisters and Long Island is best taken close to the Sisters, where there is a depth of 7.5 to 12 metres in the passage.

p.95 para 7 **Chalky Inlet, Northport:** *Delete first sentence* "It is possible ... Little Island.". (The barge is no longer there.) *Also note:* Beware of parked craypots which may look like moorings.

p.103 para 3 **Preservation Inlet, Isthmus Sound:** *Add:* There is a double buoyed stern line to serve the western anchorage.

para 8 **Last Cove:** *Delete second sentence* "Beware of ..." *and substitute:*

Beware of the rock in the centre of the entrance, and the reef extending to the southwest shore. They are not visible at half tide. There is good depth for entry by keeping close to the north side of the cove. "

Add after "Last Cove" entry:

"Cascade Basin, Head of Long Sound (*No sketch*): Keep to the centre of the entrance to avoid river shoals on both sides. There is a good anchorage in about 9 metres inside the basin on the west side behind the shoal. Boats can pull close into shore with a sternline, out of the wind coming up the Inlet. *See also* note p.107 para 5 re the magnificent waterfall which is accessible by dinghy.

p.103 para 9 to p.105 para 4 **Preservation Inlet** (Facilities) "Preservation Lodge": *Delete this section* (the operation does not operate commercially) *and substitute:*

ES File
Ref: 5255-001

Preservation Lodge: A track leads from the jetty to the lodge. It is not a commercial operation, but may be able to provide limited facilities (showers, laundry) if the caretaker is in residence. The caretaker keeps a listening watch on SSB 4417 and VHF Channel 10, and is also on both the Bluff Fishermen's Radio and Riverton Fishermen's Radio SSB skeds. Owner: Brian Stevenson, 405 Bayley Road, RD3, Te Anau 9600 Ph 07 872 2831

p.105 para 5 **Preservation Inlet** (Facilities) "Water":

Amend second sentence "Look for..." *to read* "Look for two floats (yellow and orange) in the trees and tie alongside the large black float against the bank."

Insert after third sentence ("...in the sea"): "The water is brown. Yachts should watch for entanglement of their rigging in the overhanging trees."

See Annex 1.10.4 below for more details on "Preservation" or "Kisbee" Lodge.

1.10.3

Deep Cove Hostel Accommodation

The following facilities may be available for use in an oil spill response:

- new accommodation block (sleeps 10)
- flat attached to manager's residence (sleeps 6-8)
- the hostel itself (sleeps 50)
- flats attached to the hostel (sleeps 6-8).

See also Annex 2.8.2

Deep Cove Hostel Trust	Chairman: Paul Gay		03 217 5266 Fax 03 217 5261	021 2044 698 Bob Hughes (Alternate to Paul) 03 218 7655
Deep Cove Hostel Manager	0087 077 675 1930	Best means of contact is by Skype to "Deep Cove Hostel"		Email: 870776751930@msg.iridium.com

1.10.4

Dallas Bradley KISBEE LODGE CONTACT DETAILS.

From: Dallas Bradley
Sent: Wednesday, 26 June 2013 10:30 a.m.
To: Kevin O'Sullivan
Subject: FW: Kisbee Lodge

Current caretaker is Gavin Burgess's (Helicopter Line) father. Evidently the Stevensons are from Te Puke. They have a consent in the name of (Puysegur Holdings Ltd) 07 872 2543, PO Box 11057, Papamoa, Tauranga 2400

Puysegur Holdings is Brian and Colin Stevenson, Bayley Road, RD 3 Te Awamutu.

From: Lyndon Cleaver
Sent: Monday, 8 April 2013 11:42 a.m.
To: Dallas Bradley
Subject: Kisbee Lodge

Owners:

Colin & Brian Stevenson (brothers) 027 475244

Kisbee Lodge monitors Ch 01 & has regular scheds with Bluff Fishermans Radio

Lyndon Cleaver

From: Kevin O'Sullivan
Sent: Wednesday, 26 June 2013 1:02 p.m.
To: Dallas Bradley
Subject: FW: Kisbee Lodge Updated Contact Details

FYI

From: Kevin_DML [mailto:kevin@dmlsurveys.co.nz]
Sent: Wednesday, 26 June 2013 12:23 p.m.
To: Kevin O'Sullivan
Subject: Kisbee Lodge Updated Contact Details

HI Kevin,

FYI the latest contact numbers for Brian Stevenson of Kisbee Lodge.

Hm: (07) 872 2831
Office 1: (07) 872 2543
Office 2: (07) 872 2541
Mob: 0274 426784
Email: bdstev@gmail.com

Regards

Kevin Smith
General Manager
Discovery Marine Ltd

Mob: +64 21 630 310
Web: www.dmlsurveys.co.nz

Annex 2

Personnel Lists and Mobilisation Instructions

2.1 The Response Organisation
- 2.1.1 Environment Southland

2.2 Supporting Organisations
- 2.2.1 Port Maintenance Company Ltd.
- 2.2.2 Department of Conservation
- 2.2.3 Te Ao Marama
- 2.2.4 Marine Oil Spill Response Structure

2.3 Co-ordinated Incident Management Systems (CIMS) Position Checklists

2.4 Mobilisation Procedures
- 2.4.1 Authority
- 2.4.2 Mobilisation Requirements
- 2.4.3 Requirements of the Regional On Scene Commander

2.5 Database of Trained Responders Resident in Southland
- 2.5.1 Maritime NZ trained responders in Southland

2.6 Contact phone numbers
- 2.6.1 Responders (Environment Southland)
- 2.6.2 Southland Wildlife Response Personnel

2.7 Contact phone numbers – Responders (other than Environment Southland staff)

2.8 Advisors/Liaison Personnel
- 2.8.1 Advisors
- 2.8.2 Contact phone numbers – Stakeholders
- 2.8.3 Marine Surveyors

2.9 Ministry of Fisheries Communications Centre

2.10 Marine Farmers/Water Abstractors

1.11 National Oiled Wildlife Response Team (NOWRT) Members

1.12 Ruapuke Islander Contact List

2.1 The Response Organisation

2.1.1 *Environment Southland*

The nucleus of the response team will consist of the Regional On Scene Commander and his/her Advisory Team and a Support Unit. The Support Unit consists of Operations, Planning and Logistics personnel, a Media & Community Relations Co-ordinator, an OSH Advisor and other Advisors. The Response Team structure is outlined in Section 2.2.4 of this Annex. Contact numbers are given in ***Sections 2.6-2.8.*** The various coloured vests to be worn for easy identification of Support Unit staff are kept in the back of the top drawer of the steel filing cabinet in the SE corner of the Incident Command Centre (see Section 1.0).

The final composition of the Response Team will depend on the exact circumstances of the spill. The Regional On Scene Commander will decide which response personnel to call upon during a response operation. The available persons who have been trained to respond to marine oil spills and type of oil spill training are listed in Annex 2.5.1.

While the Response Team Structure identifies many roles, the reality is that in all but the largest spills, responders will undertake more than one role and some roles will not be required. Coordinated Incident Management System Checklists are included in Section 2.3 of this annex as a guide to duties and tasks that key staff/divisions may be expected to undertake. Further guidance is contained in Chapter 3 of this Plan.

Emergency Management Southland staff who operate on a day-to-day basis from the building that houses the EOC are available to assist with logistics, communications and co-ordination tasks.

2.2 Supporting Organisations

2.2.1 *Port Maintenance Company Ltd*

Port Maintenance has agreed to supply the Regional Council with labour and or equipment (including barges, forklifts, tugs and workboats) to assist with the response to spills See Annex 6.13 for a copy of the "Agreement to Supply Services" and see Annex 1.7.12 for a list of equipment that is available. Several Port Maintenance staff are trained for this purpose (see Annex 2.5.1).

2.2.2 *Department of Conservation*

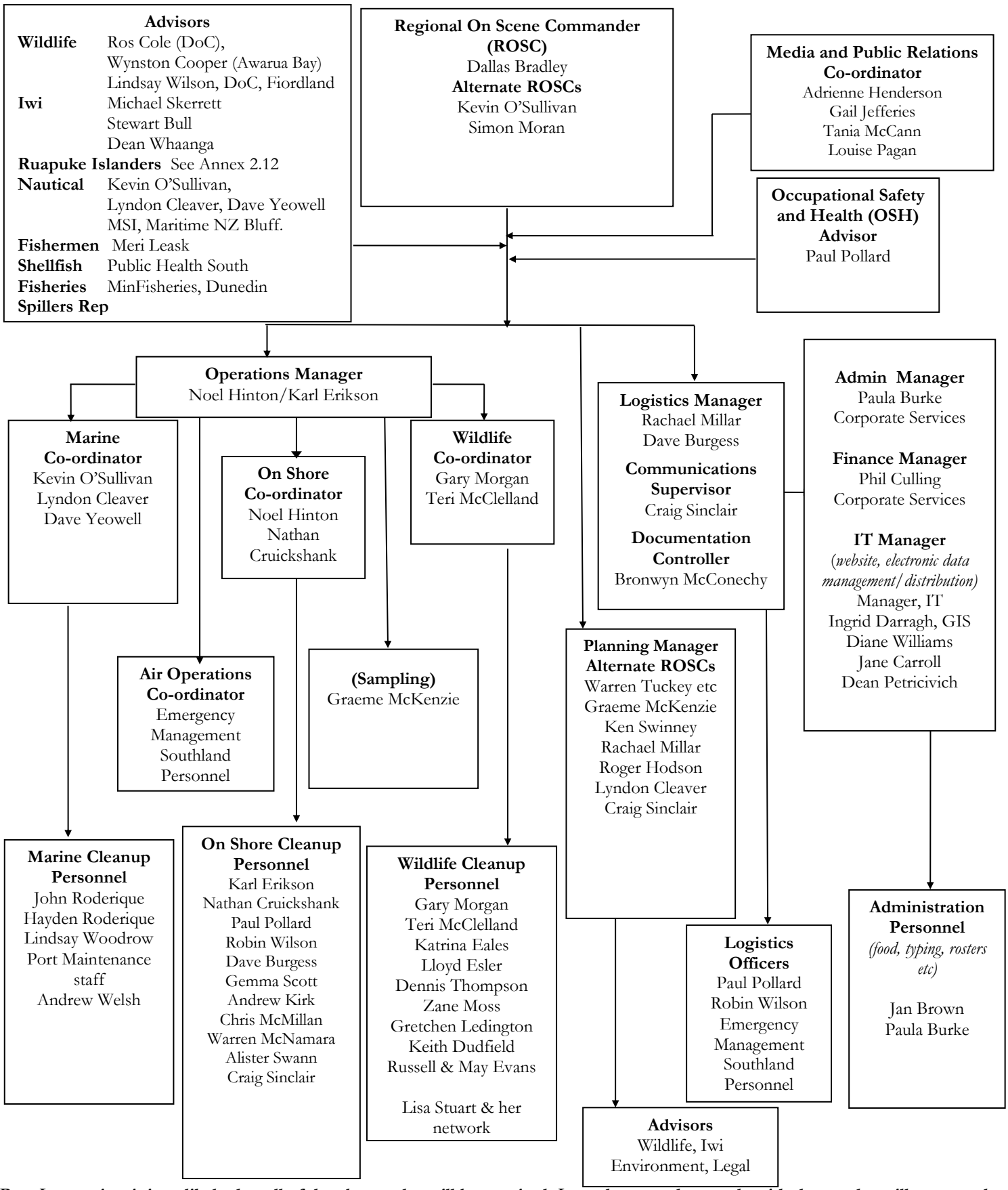
Department of Conservation staff (Lindsay Wilson, Ros Cole & Jo Hiscock) have a formal wildlife advisory role. The use of DoC staff, in particular Stewart Island staff, is covered by a Memorandum of Understanding (see Annex 6.6).

DoC staff have an important role to play in respect of oil spills at Stewart Island. DoC staff and equipment at Stewart Island are a resource that can be called upon if available to provide information on the impacts of any spill on Stewart Island. The use of DoC (Stewart Island) staff should be co-ordinated through one of the wildlife advisors referred to above.

2.2.3 *Te Ao Marama & wider Iwi consultation*

Te Ao Marama either source or provide Iwi advisors and liaise with affected Runanga. Michael Skerrett, Dean Whaanga and Stewart Bull have both been trained as Oil Spill Managers. For spills in the Bluff area, Gail Thompson should also be consulted.
For spills that may impact upon Mataitai areas, the appropriate Tangata Tiaki should be consulted (contact persons are named in Annex 4).
For spills that could affect Ruapuke Island, see Annex 2.12 for persons who should be consulted.

2.2.4 Marine Oil Spill Response Structure



NB: ***In practice, it is unlikely that all of the above roles will be required. In such cases, the people with those roles will support the response in another role. This is reflected to some extent by the repeat appearance of some names above.***

Staff Identification in the Incident Command Centre (Coloured Vests)

The Maritime NZ has supplied coloured vests for use at all oil pollution responses to help quickly identify key persons within groups working in the ICC.

The Maritime NZ's letter dated 10 July 2000 accompanying the vests states:

> *"The colour group identification is as follows:*
>
> ***Black***..... *Operations*
> ***Blue***..... *Planning*
> ***Yellow***..... *Administration*
> ***Purple***.....*Logistics*
> ***Green***.....*Finance*
> ***Red***.....*OSH"*

The vests are kept in the south-west corner of Dallas Bradley's office. A laminated card describing, in bold print, the position each colour represents is kept with the vests. This card should be displayed alongside the place where the ICC management team is described. A copy of the card is on the following page.

An alternative to the above arrangement is to use the Emergency Management Southland vests that are pre-printed with the role specified. This is probably a better arrangement where the personnel are unfamiliar with the Maritime NZ colour codings.

Black ..... Operations

Purple..... Logistics

Blue ..... Planning

Green..... Finance

Yellow ..... Administration

Red ..... OSH

Co-ordinated Incident Management System
Position Checklist

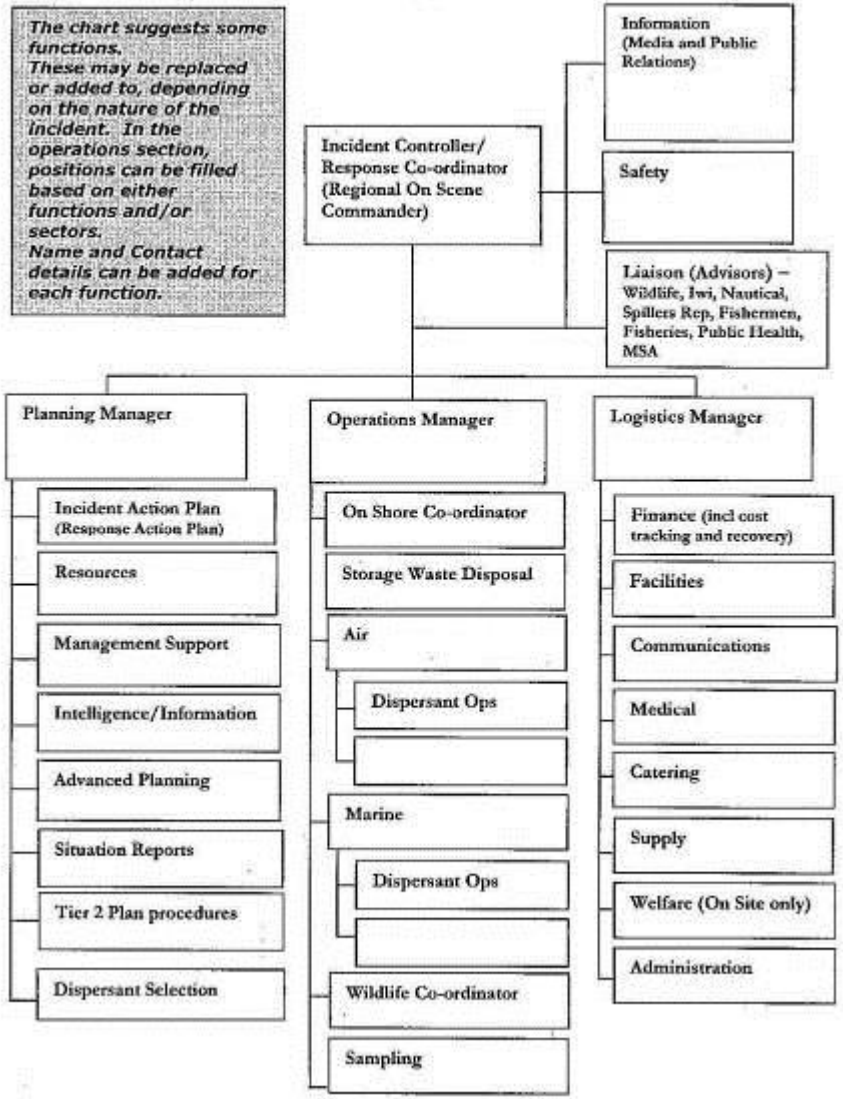
Incident Controller
(Regional On Scene Commander)

Takes control at an incident and manages directly, or appoints people to CIMS management positions.

Note: See also Response Co-ordinator responsibilities.

- ☐ Assume control of organisations at the incident, and maintain command within home organisation.
- ☐ Record decisions, actions, and other activities.
- ☐ Consider appointment of an aide.
- ☐ Assess the situation and seek appropriate advice.
- ☐ Establish management structure.
- ☐ Appoint, brief, and task staff.
- ☐ Establish Incident Control Point/Forward Command Post, and other facilities.
- ☐ Initiate Incident Action Planning (Response Action Planning) cycle with Incident Management Team.
- ☐ Report/liaise with Lead and Support Agencies and Advisors.
- ☐ Plan future staff requirements and changeovers (see Annex 21.12).
- ☐ Ensure coordination of media/public information.
- ☐ Maintain safe practices.
- ☐ Conduct regular briefings.
- ☐ Liaise with Tier 1 Site Manager or Spiller's representative and delegate responsibilities to make optimum use of Tier 1 or Spiller's personnel and resources.

Co-ordinated Incident Management System
Structural Chart



Co-ordinated Incident Management System

Position Checklist

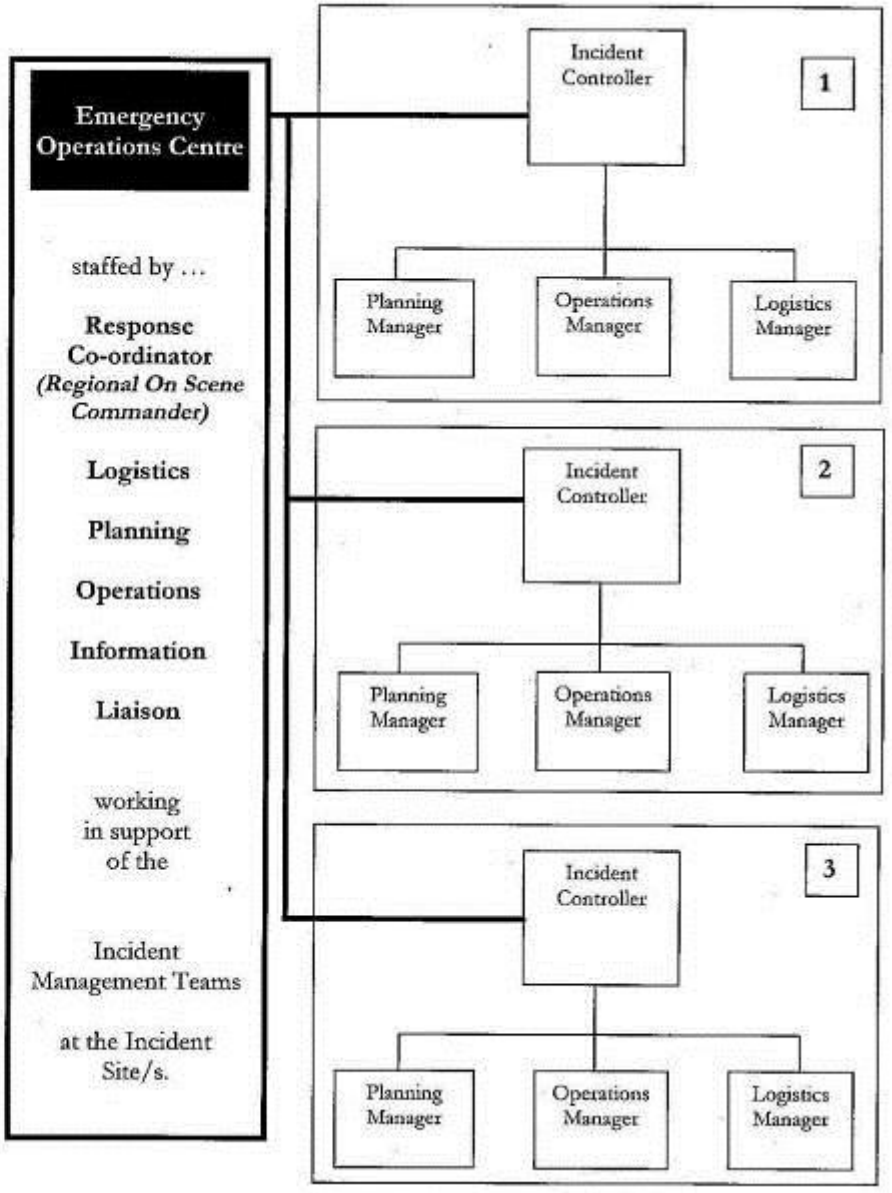
Response Co-ordinator

(Regional On Scene Commander)

Leads a high level management structure that provides strategic direction, support and co-ordination for Incident Management Teams in complex or multiple incidents

Note: See also Incident Controller responsibilities for smaller events.

- ☐ Assess overall situation.
- Record decisions, actions, and other activities.
- Assess political issues, resource constraints, etc.
- Consider the appointment of an aide or Tier 2 Advisor.
- Appoint co-ordination staff.
- Consult with key authorities, organisations and advisors.
- Designate an Emergency Operations Centre (Incident Command Centre).
- Set priorities for allocation of resources.
- Ensure effective strategies are adopted.
- Approve Incident Co-ordination Plans.
- Ensure information is shared.
- Ensure co-ordination of media/public information.
- Plan future staff requirements.
- Organise changeovers of your team.
- Make personnel safety the top priority.
- Authorise procurement of resources.
- Establish contact with Spiller's representative.



Co-ordinated Incident Management System
Position Checklist

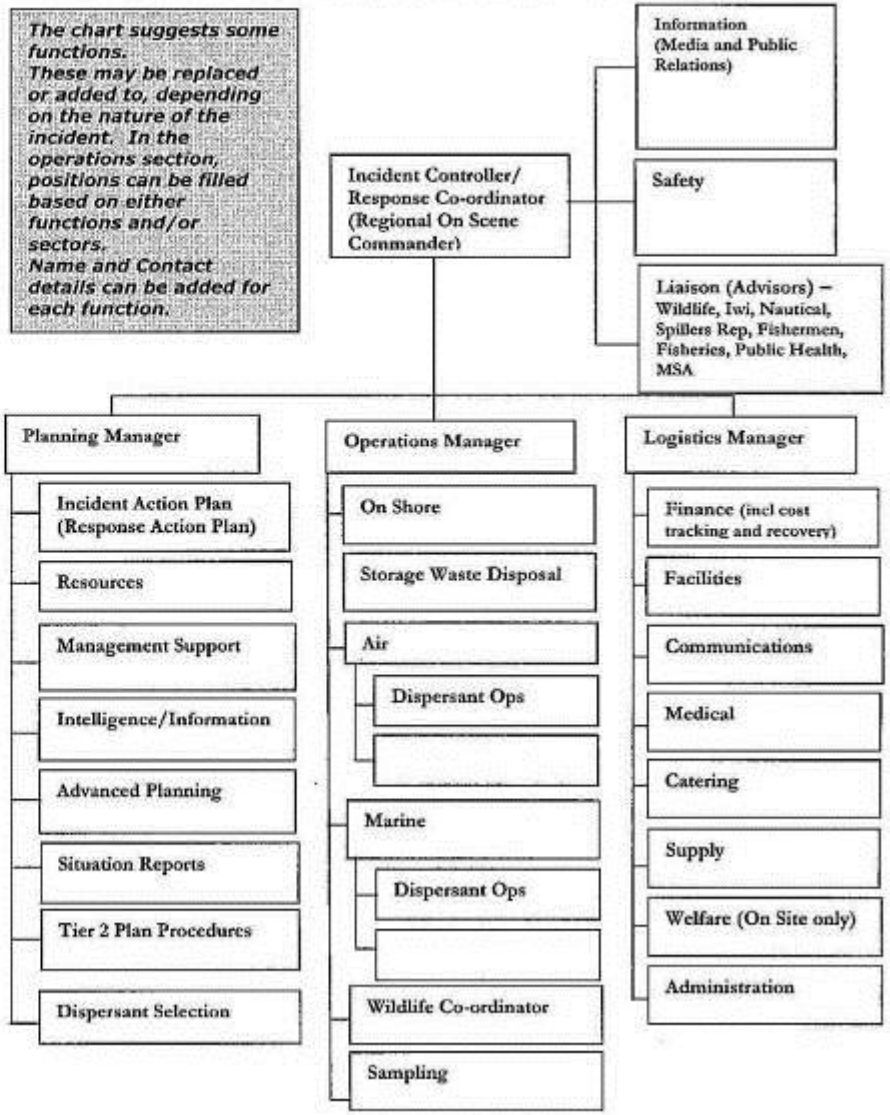
Operations Manager

Directs response operations.

- ☐ Obtain briefing from the Incident Controller (Regional OSC).
- Record decisions, actions, and other activities.
- Help prepare the Incident Action Plan (Response Action Plan).
- Determine the Operations management structure.
- Appoint, brief, and task staff.
- Manage, supervise and co-ordinate the Operations section.
- Establish Staging Areas (note that **Logistics provides** while **Operations manages** this function).
- Assemble and deploy resources – record this.
- Implement tactics for the Incident Action Plan.
- Provide regular Situation Status reports to the Regional OSC.
- Review and prioritise resource needs.
- Resolve operational problems.
- Ensure safety and welfare of personnel.
- Report significant events.
- Assist with the preparation of media releases if requested by the Media Liaision Officer.
- Attend briefings, including media, if and when requested by the Regional OSC.

CIMS Position Checklists

Co-ordinated Incident Management System
Structural Chart



Co-ordinated Incident Management System
Position Checklist

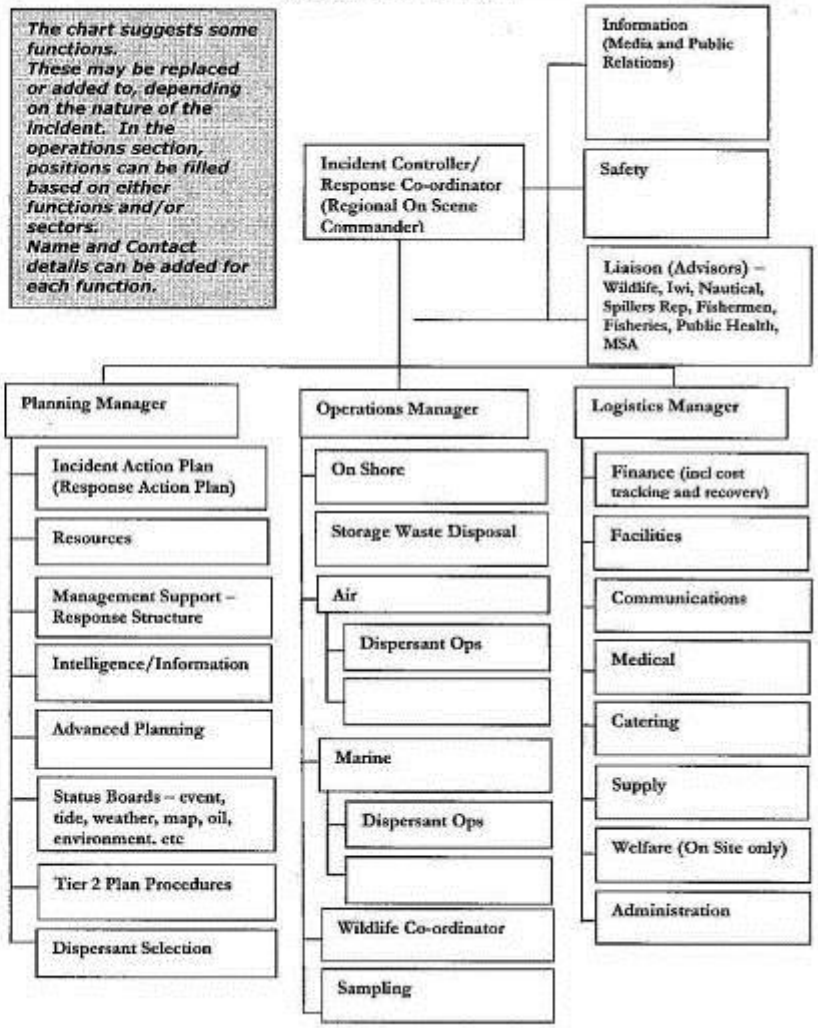
Planning Manager

Collects information, analyses it, and makes decisions based on it.

- ☐ Obtain briefing from the Incident Controller.
- ☐ Record decisions, actions, and other activities.
- ☐ Co-ordinate the preparation of the Incident Action Plan and determine the strategic direction.
- ☐ Communicate with the Incident Management Team.
- ☐ Determine the information needs.
- ☐ Gather, clarify, confirm, and analyse information.
- ☐ Observe deadlines, and critical information needs.
- ☐ Appoint, brief and task staff.
- ☐ Manage maps and display (status) boards.
- ☐ Track incident/resources status.
- ☐ Liaison with technical experts and advisors.
- ☐ Conduct planning meetings.
- ☐ Provide management support.

CIMS Position Checklists

Co-ordinated Incident Management System
Structural Chart



Co-ordinated Incident Management System
Position Checklist

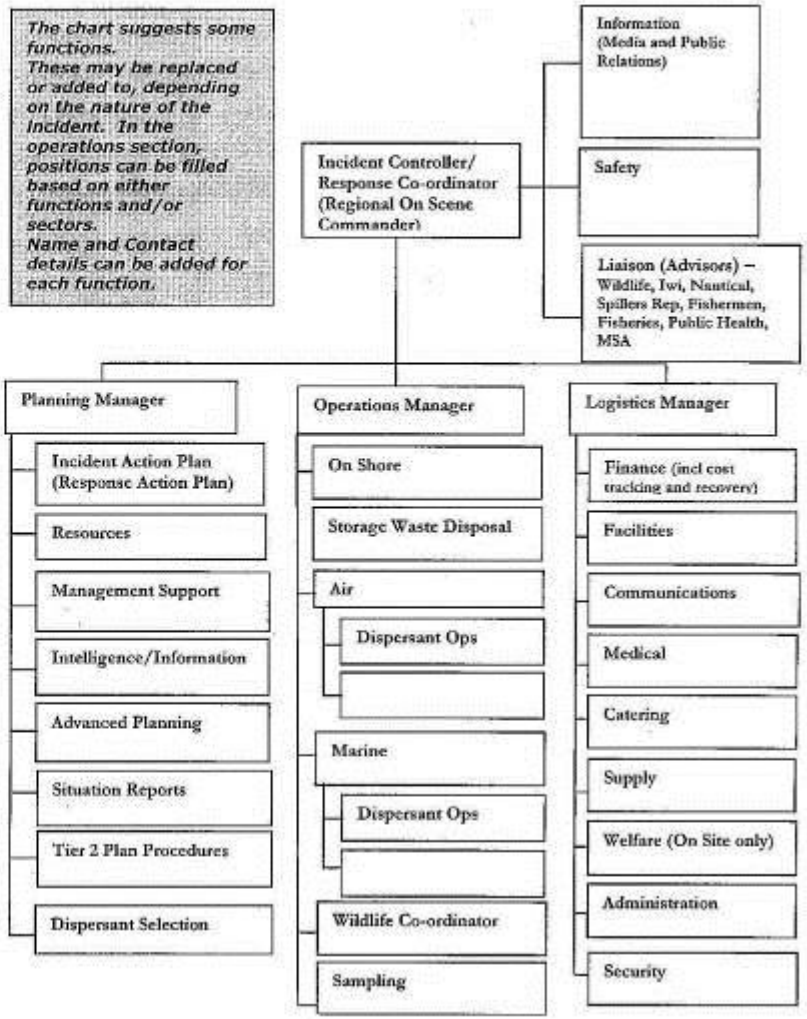
Logistics Manager

Supports the response by providing and maintaining facilities, services, and materials

- ☐ Obtain briefing from the Incident Controller.
- ☐ Help prepare the Incident Action Plan (Response Action Plan).
- ☐ Record decisions, actions, and other activities.
- ☐ Estimate future service and support requirements and adhere to levels of authority (see **Annex 2.4.1**).
- ☐ Prepare to provide supplies, facilities, communications, medical, catering, refuelling, mechanical, and traffic support as required.
- ☐ Track costs, and offer incident financial advice.
- ☐ Plan the organisation of the Logistics section.
- ☐ Appoint, brief, and task staff.
- ☐ Process requests for resources (see logistics request form in **Annex 21**).
- ☐ Prepare the Communications Plan (Operations).
- ☐ Identify possible resources, including details such as transport, costs, etc.
- ☐ Advise Operations of resources availability.
- ☐ Provide management support.
- ☐ Demobilise equipment and resources at end of response
- ☐ Provide security to the ICC, field operations (cordons) equipment stores and access points.

CIMS Position Checklists.doc

Co-ordinated Incident Management System
Structural Chart



2.4 Mobilisation Procedures

2.4.1 *Authority*

These instructions set out the procedure to be followed when mobilising personnel in response to a marine oil spill. The decision to mobilise personnel will generally be made by the Regional On Scene Commander but for spills inside the Bluff Harbour, this will be after consultation with the Manager of Port Maintenance Ltd.

2.4.2 *Mobilisation Requirements*

Persons mobilising responders are to ensure that:

- they have the authority to do so;
- the OSC, or the OSC's Finance Manager, is informed of the responder's name, hourly pay rate, commencement and finish times for pay;
- responders are appropriately trained for the job they will carry out;
- responders are adequately attired and have adequate safety equipment, including personal flotation devices, if appropriate;
- transport to the appropriate site is arranged for the responders, and the responders are informed of these arrangements;
- responders are briefed about where they will be working, for approximately how long they will be deployed in the field (hours, days or longer), and who they are to report to on arrival;
- the Regional On Scene Commander is informed who the responders are and what their estimated time of arrival (ETA) will be;
- adequate accommodation and meals are arranged for the responders (if required), with transport to and from the site at which they will be working;
- adequate first aid and medical facilities are arranged;
- sufficient and timely relief personnel are provided;
- return transport and debriefing is arranged on their release by the OSC.

2.4.3 *Requirements of the Regional On Scene Commander*

The OSC or designated staff eg the Occupational Safety and Health Advisor are to ensure that:

- responders are not employed in hazardous situations beyond their training and/or experience;
- responders wear safety equipment appropriate to the conditions under which they are working;
- responders are given adequate supervision, rest and refreshments;
- the times worked by individual responders are noted for payment purposes;
- responders receive adequate medical care as, and when, required;
- responders are relieved before they come unduly fatigued (including the OSC).

2.5 Database of Trained Responders Resident in Southland

1.5.1 **Maritime NZ trained responders in Southland**

See Web EOC MPRS Database http://webeoc.maritimenz.govt.nz/eoc7/Default.aspx or alternatively see the Environment Southland Electronic Records System A15214 for the latest version of the databaseof trained Southland Responders.

Dallas Bradley, Kevin O'sullivan, Nathan Cruickshank and Karl Erikson and Simon Moran have logons and passwords.

There is also a generic logon and password;
Username: southland
Password: Environment1

Alternatively contact Eva Maxwell from Maritime NZ, Te Atatu, Auckland for access.

2.6 Contact phone numbers

2.6.1 ***Responders (Environment Southland)***

See the Environment Southland Intranet or the "Green Sheet", a regularly updated hard copy staff telephone directory.

2.6.2 ***Southland Wildlife Response Personnel***

The following personnel have the necessary skills to implement oiled wildlife deterrence, rescue and rehabilitation operations under the guidance of the Wildlife Co-ordinator. These personnel have been trained in Oiled Wildlife response.

Additional trained personnel can be sourced through the Otago Regional Council or MARITIME NZ. See Annex 2.11 for a list of the National Oiled Wildlife Response team members and their contact details.

Regional Personnel	Organisation	Contact
Gary Morgan Wildlife Co-ordinator	Environment Southland PO Box 90116, Invercargill	211 5115 (wk) 215 9840 (hm)
Teri McClelland Alternate Wildlife Co-ordinator	Southern Institute of Technology Private Bag 90114, Invercargill	218 2599 (wk) 230 4338 (hm) 021 220 6654
Robin Pagan	Parks Manager, Invercargill City Council Private Bag 90104, Invercargill	2199 070(wk)
Lloyd Esler	15 Mahuri Rd, Otatara RD9 Invercargill	213 0404 (hm)
Dennis Thompson	Parks Department Invercargill City Council Private Bag 90104, Invercargill	2199 070(wk)) 217 7831 (hm)
Zane Moss	Southland Fish & Game Council P O Box 159, Invercargill	215 9113 (wk) 217 0715(hm)
Keith Dudfield	Parks Department Invercargill City Council Private Bag 90104, Invercargill	217 7368 (wk) 217 4616 (hm)
Russell and May Evans Southland Aviculture Society	Bryson Road, Otatara	213 0530 (hm) 211 0413 (May Wk)

Lisa Stuart	642 Waituna Road, RD 3,Wyndham Also Edendale Vet Clinic	03 213 0644
Tracey Jennings (trained oiled wildlife responder formerly based in Canterbury)	127 Paterson St, Ingill	027 814 2257 & 2159360
National Personnel	**Organisation**	**Contact**
See National Plan		

The Department of Conservation's level of involvement will depend upon the stage of the response (i.e. early in the response or late in the response). There should always be an advisory capacity into the Incident Command Team through the Wildlife Advisor. It is likely that DOC will be heavily involved in any wildlife search and pickup, through the provision of equipment such as boats and trained personnel. However DOC's input to the actual cleaning of oiled wildlife will be restricted to triage. Any contact with the Department with respect to an oil spill response should be through the Wildlife Advisor in the first instance. They can be notified through the duty officer, Tel: 211 2400. A/h 0274 325 378.

2.7 Contact phone numbers – Responders & Advisors (other than Environment Southland staff)

Name		Business Phone	Private Phone	Other
Simon	Moran	0800 732 732	(03) 218 1984	027 221 8222
Stewart	Bull		(03) 234 8251	021 222 4643
Gail	Thompson, Iwi, Bluff & Motupohue Mataitai			021 409 463
Michael	Skerrett, Te Ao Marama Inc	931 1242		0274 479166
Dean	Whaanga, Te Ao Marama Inc	931 1242		021 2479166
Wynston	Cooper		(03) 217 5281	021 180 6662
Lloyd	Esler	(03) 213 0404		
Louise	Pagan	0800 732 732		027 426 2124
Ros	Cole	(03) 211 2400	(03) 205 3778	
Lindsay	Wilson, Conservation Services Manager (Biodiversity) Fiordland	(03) 249 0234		021 667672
Teri	McClelland	(03) 218 2599	(03) 230 4338	027 828 3913
Andy	Roberts	(03) 211 2400	(03) 217 8960	027 280 9186
John	Roderique (Port Maintenance)	(03) 212 7674	(03) 212 7076	027 240 7820
Michael	Skerrett	(03) 931 1242	(03) 217 6390	0274 479 166
Dean	Whaanga	(03) 931 1242	03 212 8888	021 247 9166
Dave	Yeowell	(03) 215 8898	(03) 215 8898	021 076 9111
John	Twidle	(03) 249 8711	(03) 249 4248	021 442 897
Brian	Sinclair	(03) 249 7916	021 221 0303	021 221 0303
Andrew	Welsh	(03) 249 9005		021 512 699

2.8 Advisors/Liaison Personnel (by function)

2.8.1 ***Advisors***

Advisory Role	Advisor	Contact Details
Incident Reports	RCCNZ	See 2.8.2
Response	Maritime NZ Duty Officer	See 2.8.2
Salvage	Maritime Oil Spill Duty Officer	See 2.8.2
Wildlife	Environment Southland Wildlife Co-ordinators DoC Wildlife Advisors Massey University	Gary Morgan, Teri McClelland. Jo Hiscock, Ros Cole. Lindsay Wilson See 2.7 above) (See National Plan)
Iwi & Ruapuke Islanders	Michael Skerrett, Stewart Bull, Dean Whaanga (Iwi), Gail Thompson	See 2.7 (Iwi) and See 2.12 for Ruapuke Islanders
Legal	Maritime NZ or Environment Southland solicitor	
Maritime/Nautical	Maritime NZ Marine Safety Inspector (MSI) or Environment Southland Harbourmaster	See 2.8.2
Fishing/Fishermen	Meri Leask or any other fishermen she suggests e.g. John Steffens (Fiordland)	See 2.8.2
Fisheries	Ministry of Fisheries, Alan Frazer	(03) 474 0333
Fiordland Environment	Fiordland Marine Guardians	Contact Secretary, Alison O'Sullivan 03 213 0248 or 021 250 4257.

2.8.2 ***Contact phone numbers – Miscellaneous Stakeholders***

Name	Business Phone	Private Phone	Other
Riverton Coastguard Chris Musgrave (Alternatively contact Ian Coard)	027 4378 234	027 4378 234	027 330 2031 (Travis Anderson) Headquarters (03) 234 8666 (03) 234 8937
Ian Coard (Riverton Harbourmaster)		(03) 234 8786	027 265 8504
Department of Conservation (Stewart Island)	(03) 219 0002		
Police (Stewart Island Police)	(03) 219 0020		
Maureen Jones (Stewart Island Fishermen's Radio)	03) 219 1242		

Name		Business Phone	Private Phone	Other
Meri	Leask	(03) 212 7281		0274 360 396
Ministry of Fisheries (Dunedin)		(03) 474 0333		
RCCNZ		(04) 577 8030		
Maritime NZ Oil Spill Duty Officer		(04) 473 6369		
Maritime NZ Duty Manager		(04) 499 3586		
Maritime NZ Maritime Officers (Invercargill)	Steve Hainstock Matthew Owen-Eales	(03) 748 1760 (03) 748 1760		027 836 1105 027 836 1632
Carol	Brown (Fiordland Fishermans Association & Fiordland Fisherman's Radio		03 249 9050 Fax 03 249 9088	0274 311 992
Maritime	Safety Inspector	(03) 212 8958		0275 244 201
Deep Cove Hostel Trust	Chairman: Paul Gay		03 217 5266 Fax 03 217 5261	021 2044 698 Bob Hughes (Alternate to Paul) 03 218 7655
Deep Cove Hostel Manager	0087 077 675 1930	Best means of contact is by Skype to "Deep Cove Hostel"		Email: 870776751930@msg.iridium.com
Marine Surveyor	Thomas Milne (See attachment overleaf)	03 454 4144	See 2.8.3	
Glen Hunter	Marine Surveyor	09 235 7757	See 2.8.3	027 592 9125

K M. HOWES & ASSOCIATES
MARINE & ENGINEER SURVEYORS
LOSS ADJUSTERS

Telephone (03) 454-4144
Facsimile (03) 454-4044

P O Box 300
Dunedin
New Zealand

Email-keith@kmhowes.co.nz

Office:
59 Silverton Street

The Manager
Environment Southland
Private Bag 90116
INVERCARGILL

ENVIRONMENT SOUTHLAND 03190
27 FEB 2006
File 202/03/02

23 February 2006

ATTENTION: Mr D Bradley

ear Sir

REFERENCE: CHANGE OF OWNERSHIP OF K M HOWES & ASSOCIATES

We are writing to advise you that the business of K M Howes has been purchased by Mr Thomas Milne.

The change of ownership will be effective as at 01 April 2006.

As a very valued client of K M Howes & Associates we shall be endeavouring to broaden and improve the value of the service that we provide to the industry, and to your business in particular, with the additional knowledge and skills that Tom Milne brings to the practice.

Until very recently Tom was sailing as a Chief Engineer Officer on large Australian bulk ships and, being an accredited DNV Chief Engineer Surveyor to carry out class surveys on board vessels, he is conversant with and has the many skills necessary to effectively manage the total operations of large vessels in the complicated marine environment.

riginally born in Scotland Tom completed his schooling to GCE level 4th year before emigrating to whyalla, South Australia.

As an indentured apprentice to BHP in their shipyard and steel making plant it was almost inevitable that he would go to sea at the conclusion of that training.

With BHP he gained his early experience with steam reciprocating engines and turbines on large bulk carriers before joining E&A Steamship Co on their passenger vessels.

Further experience on the same company's container vessels enabled him to complete sea time to gain his steam certificate and he then joined R W Miller, sailing on product and crude tankers to gain sufficient sea time to sit his 1st Class motor certificate.

Subsequent service sailing as Chief Engineer on Ro/Ro vessels with Holymans and ASP Ship

In this capacity he travelled to ports in China to undertake P&I Condition and follow up surveys, surveys and reporting for engine damages, typhoon damage, collision damage, cargo, container and contents damage, tanker outturns for fuel and edible oils, damages to harbour constructions, ferries and the like.

One interesting part of his work was to correct the English in the local surveyors' reports.

Tom then took up the position as Engineer Superintendent for a large Hobart based tug company, overseeing the maintenance and operation of the floating plant comprising 15 tugs, 7 barges, 5 work boats, 2 pilot vessels and a vehicular ferry.

During the tenure of this position he supervised the slipping of 12 of the company tugs, 4 barges and the vehicular ferry – which was of particular interest because it incorporated Voith Schneider propulsion units at each end of the vessel.

His other duties also included managing the marine engineering company servicing the tugs, foreign vessels (ice research and cargo ships) and visiting and local fishing boats and pleasure craft.

When the company restructured Tom moved to Gove (North East Arnhem Land) where he was the maintenance coordinator for the tugs, pilot boat, barge and harbour/ waterways equipment.

Tom then returned to sea as Chief Engineer in the large bulk ships of the company for whom he was working at the time he decided to relocate to New Zealand.

Together with his extensive experience afloat and ashore with a variety of vessel types, propulsion machinery and plant and cargoes carried, Tom has also engaged in the skills of auditing and has substantially completed the ISM Lead Auditors course requirements.

As soon as Tom and his family have had time settle in to the local scene we should expect to be contacting you with a view to arranging a suitable time to call and introduce the new Principal of K M Howes & Associates.

It is envisaged that Keith Howes will remain active in the business to assist Tom throughout the majority of 2006 and this should provide a seamless handover that will provide a better service for our clients.

We look forward to calling upon you at a mutually convenient time.

We take this opportunity to thank our many valued clients for the confidence that they have shown in our ability to provide them with our best endeavours and service and we should thoroughly recommend their continued patronage of Tom Milne in the ongoing conduct of this business.

Kind regards
Yours sincerely
K M HOWES & ASSOCIATES

From: Glen Hunter [mailto:huntermarine@xtra.co.nz]

Hunter Marine Surveying Limited



Glen Hunter
Surveyor
MIIMS, ANZIIF (Snr Assoc)

HUNTER MARINE
SURVEYING LTD

PO Box 421, Waiuku 2341, Auckland, NZ
Phone 09 235 7757 Mobile 027 592 9125 Fax 09 235 7767

2.9 Ministry of Fisheries Communications Centre

The Ministry of Fisheries Communications Centre monitors the movement of all New Zealand fishing vessels over 28 metres and all foreign charter fishing vessels regardless of length in New Zealand coastal waters.

The Centre can provide information on the location of vessels which can be useful for identifying vessels that may have been responsible for an oil spill.

Contact information:

Fax: (04) 801 5381
Phone: (04) 801 5782 (24 hrs)

Annex 2.10

NOTE: Contact the Consents/Compliance Administrator to obtain the most up to date contact information.

Alternatively Go to the "Consents" map under Beacon Maps on the Environment Southland website and use the "I" tool to bring up information about the consent and consent holder. Note however that not all water abstractors are consented – some abstraction occurs as a permitted activity but the associated structures may have a consent.

Annex 2.11

Deleted

Annex 2.12

Ruapuke Islanders Contact Details

Kaitiaki			
Name	**Landline**	**Mobile**	**Email**
Christine Young	03 230 4696	027 408 7349	christine.john@xtra.co.nz
David Bragg (Crockett)		027 512 7002	
Ricky Topi	03 212 8556		
Liz Wright	03 212 7048 (Home) 03 212 8663 (Work)		liz@bluffeng.co.nz
Peter Topi		027 433 1971	
Landowners			
Colin Topi	03 212 7001	027 442 9189	topi.co@xtra.co.nz
Russell Trow (West Point)	03 212 8356		

In the first instance contact Liz Wright, Christine Young and Colin Topi, who will then advise other Ruapuke Islanders and advise who is the most appropriate contact person/persons for Environment Southland to liaise with for the remainder of the response.

Christine Young and Ricky Topi are MPI appointed Tangata Tiaki for the area around Ruapuke Island. Tangata Tiaki may authorise any individual to take fishereies resources that are managed under the Fisheries Act 1996 for customary food gathering purposes.

Annex 3

Communications

3.1 Communications Resources

3.2 Communications Restraints

3.3 Marine Radio

3.4 Designated Channel

3.5 Remote Internet Connections

Attachments

1. Generic Emergency Response Email logons
2. Telecom Cellphone Network Coverage Maps
3. Vodafone Cellphone Network Coverage Map
4. Environment Southland VHF Net Coverage Map
5. Emergency Management Southland Civil Defence Network Coverage
6. Department of Conservation VHF Repeaters
7. Radio Frequencies Programmed into EMS Icom F3 Handheld Radios
8. Maritime NZ Tier 3 Oil Spill Response Radio Communication System
9. Ministry of Commerce Radio Spectrum Management – Marine Radio Information Booklet (see attachment no. 14 also)
10. Milford Sound Emergency Response Plan (Draft) Section 1, Annex 3 (Milford Sound Radio Telephone Communications and Frequencies)
11. Code of Practice for Commercial Tourist Vessels operating within Milford Sound Harbour Limits – Radio Channels and Radio Procedures
12. Department of Conservation – Single Side Band (SSB) Radios
13. Environment Southland Satellite Phone
14. Communications in Fiordland (see attachment Nos. 6 and 11 also)
15. Emergency Management Southland Radios
16. SDC HF Radio – programmed frequencies
17. Blank Page
18. Communications Plan template

3.1 Communication Resources

The Incident Command Centre is resourced with the following Communications:

- Landline Telephones (numerous)
- Facsimile
- Email (**see attachment 1 listing generic emergency response logons**)
- Cellphones (numerous) ***See Telco websites for coverage maps *NB: Fiordland & Stewart Island coverage is limited.***
- Civil Defence Car Radios (CD nets – Bluff and Mokoreta)
- VHF Ground to Air radio (base set)
- VHF Marine Radio[base set, 1 vehicle, 4 handhelds (see Harbourmaster) & ES Boats] ***See Section 3.3 also**
- VHF Southland Civil Defence Net (base set) operated by Environment Southland (Mokoreta repeater) *** See attached coverage map (attachment 5)**
- VHF Environment Southland Net (base set – Mid Dome Repeater) ***See attached coverage map (attachment 4)**
- Two Motorola GP 300 portable handheld radios (multifrequency);
  - Southland CD Net
  - Environment Southland Net
  - Simplex
  - Invercargill City Council CD Net
- Two Icom F3 portable handheld radios (multifrequency);
  - Southland CD Net
  - Southland CD Simplex
  - Environment Southland Net
  - Environment Southland Simplex
  - Marine VHF Ch 14, 16, 61, 65, 66, 68, 71, 74
  - Environment Southland Liaison
  - Dept of Conservation (Catlins, Longwoods, Rakehua and Te Anau repeaters *** See attached coverage maps (attachment 6)**
  - Ambulance (Bluff & Otautau repeaters)
  - Police Search & Rescue (portable repeater)
  - Police Search & Rescue simplex
  - Invercargill City Council CD Net
  - Fire Simplex (2 channels)

  The exact frequencies of the above channels are attached (**see attachment 7**).
- CD handhelds (numerous) ex ICC
- Two satellite phones (**attachment 13**).
- BGAN – phone and data capability anywhere
- Mobile PABX (10 lines)

The following communications maybe available to the ICC if required:

- MARITIME NZ Tier 3 oil spill response radio communication system (see attachment) – This system consists 10 Marine VHF/ES 5W handheld radios, 4 marine VHF 25W base stations, 4 marine ES 25W base stations and 3 portable repeaters. The system may be available on request from MARITIME NZ (**see attachment 8**).
- Ministry of Civil Defence & Emergency Management – Satellite Phones – The Ministry has a number of satellite phones that may be available on request. Contact the Christchurch office initially (03 379 0294).

- Department of Conservation satellite phones (2), Single Side Band and VHF radios including base, vehicle and handheld sets and a portable VHF repeater (**see attachment 12**). Contact Department of Conservation, Te Anau, phone (03) 249 0200 (Pania Dalley).
- Rural Fire & AREC Portable VHF Repeaters.

3.2 Communication Restraints

The method of communication used is dependant on the constraints imposed at the site of the spill. The preferred method is by cell phone. **Annex 4** outlines some constraints to communication or communication options at remote locations.

The attached maps (**attachments 4 and 5**) give an indication of VHF radio coverage. See the Vodafone and Telecom websites for the latest coverage maps for their cellular networks *NB: There is no cellphone coverage along the western Fiordland coast. Only the northern coast of Stewart Island has cellphone coverage*. In the remote parts of Fiordland and Stewart Island , satellite phone (see **attachment 13**), SSB and marine VHF may be the best option (see **Section 3.3 below**). Also refer to **attachments 10, 11 and 12** especially if operating in Milford Sound.

Radio coverage is generally limited by the location of repeaters and the power of the radios. In the absence of a direct link to a repeater, the possibility of using a "human repeater" i.e. a person on a high point with a simplex link to the spill ground and a link through a repeater or cellphone to the Incident Command Centre, should not be overlooked.

3.3 Marine Radio

There are various forms of Marine Radio communication in the region (see **attachment 14 or the NZ Marine Radio Handbook, p 82-87 held in the "Oil Spill Plans and related material" box on Dallas Bradley's shelves for VHF frequencies**)

- ***Additional VHF Channel*** – *new channel established since above handbook published*

VHF Channel 1	Used by Southland Commercial Fishermen's radio operator, Meri Leask. The transmitter is on Wednesday Peak (same as Ch 67).

In addition to the above information see the attached Ministry of Commerce Radio Spectrum Management Information booklet (attachment 9 although this is somewhat dated). The local Radio Spectrum contact is Paul Robinson (0508 776 463)

- ***Medium and High Frequency (M/HF)***

2182 kHz	An international distress, safety and calling frequency for radiotelephony. All ships licensed to operate in the marine frequency bands between 1605 kHz and 2850 kHz must be able to transmit and receive on 2182 kHz. Distress, urgency and safety calls should be made on this frequency.
2045/2444/4125/ 6215/6224	Various frequencies used by Southland Coast Stations (see Ministry of Commerce booklet – **attachment 9**).
8291	Alternative Taupo Maritime single side band frequencies, with extensive coverage of the coastal marine area. However,

	coverage does vary on the day depending on atmospheric conditions.
4417 kHz	Single side band radio frequency used by Bluff Fisherman's Network. This has extensive coverage of the coastal marine area, including the Sounds.
3336 kHz	DoC frequency (Ch 8) – See Attachment 12 for further details. Doc Radio Experts are Pania Dalley, Te Anau & Sue Larson, Invercargill.

3.4 Designated Channel

The channels of communication will be designated on the day as this will allow the Regional On Scene Commander to establish channels that fit the required response operation. All supporting organisations will use their own radio networks.

The chosen communications channels will be recorded on a Communications Plan. (See Attachment No 18 for a template).

Emergency Management Southland has staff trained in radio use that are available to man radios if required.

3.5 Remote Internet Connections

A number of options exist for connecting to the internet from a laptop at remote locations. These options include the following:

- Data capable cellphones (need cell phone reception) used as local WiFi hotspot;
- Vodems (borrow from IT)
- BGAN (Emergency Management Southland), satellite based.

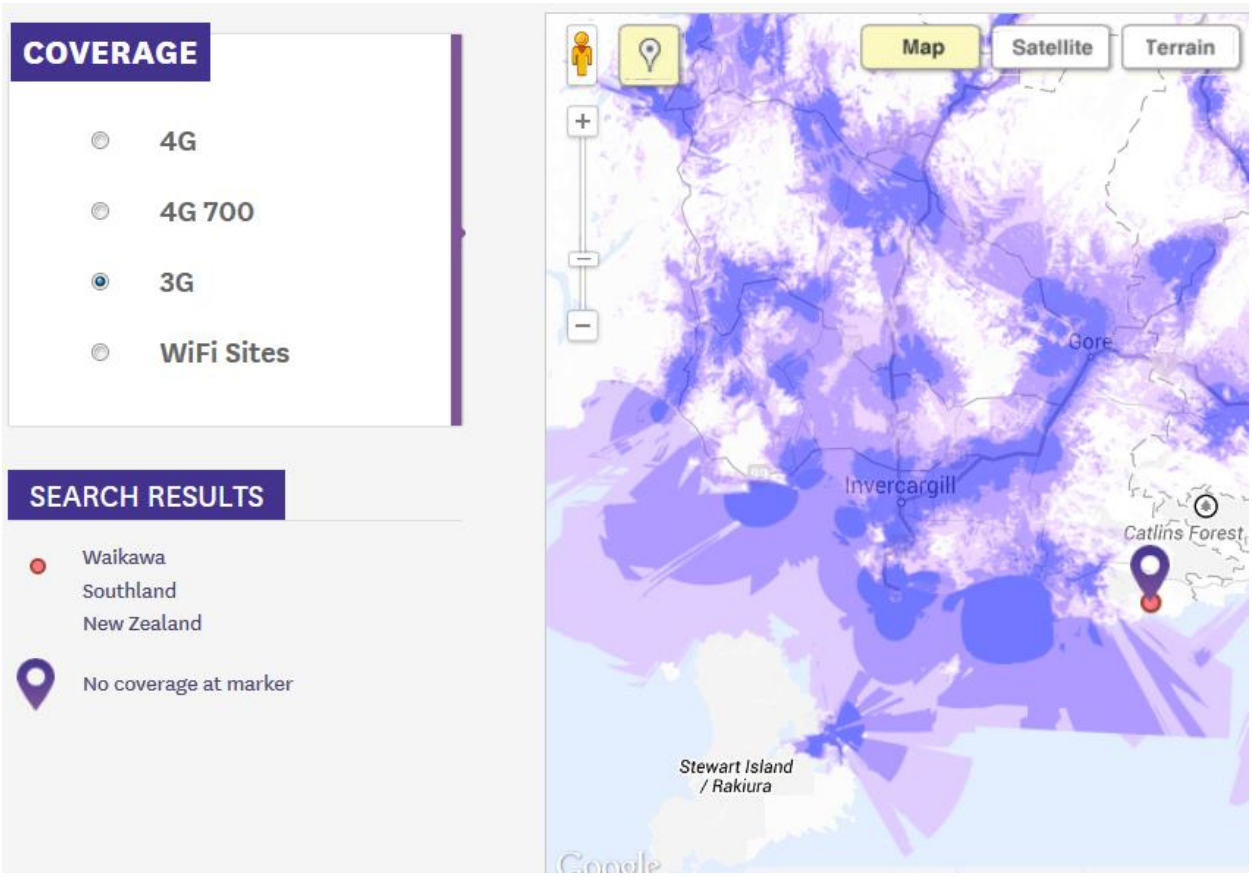
Attachment No 1

Generic Emergency Response email logons

Refer to the instructions at each work station within the Incident Command Centre (4 pods each containing 4 workstations.)

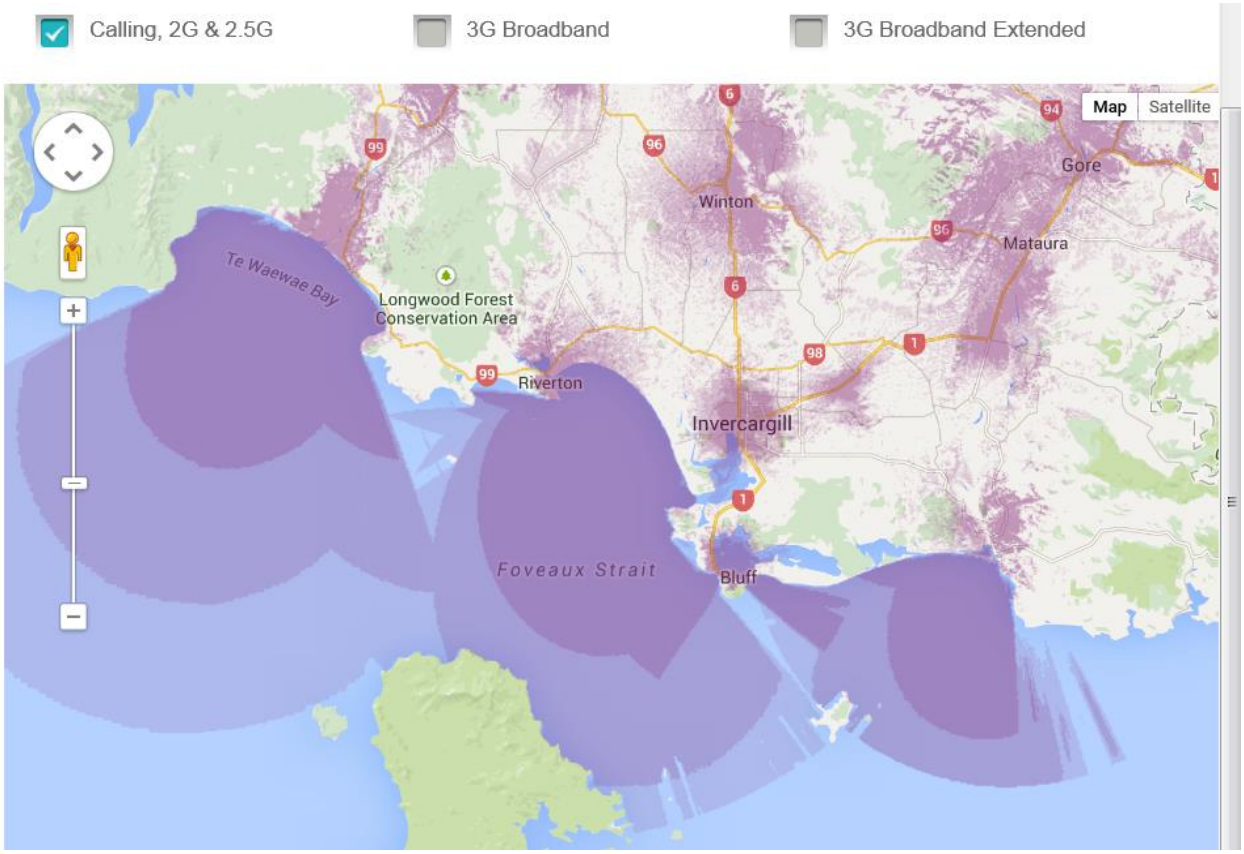
An alternative is to set up Gmail email accounts.

Spark Cellphone Network Coverage Maps – see Spark website for latest map

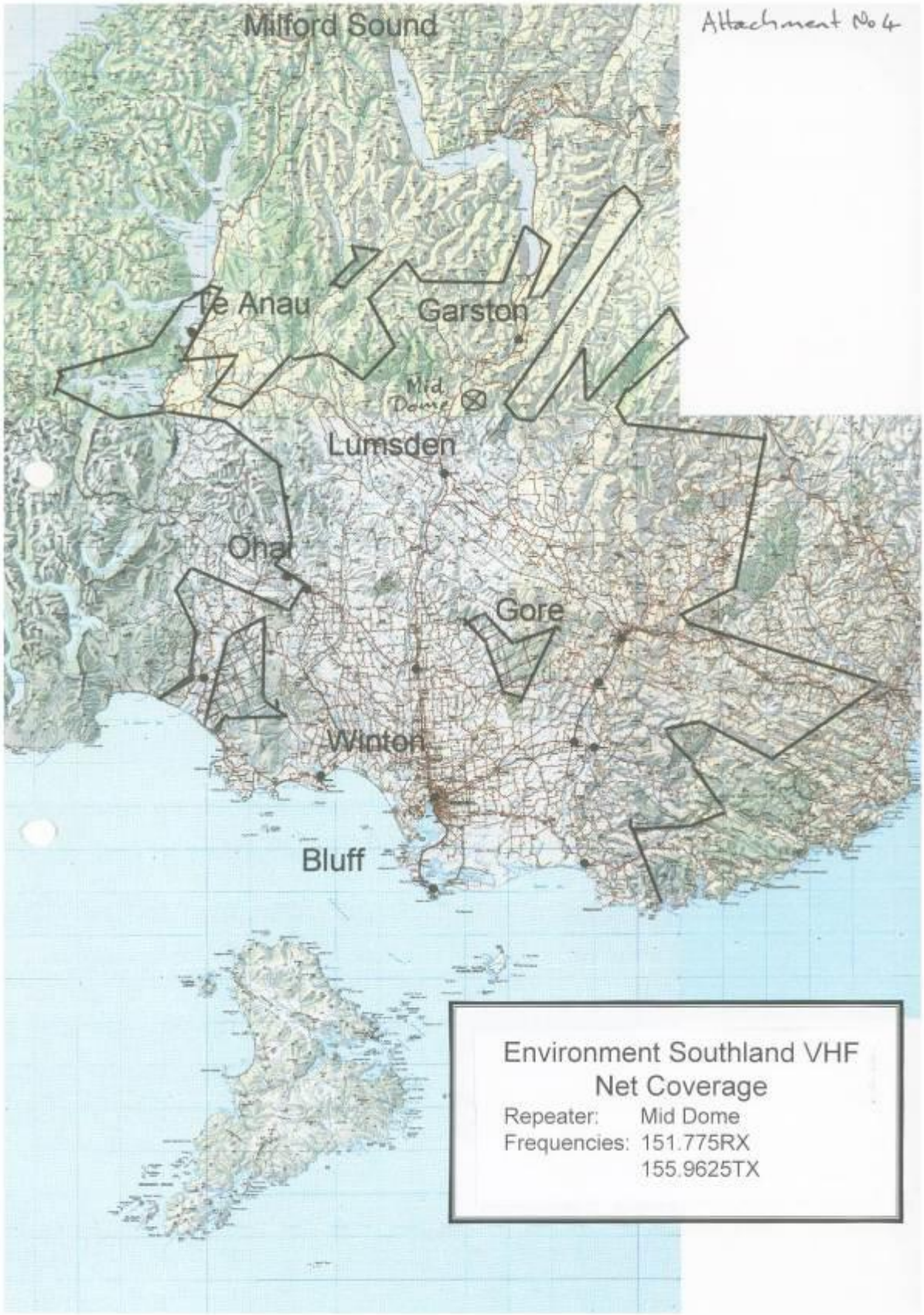


Attachment 3

Vodafone Cellphone Network Coverage Map – see Vodafone website for latest map.



Attachment 4



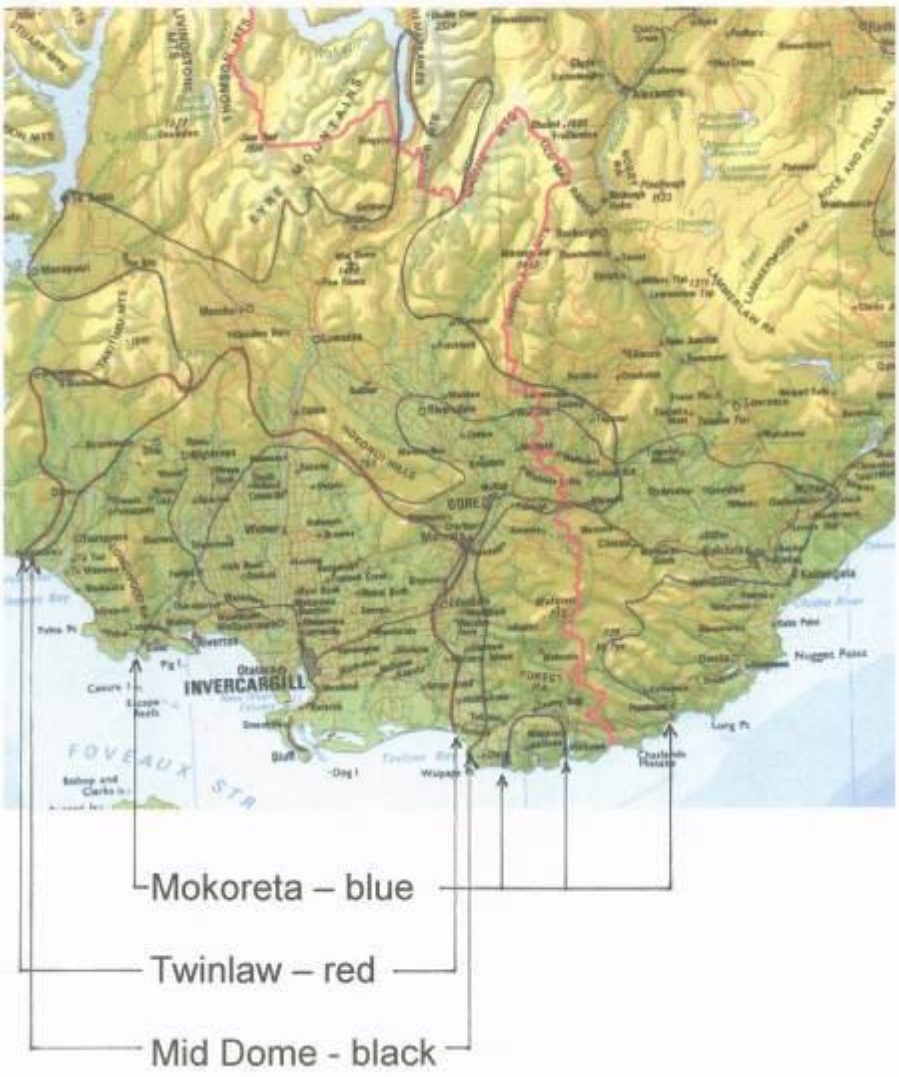
Attachment 5

Emergency Management Southland Civil Defence Network Coverage



Attachment 5a

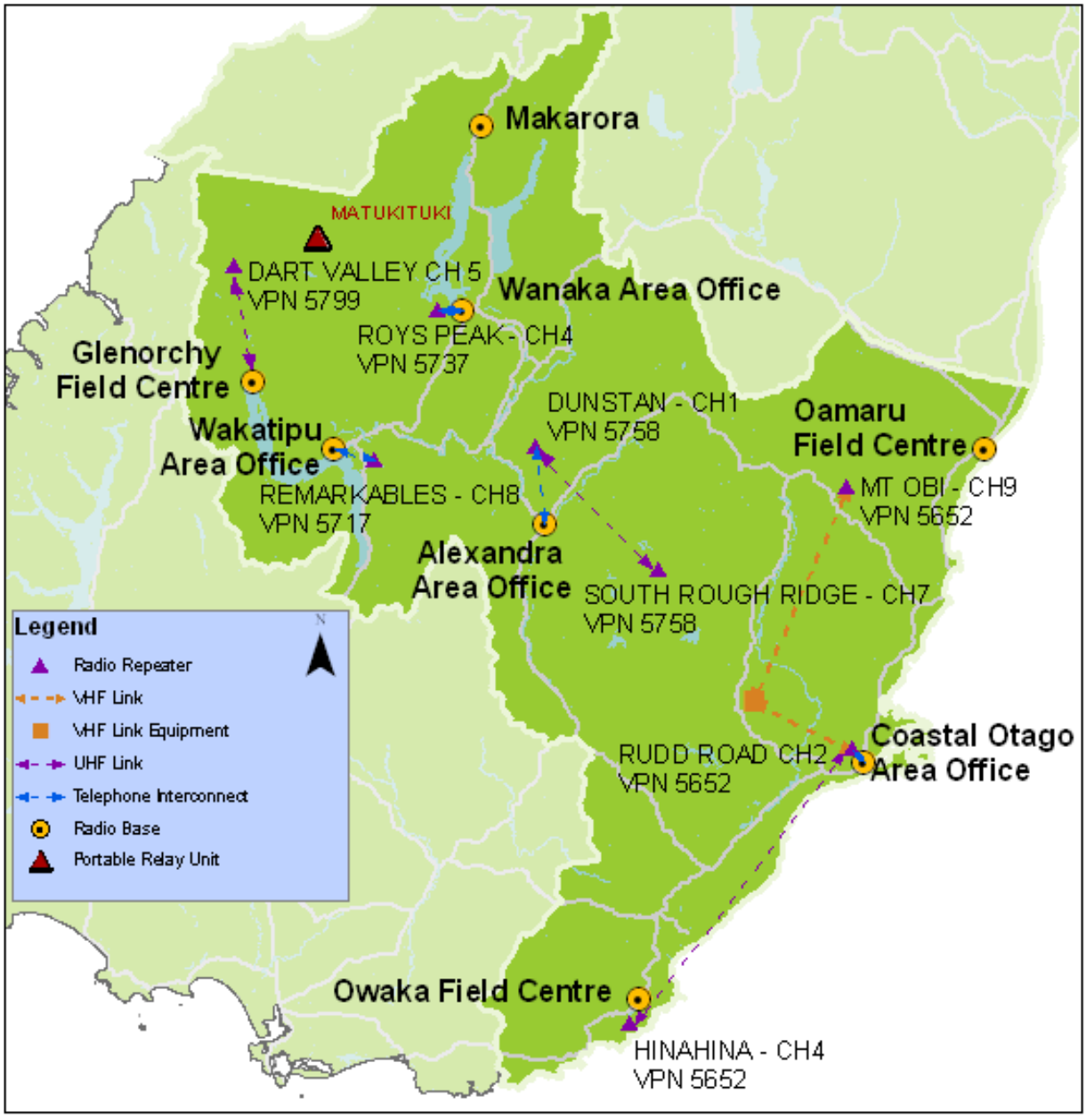
Map showing coverage of Mid Dome, Mokoreta and Twinlaw Repeaters



Southland


OCEAN PEAK CH 13
VPN 4887
MT PILLANS CH9
VPN 4889
5 MILE CH10
VPN 4889
MT IRENE
SECRETARY ISLAND - CH19
Te Anau
Workshop
Te Anau
Visitor Centre
MT HAMILTON CH2
VPN 4888
Resolution Island CH3
BLUE MOUNTAIN CH3
Tapanui
Fire Depot
BEATRICE PKS CH5
VPN 5947
LONGWOODS CH6
VPN 5946
Southland Cons./Southern Is
& Murihiku Area Offices
Murihiku Workshops
RAKEAHUA CH1
VPN 5980
Stewart Island/
Rakiura Field Centre
Legend
Radio Repeater
UHF Link
Telephone Interconnect
Radio Base
Portable Relay Unit

Otago


Makarora
MATUKITUKI
DART VALLEY CH 5
VPN 5799
Wanaka Area Office
ROYS PEAK - CH4
VPN 5737
Glenorchy
Field Centre
DUNSTAN - CH1
VPN 5758
Oamaru
Field Centre
Wakatipu
Area Office
REMARKABLES - CH8
VPN 5717
MT OBI - CH9
VPN 5652
Alexandra
Area Office
SOUTH ROUGH RIDGE - CH7
VPN 5758
Legend
Radio Repeater
VHF Link
VHF Link Equipment
UHF Link
Telephone Interconnect
Radio Base
Portable Relay Unit
RUDD ROAD CH2
VPN 5652
Coastal Otago
Area Office
Owaka Field Centre
HINAHINA - CH4
VPN 5652



7. Radio Frequencies programmed into Emergency Management Southland Icom F3 Handheld Radios

Bank 1

Channel	Dial Shows	RX Frequency	TX Frequency	CTSS	Type
1	CD18RE	149.825	148.4375		Duplex
2	CDRE SX	148.900			Simplex
3	SRC Net	151.775	155.9625		Duplex
4	SRC Sim	151.775			
5	CD ICC	149.45	148.0625		Duplex
6	CD GDC				
7	Mar 14				Duplex
8	Mar 16				Duplex
9	Mar 61				Duplex
10	Mar 65				Duplex
11	Mar 66				Duplex
12	Mar 68				Duplex
13	Mar 71				Duplex
14	Mar 74				Duplex

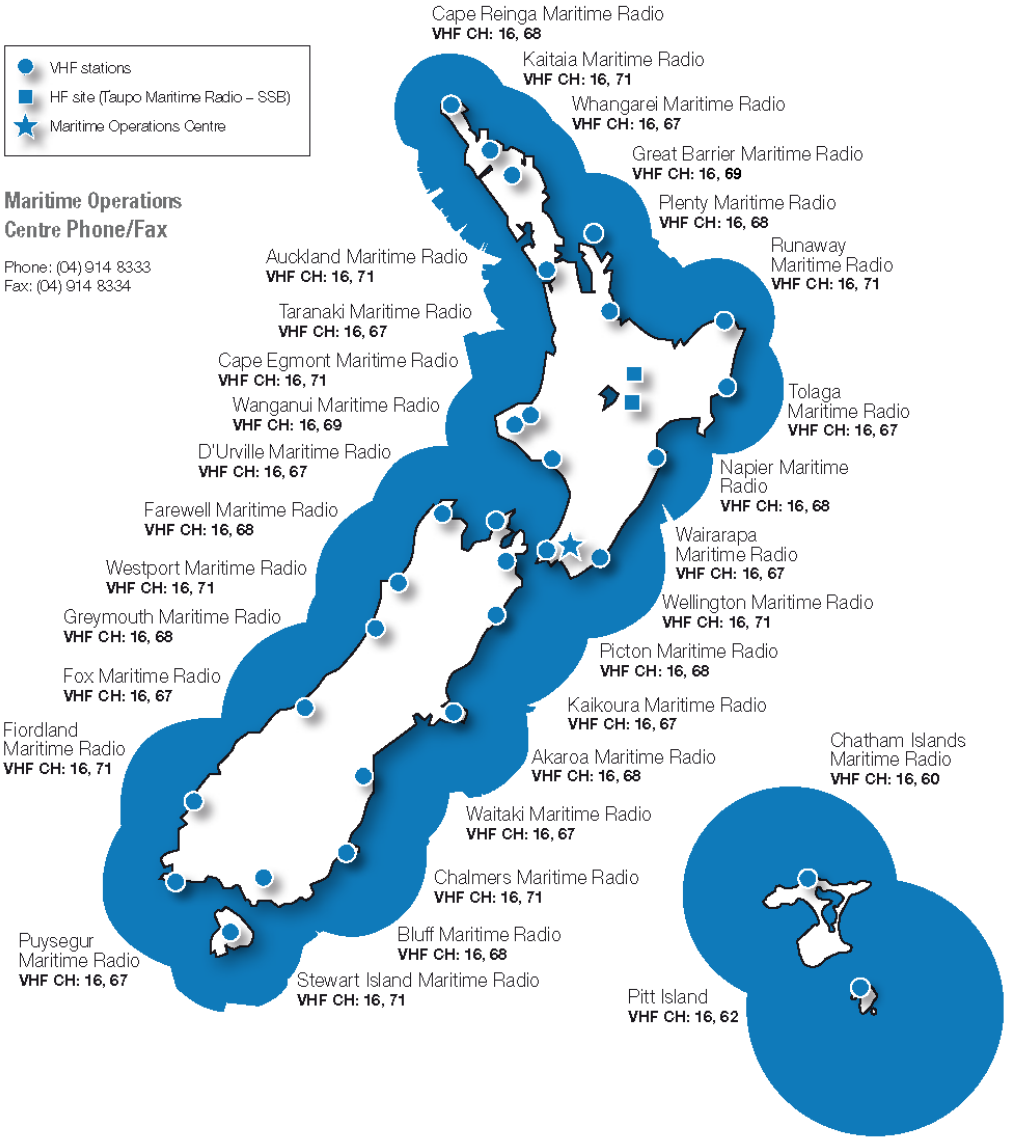
Bank 2

Channel	Dial Shows	RX Frequency	TX Frequency	CTSS	Type
1	DOCSTE	142.450	139.450	151.4	Duplex
2	DOCTEA	142.4625	139.4625	151.4	Duplex
4	DOCCAT	142.4875	139.4875	151.4	Duplex
6	DOCLWO	142.5125	139.5125	151.4	Duplex
7	ESLIAS	140.9875			Simplex
8	ESAMBO	141.325	138.325	173.8	Duplex
9	ESAMBB	141.3375	138.3375	173.8	Duplex
10	EXFIR1	143.825			Simplex
11	EXFIR2	143.7875			Simplex
12	EXPOL	143.6625			Simplex
13	ESPOL	141.7125	138.7125		Duplex

Attachment No 8

https://www.maritimenz.govt.nz/

Maritime Radio VHF coverage



Note: gaps in coverage may exist within the areas shown, due to terrain 'shadows' (which can occur under cliffs close to the shore or in bays and fiords) and occasional system maintenance.

MSA

MARITIME RADIO SERVICES

SPECIFICATION FOR THE DESIGN AND SUPPLY OF A TIER 3 OIL SPILL RESPONSE RADIO COMMUNICATION SYSTEM

CONTENTS

1. GENERAL
   - 1.1 Scope
   - 1.2 Deliverables

2. SYSTEM DESCRIPTION & REQUIRED SUPPLY
   - 2.1 General
   - 2.2 System Description
   - 2.3 Maritime Frequencies
   - 2.4 Bill of Materials
   - 2.5 Equipment Specifications
   - 2.6 Power Supply & Earthing
   - 2.7 Transport cases
   - 2.8 Lightning Protection
   - 2.9 Testing & Commissioning
   - 2.10 Packaging and Freight
   - 2.11 Risk

2.2 System Description:

2.2.1 The radio communication system has four communications components, (a) a maritime VHF radio, (b) a maritime ES band radio, (c) a Department of Conservation ES band radio and (d) an aeronautical radio. Refer to MSA drawing T3OSR-PJ-001-DR 1 attached.

2.2.2 The Shoreline Ops team member (beach head) will be as the key user of the radio communication system, requiring access to the Incident Command Centre (ICC), support vessels (at sea), support and spotter aircraft and the supporting Department of Conservation wildlife service.

The ICC will be positioned in a nearby town or location, that has access to the existing telecommunications infrastructure using phone, fax, email and any available regional radio facilities.

Oil spill communications will be achieved by primarily using the maritime ES radio. Aeronautical radio is provided mainly in a monitoring role, as communication with aircraft would be normally via air traffic control or other approved controller (who may be stationed at ICC).

2.2.3 The maritime ES band repeater will provide coverage of the incident area for communication from the Shoreline Ops back to ICC, and to wildlife operators.

2.2.4 The Shoreline Ops will have access to maritime VHF and ES bands on one transceiver. This can be programmed to scan/listen on any desired channels. i.e. ChM67,16,6, ES9, ESX9.
The Shoreline Ops will have the ability to communicate directly with ICC, Wildlife operators, Support vessels, aeronautical and sea.

2.3 Maritime frequencies

MSA has the licences for the service from Ministry of Commerce and are listed in Appendix A.

Item	QTY	Unit Price	Total Price
Marine VHF / ES Hand Held Radio 5 W	10		
Heavy duty Carry case	10		
Audio Adapter with remote mike	10		
Spare battery	10		
Intrinsically Safe Handheld Batteries	4		
Aeronautical Handheld Radio	2		
Spare battery	2		
Marine VHF base station 25W	4		
Marine ES base Station 25W	4		
Marine VHF Aero station 5w	2		
Maritime / DOC ES crossband repeater 5w complete with carry cases, antennas and poles	3		
Aeronautical base Station	2		
Battery charger for Hand Helds	12		
Base station Marine VHF Antenna ½ λ	4		
Base station ES Antenna ½ λ	4		
Base station Aero Antenna ½ λ	2		
Pole for Base station	8		
Repeater Battery case	3		
Transport case for 12 hand helds	1		
Transport case for base station	10		
Transport case for poles and antennas	2		
Tool kits	3		
Power supply cables and connectors set	16		
Set of Manuals and documents	1		

2.5.2 Specification for FM radio Portable Repeater with additional cross band Relay capability.

The repeater is to be used in service with the ES band hand held radios to provide extended operational range and also to provide access to other repeaters which link to DOC services or to the Incident Command Centre.

2.5.2.1 Operational requirements

- Provide conventional Portable Repeater service on the Emergency Services channel ES9 or any designated DOC repeater channel such as ES164.
- Provide a Relay capability between the scene of incident and the DOC liaison channel ES164 or any one of the DOC fixed repeater channels ES116 – ES124. Provide in the channel allocation for the Relay, to be set up to use the Maritime VHF channels, in particular MM Ch 67, 68,71. Reverse repeater capability shall also be provided.
- Output power level of 5w.
- Channel selection capability available to technical support personnel.
- Remote DTMF controlled enable/disable selection of the Relay function.
- Relay provided with DTMF encode function to activate and deactivate relay.
- Low voltage alarm and/or low voltage disconnect to be considered.

2.5.2.2 Physical characteristics

- Basic unit to be compact and light enough to be deployed from a back pack if required.
- Weight no greater than 20Kg per module.
- External dimensions no greater than 500mm(w) x 403mm(d) x 195mm(h) for repeater, and the container for the poles no longer than 1000mm long.
- Water proof and impact resistant.
- Modular design with separately boxed additional battery module, mast and antenna kit designed for transportation and assembly.
- Uncomplicated and well labeled user controls and instructions.

MSA

Appendix A Frequency Schedule

MSA MEPD Channel Frequencies	Designation	Function	Base TX	Mobile TX
	ES9	MSA Network Repeater	141.11250	138.11250
	ESX8	MSA Simplex	141.60000	141.60000
Frequencies and contact information for Life Flight Trust is as follows:-		Wrights Hill ES Ch34 CTCSS 203.5	Tx 138.425	Rx 141.425
DoC				
Channel Number	Designation	Channel Function	Mobile	Mobile
		Mobile	Tx Freq	Rx Freq
1	ES 116	Network Repeater	139.45000	142.45000
2	ES 117	Network Repeater	139.46250	142.46250
3	ES 118	Network Repeater	139.47500	142.47500
4	ES 119	Network Repeater	139.48750	142.48750
5	ES 120	Network Repeater	139.50000	142.50000
6	ES 121	Network Repeater	139.51250	142.51250
7	ES 122	Network Repeater	139.52500	142.52500
8	ES 123	Network Repeater	139.53750	142.53750
9	ES 124	Network Repeater	139.55000	142.55000
10	ES 164	Portable Repeater	140.05000	143.05000
11	ESX 4	ESB General Simplex	140.55000	
12	ESX 39	ESB Liaison Simplex	140.98750	
Maritime Mobile	Designation		Ship	Coast
	MM 1		156.0500	160.6500
	MM 2		156.1000	160.7000
	MM 3		156.1500	160.7500
	MM 4		156.2000	160.8000
	MM 5		156.2500	160.8500
	MM 6		156.3000	156.3000
	MM 7		156.3500	160.9500
	MM 8		156.4000	156.4000
	MM 9		156.4500	156.4500
	MM 10		156.5000	156.5000
	MM 11		156.5500	156.5500
	MM 12		156.6000	156.6000
	MM 13		156.6500	156.6500

MSA

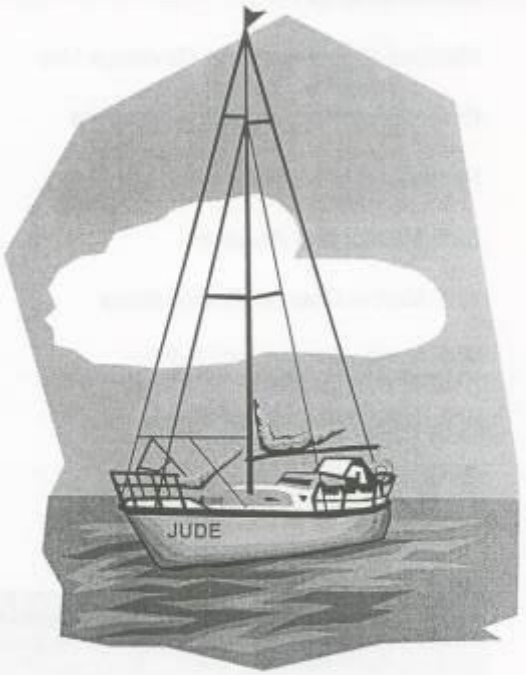
Maritime Mobile	Designation		Ship	Coast
	MM 14		156.7000	156.7000
	MM 15		156.7500	156.7500
	MM 16		156.8000	156.8000
	MM 17		156.8500	156.8500
	MM 18		156.9000	161.5000
	MM 19		156.9500	161.5500
	MM 20		157.0000	161.6000
	MM 21		157.0500	161.6500
	MM 22		157.1000	161.7000
	MM 23		157.1500	161.7500
	MM 24		157.2000	161.8000
	MM 25		157.2500	161.8500
	MM 26		157.3000	161.9000
	MM 27		157.3500	161.9500
	MM 28		157.4000	162.0000
	MM 60		156.0250	160.6250
	MM 61		156.0750	160.6750
	MM 62		156.1250	160.7250
	MM 63		156.1750	160.7750
	MM 64		156.2250	160.8250
	MM 65		156.2750	160.8750
	MM 66		156.3250	160.9250
	MM 67		156.3750	160.9750
	MM 68		156.4250	161.0250
	MM 69		156.4750	161.0750
	MM 71		156.5750	161.1750
	MM 72		156.6250	161.2250
	MM 73		156.6750	161.2750
	MM 74		156.7250	161.3250
	MM 75		156.7750	161.3750
	MM 76		156.8250	161.4250
	MM 77		156.8750	161.4750
	MM 78		156.9250	161.5250
	MM 79		156.9750	161.5750
	MM 80		157.0250	161.6250
	MM 81		157.0750	161.6750
	MM 82		157.1250	161.7250
	MM 83		157.1750	161.7750
	MM 84		157.2250	161.8250
	MM 85		157.2750	161.8750
	MM 86		157.3250	161.9250
	MM 87		157.3750	161.9750
	MM 88		157.4250	162.0250

Radio Spectrum Management Offices

Office	Address	Telephone	Facsimile
WHANGEREI	PO Box 449	(09) 438 8491	(09) 438 8663
AUCKLAND	PO Box 68 217 Cnr Newton Rd & Abbey St Newton	(09) 360 3500	(09) 378 8344
HAMILTON	PO Box 982 512 Grey Street	(07) 834 2958	(07) 834 2960
ROTORUA	PO Box 847 9 Haupapa St	(07) 346 0370	(07) 346 0372
TAURANGA	PO Box 846	(07) 834 2958	(07) 577 6750
NAPIER	PO Box 4162 Cnr Kennedy Rd & Nuffield Ave Marewa	(06) 843 5829	(06) 843 5827
NEW PLYMOUTH	PO Box 217 3 Gover Street	(06) 758 8139	(06) 758 8137
PALMERSTON NORTH	PO Box 5063 328-330 Broadway Ave	(06) 356 6710	(06) 356 9110
WELLINGTON	PO Box 31 433 70 Bloomfield Terrace Lower Hutt	(04) 566 5537	(04) 566 5853
NELSON	PO Box 997 42 Halifax Street	(03) 548 2446	(03) 546 9293
CHRISTCHURCH	PO Box 8562 B/52 Mandeville Street	(03) 343 1240	(03) 343 1219
DUNEDIN Paul Robinson	PO Box 5647 12 Hanover Street	(03) 477 1125	(03) 474 0450
INVERCARGILL	PO Box 247	(03) 214 4582	(03) 218 4582

MARINE RADIO

Information Booklet



COMMERCE

Te Manatū Tauhokohoko

Ministry of Commerce
Radio Spectrum Management

OTAGO/SOUTHLAND

December 1999

COMMUNICATIONS DIVISION

December 1999

Attachment 9
210/1/4
0263

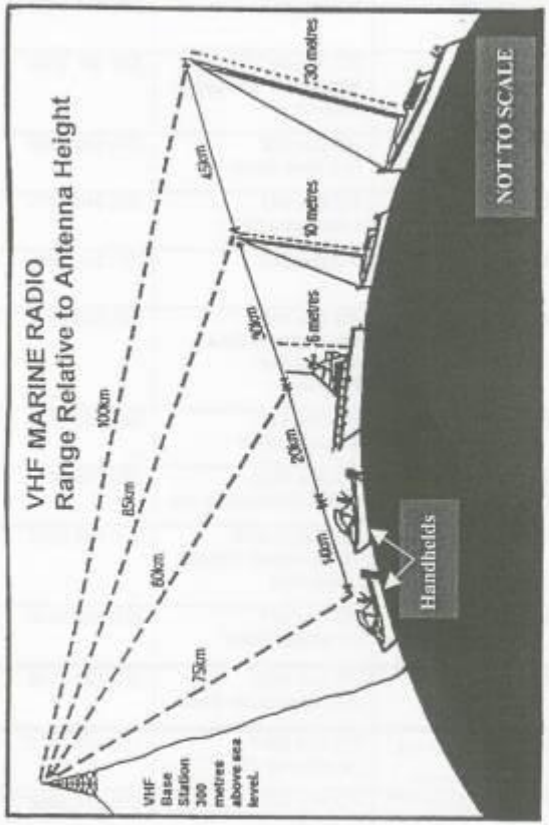
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VHF Marine Explanatory Notes	10
VHF Transmitter Range Chart	11
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Disclaimer: Information in this booklet is subject to change without notice. The Crown does not accept any liability for damage or loss arising from reliance on any information contained in this document.

Any questions you may have on the information contained in this booklet should be referred to the nearest Radio Operations Field Office of the Ministry of Commerce listed on the back page.

This booklet replaces previous issues and is supplementary to the information contained in the Small Ships Radiotelephone Service General Instructions booklet (PIB 7).



Otago and Southland VHF Coast Stations

NAME & ADDRESS	VHF	SSB	CALLSIGN	SCH TIMES
Oamaru Marine	62/64*		**Oamaru Marine Radio** Operator: Marion Wilson Ph. 03 434 7245	VHF Open
Moeraki SMCRA MOERAKI	**62/64***, 61, 10	2045, 2480, 4125, 4417	**Moeraki Marine Radio ZMH59** Op: John McLellan Ph. 03 4394 772	0710 1215 1830 VHF Open
Port Otago DUNEDIN	**16**, 14, 62/64*	**2182**, 2012, 2162, 2129, **4125**, 4146, 4417 **6215**, 6224, **8255**, 8291, 8297 **12290**, 12356, **16420**, 16528	**Taiaroa Heads Radio ZMH32** Ph. 03 472 7890	C O N T I N U O U S
Port Chalmers Fishermen'sCo-op Society DUNEDIN	62/64*	2045, 2444, 2480, 4125, 4417	**Port Chalmers Fishermen's Radio** Ph. 03 472 8918	0700 1900 CONT 0900 - 1700
Taieri Marine Radio Taieri Mouth OTAGO	16, **62/64***	2182, 4125	**Taieri Marine Radio** Op: Keith & Heather Simon Ph. 03 481 7805	0710 1215 1830 VHF Open
Nugget Marine	**64/62*** 72		**Nuggets Marine Radio** Operator: Barry & Loraine Bethune Ph. 03 412 8846	VHF Open

* Linked Repeaters

Safe Microphone Practice



Do you have one of these.....



Or one of these.....



Then be careful where you put this..

The greatest cause of channel congestion is poor microphone location. Jammed microphones make the channel unusable. Keep yours attached to its clip when its not being used.

HANG IT UP!

And remember:

- ☺ ALL Marine SSB Transceivers need a radio licence
- ☺ A General Licence covers all VHF Voluntary Equipped Vessels
- ☺ All Operators of Marine Radios need an Operators Certificate

VHF MARINE RADIO EXPLANATORY NOTES

1. If your VHF marine radio has USA/INT (international) switching, be sure to select INT for NZ operation. Not all USA channels are compatible with international channels.

2. Use low power when transmitting close to other vessels or repeater sites. High Power transmissions can result in "splatter" occurring in adjacent channels. **The rule is: LOW POWER FOR LINE OF SIGHT CONTACT.**

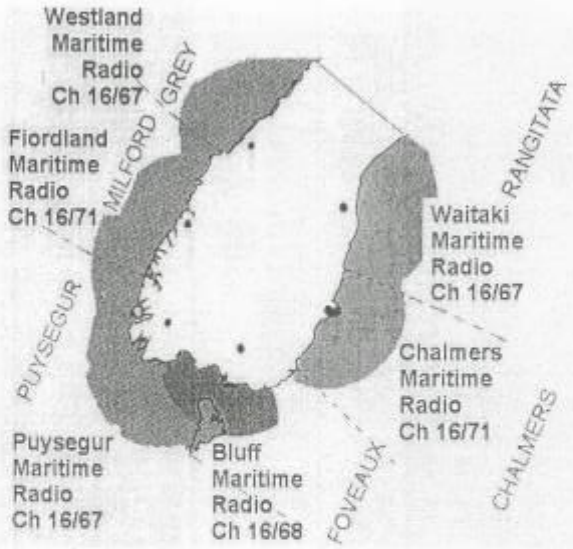
3. VHF coverage is basically line of sight. Range is extended by the use of repeaters at high positions. These sites have a good "view" and so offer good VHF coverage. The repeater receives your signal then retransmits it, resulting in an extended range for your transmission.

4. You must be within range (line of sight) of a repeater to contact any other station (Ship or shore) on that channel. Once out of range no one can hear your transmission on the repeater channel, even if they are positioned close to you.

5. Non-repeater channels are called SIMPLEX channels. Simplex channels transmit and receive on the same frequency and are limited to line of sight coverage. Note that the Distress and calling channel 16 is simplex. Maritime Safety Authority (MSA) stations are positioned at high locations to offer extended coverage on channel 16. These MSA channels are monitored (24Hrs) by Chalmers, Bluff, Puysegur, Fiordland, and Westland Maritime Radio operators located at Lower Hutt.



Maritime Safety Authority and Coastal Forecast Areas



Channel 16 - Listening/Emergency
Channel 67/68/71 - Weather Bulletin/Working Channels

Otago and Southland VHF Coast Stations cont.

NAME & ADDRESS	VHF	SSB	CALLSIGN	SCH TIMES
Fiordland Fishermen's Radio Association TE ANAU	66, 64	2045, 4417, 2444, 2480	**Fiordland Fishermen's Radio** Operator: Carol Brown Ph. 03 249 7402	VHF Open SSB 0800 -0830 1900-1930
Milford Sound	14,16		**Harbour Control**	0830-1700
Neills Beach HAAST	60	2045, 2480, 4125, 4417, 5467	**Jackson Bay Radio ZMH95** Operator: Geoff & Pat Robson Ph. 03 7500 844	CONT VHF

VHF MARINE CHANNEL DESIGNATIONS

(All assigned in New Zealand)

Channel	Usage
16	Distress, safety and calling channel. All VHF marine radios must be able to transmit and receive on this channel.
9, 10, 11, 12, 13, 14,	Harbour and port operation communications.
21, 23	Automatic weather information. **
2, 24, 25, 26, 27,	Telecom Sealink Service. **
1, 3, 4, 5, 28, 60,61, 62, 63, 64, 65, 66, 78	Repeater channels.

Channel	Usage
68, 67, 71, 74	Working channel for navigational warning, weather reports etc.
73	Marina working channel.
17, 77	Aquatic sporting events working channels.
84, 85, 86, 87, 88	Rescue organisation ** repeater channels.
69	Surf Life Saving.
6,8	For Inter-ship working

CHANNEL ASSIGNMENT NOTES

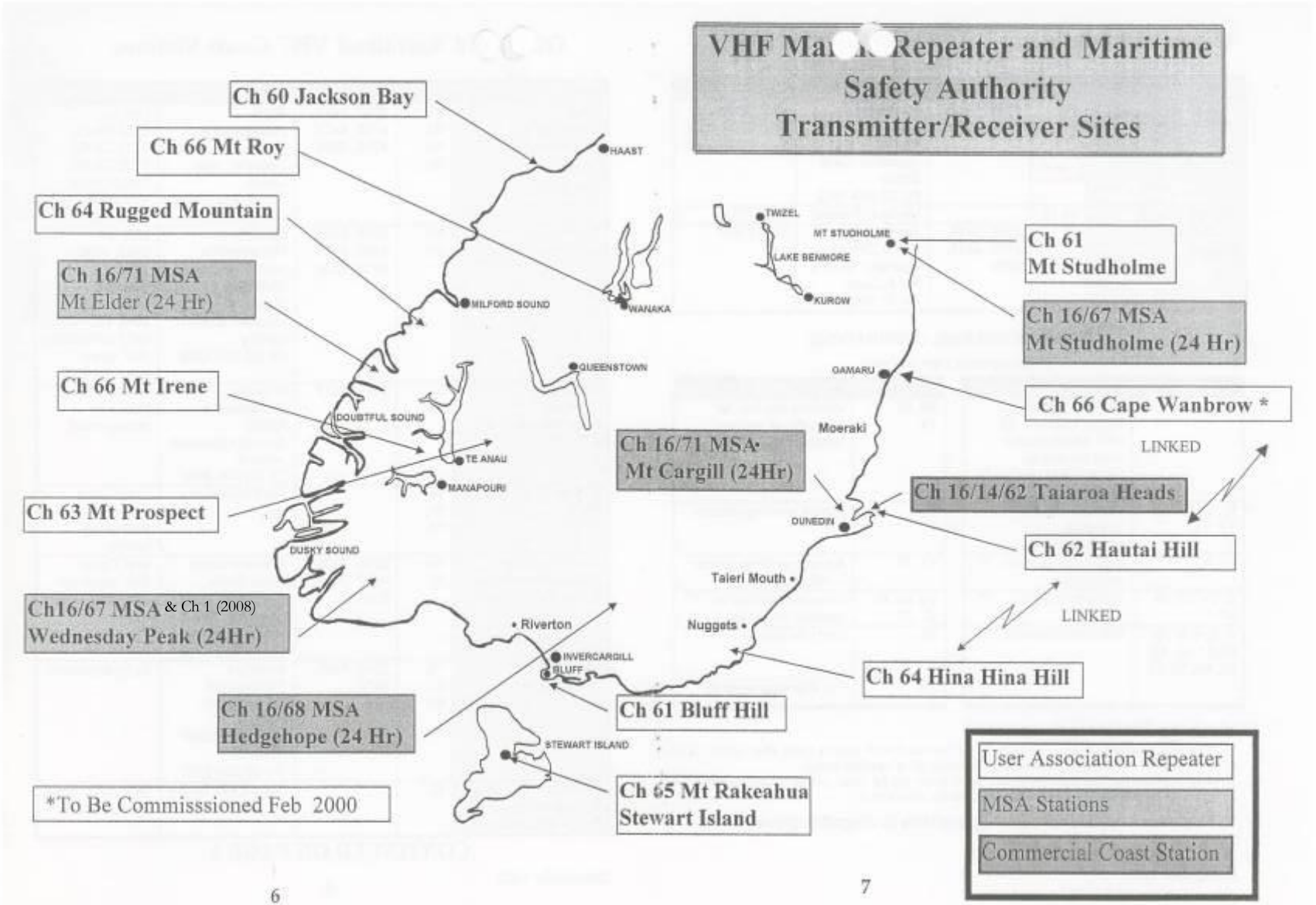
1. The above channels are included on the standard VHF marine radio ship station licence.
2. You should note each channel is designated for a specific usage.
3. Any channel not listed in the above table must not be used unless a licence has been granted by the Ministry of Commerce, Radio Operations.

** **These services are not currently available in Otago/Southland.**

Otago and Southland VHF Coast Stations

NAME & ADDRESS	VHF	SSB	CALLSIGN	SCH TIMES
Southland Commercial Fishermen's Radio BLUFF	61, 63, 65, 66, 1	2045, 2444, 4125, 4417, 4215, 6224	**Bluff Fishermen's Radio** Operator: Meri Leask Ph. 03 212 7281 Cell 025 360 396	VHF wx 0705 Ch 61 0710 Ch 65 0730 Ch 63 Watch times VHF/SSB 0700 - late
Southland Fishermen's Radio BLUFF	61, 65	2045, 2444, 4125, 4417, 6215, 6224	**Southland Fishermen's Radio** (Known as ZMH304) Operator: Maureen & Brent Harvey Ph. 03 214 1249	SSB wx 0925, 1200, 1725 Sked's 0900 -1000 2045 1930-2010 4417 2010-2030 VHF times: same as SSB
Southland Commercial Fishermen's Radio BLUFF	61, 65	2045, 4417	**Riverton Fishermen's Radio** Operator:Maureen Jenkins Ph. 03 234 8985	Auxiliary Base Com's by arrangement
Southport NZ Ltd BLUFF	16, 61, 65		**Bluff Harbour Radio**	Continuous except when staff doing rounds
Stewart Island Fishermen's Radio STEWART ISLAND	65, 61	2045, 4125, 4417, 6224, 6215	**Stewart Island Base Radio** (Known as ZLRZ) Operator: Ted & Maureen Jones Ph. 03 219 1242	VHF Open SSB watch on 4417 from 0800 - 2030
Riverton Coastguard RIVERTON	16, 61, 65,	2045, 4125, 4417	**Riverton Coastguard** Contact Noel Anderson Ph. 03 234 8937 Ian Cord Ph. 03 234 8786	By arrangement
Deep Cove Outdoor Education Trust INVERCARGILL	10		**Deep Cove Radio**	0830-1730 or by arrangement

CONTINUED ON PAGE 8


VHF Mar[illegible] Repeater and Maritime Safety Authority Transmitter/Receiver Sites
Ch 60 Jackson Bay
Ch 66 Mt Roy
Ch 64 Rugged Mountain
Ch 16/71 MSA Mt Elder (24 Hr)
Ch 66 Mt Irene
Ch 63 Mt Prospect
Ch16/67 MSA & Ch 1 (2008) Wednesday Peak (24Hr)
Ch 16/68 MSA Hedgehope (24 Hr)
*To Be Commisssioned Feb 2000
Ch 61 Mt Studholme
Ch 16/67 MSA Mt Studholme (24 Hr)
Ch 66 Cape Wanbrow *
LINKED
Ch 16/14/62 Taiaroa Heads
Ch 62 Hautai Hill
LINKED
Ch 64 Hina Hina Hill
Ch 61 Bluff Hill
Ch 65 Mt Rakeahua Stewart Island
Ch 16/71 MSA Mt Cargill (24Hr)
HAAST
MILFORD SOUND
WANAKA
QUEENSTOWN
DOUBTFUL SOUND
TE ANAU
MANAPOURI
DUSKY SOUND
Riverton
INVERCARGILL
BLUFF
STEWART ISLAND
TWIZEL
MT STUDHOLME
LAKE BENMORE
KUROW
OAMARU
Moeraki
DUNEDIN
Taieri Mouth
Nuggets
User Association Repeater
MSA Stations
Commercial Coast Station
6
7

MILFORD SOUND OPERATIONS CENTRE RADIO TELEPHONE COMMUNICATIONS AND FREQUENCIES

1. **Communications With Te Anau Sector Civil Defence Headquarters**

Radio communications with Te Anau Sector Headquarters will be by:

2. **Radio Call Signs**

The Te Anau Sector call sign is: Te Anau Civil Defence.
The Milford Sound Operations Centre call sign is: Milford Sound Civil Defence.

3. **Frequencies**

Department of Conservation

SSB	3336	Operations: day	
	4880/2348	National: day/night	
	4619	Regional: day	
	5680/3023	Search and Rescue: day/night	
	3261	Mountain Radio	
	3162	CLE	
	4442	Travelodge	
VHF	ESX4 Simplex	Operations: day	
	ES117 Mount Hamilton repeater	Operations: day	Transmit Receive

Southland District Council

Fiordland Helicopters

SSB	4964	Operations: day	
VHF	1192 Aviation	Homer Tunnel area	

Southern Lakes Helicopters

SSB	5047	Marine and aeronautical		
VHF	1192 Aviation:	Homer Tunnel area		
E131			Transmit	154.15625 MHz
			Receive	152.37500 MHz
Mount Irene repeater			Transmit	153.93125 MHz
			Receive	152.150 MHz

South West Helicopters

SSB	3915	Operations: day		
VHF	1192 Aviation:	Homer Tunnel area		
E131			Transmit	154.15625 MHz
			Receive	152.37500 MHz

Fiordland Fishermen

Mount Irene repeater		Transmit	156.3250 MHz
		Receive	160.9250 MHz
Mount Rugged repeater		Transmit	156.2250 MHz
		Receive	160.8250 MHz

Works Civil Construction

SSB	4475	Operations: day		
4517	Alternative:	day		
2291	Night			
VHF	E131		Transmit	154.15625 MHz
			Receive	152.37500 MHz
E81	RT/Phone link		Transmit	155.93125 MHz
Milford-Homer Tunnel west portal			Receive	151.75000 MHz
E81				
Mount York repeater			Transmit	155.93125 MHz
Manapouri-Knobs Flat			Receive	151.75000 MHz
E225			Transmit and	153.55625 MHz
Simplex			Receive	

Attachment No 11

VHF Radio Channels used by various operators in Milford Sound

Radio channels are noted as:

Channel 16:	Emergency Channel Milford Airport Tower Diving Companies
Channel 08:	Real Journey's Base
Channel 09:	Real Journey's Inter-ship
Channel 10:	Milford Sound Sea Kayaks Go Orange Kayaks Local Commercial Fishermen
Channel 11:	Southern Discoveries Base
Channel 12:	General
Channel 13:	General Cruising Milford Sound Ltd
Channel 14:	**Harbour Control (Freshwater Basin)**
Channel 15:	Go Orange
Channel 17:	Milford Discovery Centre
Channel 67:	Local Commercial Fishermen Fiordland Lobster Company
Channel 62:	Mitre Peak Cruises Local Commercial Fishermen Pilot vessel working channel
Channel 68:	Jucy Cruise Milford Ltd

Source: Environment Southland Port and Harbour Safety Management System Plan for Milford Sound, December 2014

Attachment 12

ZKSD SOUTHLAND CONSERVANCY – DEPT OF CONSERVATION.
SSB (Single Side Band radios)

FUNCTION	CALL SIGN	SEL CALL NO.	LOCATION
Primary SSB Base	**ZKSD 2**	**0102**	**Auckland Is**
Primary SSB Base	**ZKSD 3**	**0103**	**Invercargill**
SSB Handheld	ZKSD 371		Invercargill
SSB Handheld	ZKSD 372		Invercargill
SSB Handheld	ZKSD 373		Invercargill
SSB Handheld	ZKSD 374		Invercargill
SSB Mobile	ZKSD 331		Invercargill
SSB Portable	ZKSD 351		Invercargill
Primary SSB Base	**ZKSD 4**	**0104**	**Stewart Island**
SSB Field Base	ZKSD 412	0142	Mason Bay
SSB Handheld	ZKSD 31		Stewart Island
SSB Handheld	ZKSD 32		Stewart Island
SSB Handheld	ZKSD 34		Stewart Island
SSB Handheld	ZKSD 35		Stewart Island
SSB Marine	ZM 3115	0110	MV "Jester" Stewart Island

Fishermen's Radio Contacts

Stewart Island	ZLRZ	~~Ted and~~ Maureen Jones	(03) 219 1242
Bluff		Meri Leask	(03) 212 7281
Invercargill	ZLTH		
Southland Fishermen's Radio			
		~~Murray Patterson~~	~~(03) 218 3397~~
~~Aux Riverton~~		~~Maureen Jenkins~~	~~(03) 234 8985~~

Attachment 13

- Alternatively, send an email by normal means to 881621462437@msg.iridium.com. It might be easier but messages sent the other way take priority over the latter. You might like to add this address to your contacts.

- It costs nothing to send an email to the phone.

Phone charges

- It costs NZ$7.47/min to ring the satellite phone.

- To ring from the phone it costs about US$1.50/min.

- An economic way to use the phone is for you to email it and get the user to call you.

- The phone can be set up to leave a voice message, but it is not really necessary given the email feature and cost of leaving a voice message.

You can get by on the above, but you will get more out of the phone if you read the manual.

Satellite Phones
with "email receive" capability

Phone No: 0088 16 314 50992 & 0088 16 214 62437

Email No: 881631450992@msg.iridium.com
& 881621462437@msg.iridium.com

Accessories

Two spare batteries – one 1200 mAh, one 1900 mAh
External aerial
Cigarette lighter power adapter
Headset

Use

Aerial

- Correct use of the aerial is very important

- To talk or transmit, aerial must be rotated to a "clicked in" position and extended so that it is more or less vertical on use.

- So long as a satellite is contactable, the phone will receive a call with the aerial in the "down" position, but it must be rotated and extended before answering the call *(see pg 48 of the manual)*

- Be careful when removing or fitting the aerial. It must be added or removed in the down position by pressing the button on the top centre of the phone.

Satellite Signal

- The phone uses satellites that travel in a north-south orbit taking about 8 minutes to travel from horizon to horizon.

- Buildings, hills etc north and south of your position or a roof above it can impede the signal and reduce the 8 minutes window.

- Satellite signal strength is indicated by the symbol in the top left corner of the display (up to 5 bars, 3 generally needed). Connection to the satellite is also indicated by the brief appearance of the word "registered" and the constant appearance of a house symbol in the bottom centre of the display.

Making telephone calls

- Dial landline and cellphone numbers as though they are international numbers (prefix all NZ numbers by 0064 e.g. ES is 0064 3 211 5115 or 0064 21 707 561 i.e. add the 0064 and drop the first zero off the number).

- You can't call 111, 0800 numbers or 0900 numbers. The Police Communications Centre, Christchurch and Invercargill Police numbers are stored in memories 1 and 2 of "Personal Phone Numbers" in the phone book.

Receiving telephone calls

- When the phone rings, press OK to answer the call.

- If the aerial is in the down position, the phone will chirp three times rather than ring. Rotate the aerial asap and wait for the phone to ring and press OK.

Receiving email and text messages

- The recommended way to receive an email text message is to ring a number that you know won't be answered and the inwards message will be activated.

- Alternatively, go to menu, messages, OK, received messages, OK, or push the "messages" button (it has an envelope on it). This is easier.

- In practice we have found that if the phone is on, the message comes through almost straight away. If it is not on, it may take up to an hour for the message to appear.

Sending email and text messages to the phone

- There are two ways but the following will be transmitted the quickest:

  Go to http://messaging.iridium.com, and follow the template. You might like to add the site to your favourites. The satellite phone no is on the green phone lists.

Note: Satellite Phone charges now differ to those listed above.

Communications in Fiordland

Communications in Fiordland

Communications to/from Fiordland is very difficult. There is only one **land line** into Fiordland (Milford Sound). In an emergency, operators in Milford have been very cooperative in making their telephones available.

Cellphones can be used around Lakes Te Anau and Manapouri including West Arm (West Arm is 021 only). Cellphones coverage is not available in Milford (or any other) Sound.

Satellite phone coverage in Fiordland is also limited within the Fiords due to the mountains hiding the satellites. **Inmarsat** phones are particularly affected due to Fiordland being at the bottom of their coverage footprint. **Iridium** phones are preferred but may fade from time to time as satellites pass out of sight.

VHF usage is limited to line of sight within the Fiord unless portable repeaters are used (see below). See also attachments "VHF Radio Stations" and "Coastguard & Private Radio Stations".

HF coverage is good throughout Fiordland. See attachment "Coastguard & Private Radio Stations".

Establishing Portable VHF Repeater Link

Two way real time transmission of information to/ from Fiordland must be an early priority in any emergency that require the activation of this plan. AREC to work with Southern Lakes Helicopters Ltd to establish portable repeater link (probably using two linking repeaters) from emergency forward operating base (probably Te Anau) and On Scene operators (at site).

Police Communications Resources

Police Channel repeaters situated:

- Sheardowns Peak
- Constellation Peak
- Mount Prospect
- Mid Dome
- Coronet Peak

Channels = Zone: Southland
Area: Te Anau

For areas of Fiordland coverage is limited/non-existent at sea level.

The repeater at Sheardowns Peak can be isolated to give coverage through Milford Sound and extends coverage out to coast. Accessed via the Police radio tech (Invercargill based). This will give coverage of considerable distance beyond Fiordland/Milford Sound entrance.

Landsar Portable Set Up Resources

Handheld radios and portable repeaters held in Te Anau and Invercargill Police Station.

Repeaters can be placed via air support onto sites giving coverage where required.

Cruise Ship ERP Communications v1.0.doc

Should be set up with liaison of AREC to provide a forward radio/comms base.

1 portable repeater in Queenstown
1 portable repeater in Te Anau
1 portable repeater in Invercargill

Approximately 20 handhelds.

Handhelds also have facility to work on:

Channel 61	-	Bluff	(Simplex)
Channel 65	-	Stewart Island	(Duplex)
Channel 64	-	Milford	(Duplex)
Channel 63	-	east Lake Te Anau	(Duplex)
Channel 66	-	west Lake Te Anau	
Channel 1	-	SW Fiordland	(Duplex)

All of these channels can be accessed via a portable repeater if required.

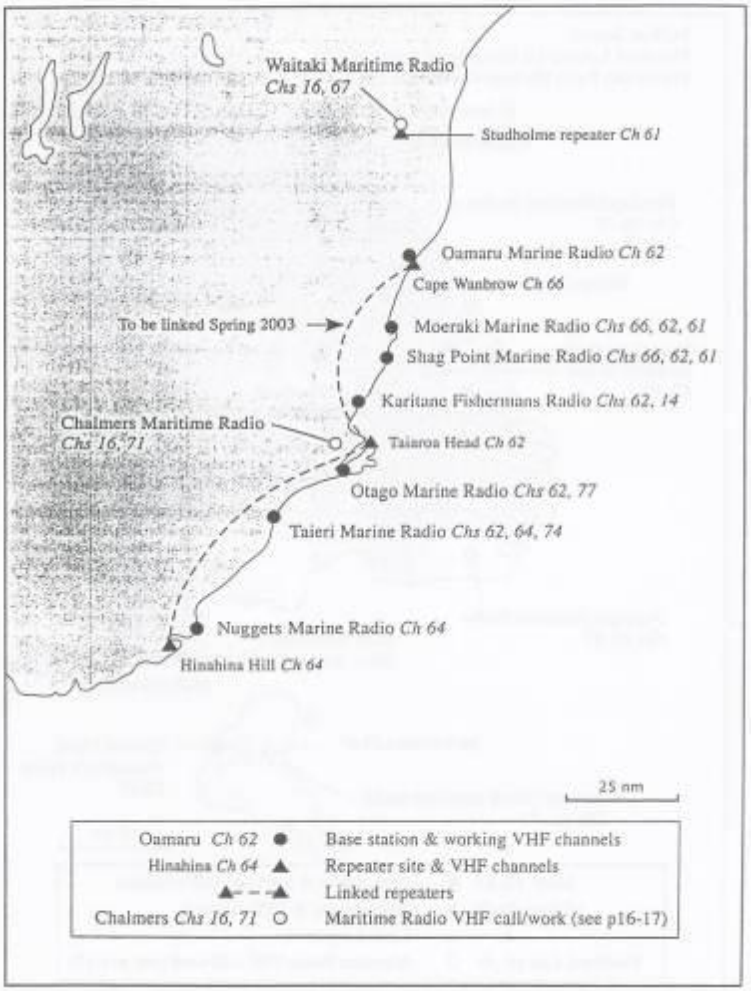
Works and Infrastructure Resources

Can provide coverage through to Milford Sound basic set can be established at Te Anau Station. Local helicopter operators have channel available in aircraft.

(Liaison with Works and Infrastructure and/or Officer Commanding Te Anau Police)

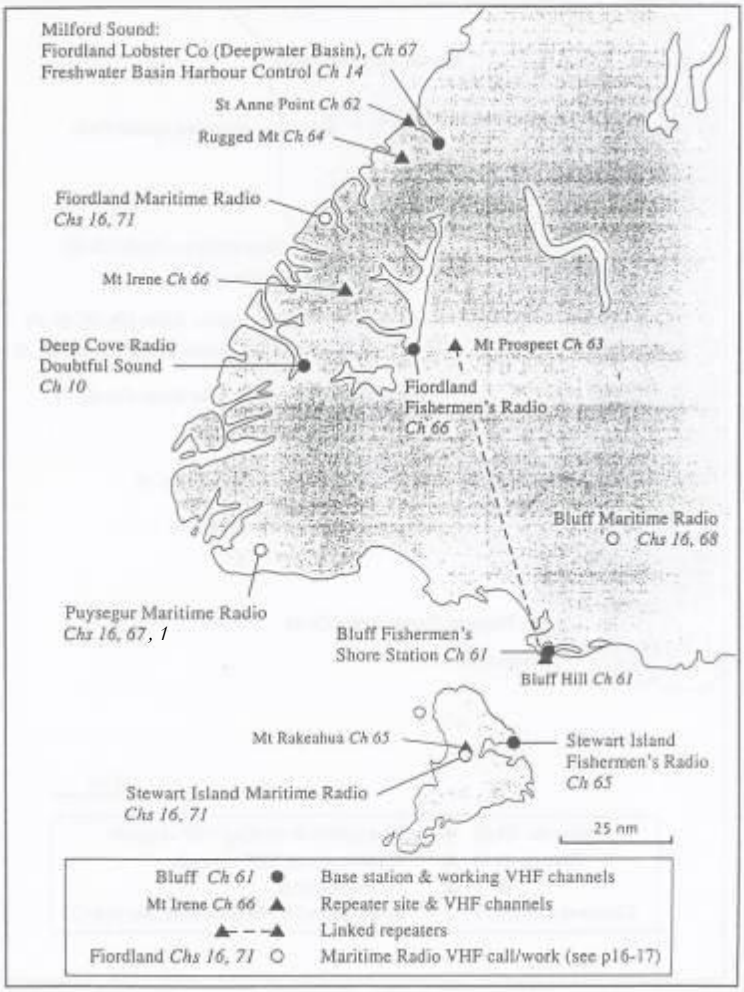
Marine Radio Channels – (see attached)

COASTGUARD & PRIVATE RADIO STATIONS
OTAGO



56

COASTGUARD & PRIVATE RADIO STATIONS
SOUTHLAND - FIORDLAND



60

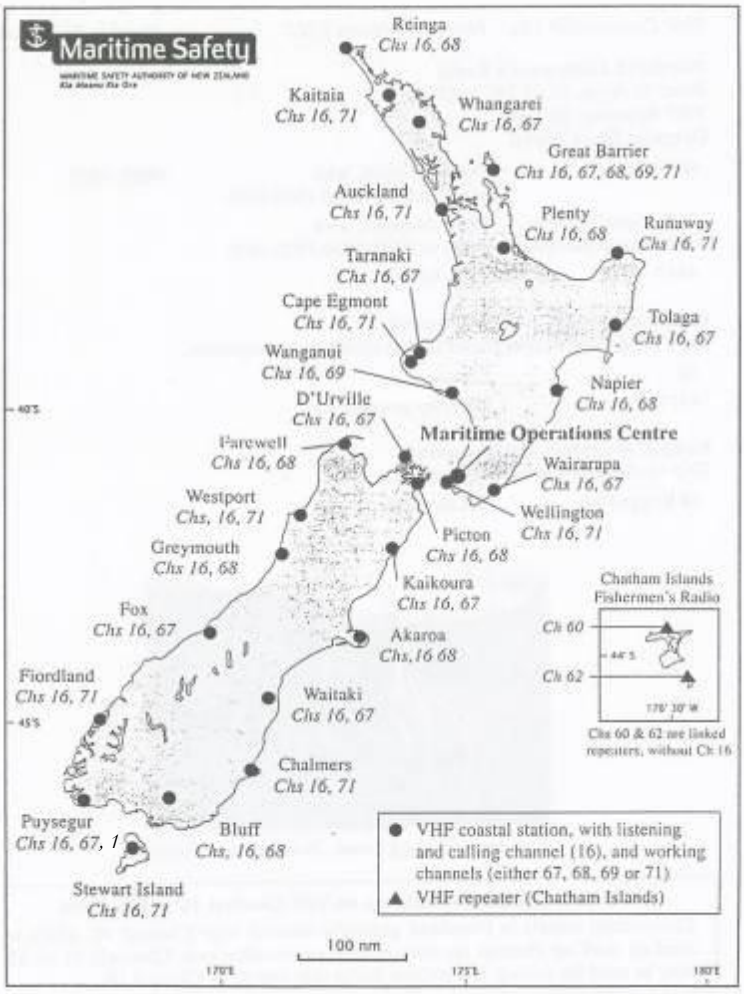
VHF

Bluff
Base:
Repe
Oper
16
61 E
(link
65 M
64 M
66 M
4417

Stew
Base:
Repe
all:
Opera
16
65 M
61 B
(link
4417

-RG28

NEW ZEALAND MARITIME RADIO
VHF RADIO STATIONS



16

COASTGUARD & PRIVATE RADIO STATIONS
SOUTHLAND - FIORDLAND

VHF Channel/SSB kHz	*Monitored Hours NZLT*	*Weather Broadcasts*

Fiordland Fishermen's Radio
Base: Te Anau, Ph 03 249 7402
VHF Repeater: Mt Irene
Operator: Carol Brown

66 Mt Irene	Open 24 hours, with skeds at 0800-0830,1900-1930	0800, 1900
2444 vessel receives 2480 vessel transmits	Open 24 hours, with skeds at 0800-0830,1900-1930	
4417	1930 listens	

Deep Cove Radio, Doubtful Sound
Call: Deep Cove Radio. Diesel fuel available by arrangement.

10	Listens
4417	Open by arrangement

Rugged Mountain VHF Repeater
Ship-to-ship communications only

64 Rugged Mt	Not monitored



Endeavour off Dagg Sound, Fiordland *(Ian Boerg)*

Ship-to-Ship Communications on VHF Channel 10 in Fiordland
Commercial vessels in Fiordland generally monitor VHF Channel 10, which is used as working channel for ship-to-ship communications. Channels 61 or 65 may be used for calling. Deep Cove Radio also listens on Channel 10.

Emergency Management Southland

Radios on hand for use

- HF – Codan 7727 SSB Radio Channels available – ABKSLC
- VHF base sets
    a. Environment Southland Mid Dome Repeater
    b. Civil Defence Mokoreta Repeater
    c. Marine Radio (all channels)
- Trunk Radio capability with telephone calling function
- Air to Ground Radio (Freq = 119.1)
- 1 x Tait 2000 base set 13 x Icom ICF50 and 2 x Tait Orca handheld radios capability to use 132 different channels including:
    - 16 marine channels.
    - CD Net
    - DOC Channels
    - ES Liaison channel
    - Various trucking company channels and private repeaters
- 10 x Icom handheld radios capability to use Bluff and Mokoreta repeaters
- Satellite phone (Ph number 00881631450992)
- 32 x vehicles fitted with radio capability to Mokoreta channel and Bluff repeater.
- Barrett 950L HF Radio (programmable) (See attachment 16 for frequencies).

Ability to monitor:

Police channel

Fire channel

Ambulance Radio

Note: See Attachment No 7 for frequencies programmed into the portable Icom radios.

Attachment 16

Barrett 950L HF Radio Programming

Radio Channel Number	Alpha Numeric Display	Channel Name	Channel Frequency
1	NAT NITE	MCDEM National night	3351.00
2	NAT MORN	MCDEM National morning	4529.00
3	NAT CALL	MCDEM National calling	5386.00
4	NAT DAY	MCDEM National day	6910.00
5	NAT DIST	MCDEM National DX	7740.00
6		*Not allocated*	
7	NORTH NITE	MCDEM Northern night	3357.00
8	NORTH DAY	MCDEM Northern day	5389.00
9	CNTRL NITE	MCDEM Central night	3354.00
10	CNTRL DAY	MCDEM Central day	5383.00
11	SOUTH NITE	MCDEM Southern night	3360.00
12	SOUTH DAY	MCDEM Southern day	5407.00
13	LOCAL DAY	MCDEM local day	5392.00
14		*Not allocated*	
15		*Not allocated*	
16		*Not allocated*	
17		*Not allocated*	
18		*Not allocated*	
19		*Not allocated*	
20	N I MRS	North Island mountain radio	3345.00
21	S I MRS	South Island mountain radio	3261.00
22	SAR NITE	Search and Rescue night	3023.00
23	SAR DAY	Seach and Rescue day	5680.00
24		*Not allocated*	
25	MFS CT	Milford Sound Control Tow	5592.00
26		*Not allocated*	
27		*Not allocated*	
28		*Not allocated*	
29		*Not allocated*	
30	FWD NGT	Four wheel drive night	4946.00
31	FWD DAY	Four wheel drive day	7848.00
32		*Not allocated*	
33		*Not allocated*	
34		*Not allocated*	
35		*Not allocated*	
36		*Not allocated*	
37		*Not allocated*	
38		*Not allocated*	
39		*Not allocated*	
40	HELICOPTER	Helicopters Te Anau	3915.00
41	REAL JOUR	Real Journeys	4523.00
42	ST JOHN	St John night	4889.00
43	ST JOHN	St John day	7848.00

dc/04/12/10538

Barrett 950L HF Radio Programming

44		*Not allocated*	
45	DOC NTI	DOC	5734.00
46	DOC NTI	DOC Canterbury Region	4487.00
47	DOC NTI	DOC	3186.00
48	DOC BTI	DOC	3240.00
49	DOC BTI	DOC Operations	3336.00
50	DOC BTI	DOC	4493.00
51	DOC BTI	DOC National	4880.00
52	DOC BTI	DOC	3279.00
53	DOC BTI	DOC	5854.00
54	DOC BTI	DOC	4616.00
55	DIST ALT	Distress alternative	2045.00
56	DISTRES 1	International distress	2182.00
57	DISTRES 2	International distress	4125.00
58	DISTRES 3	International distress	6215.00
59		*Not allocated*	
60	HARBOUR 1	Harbour Authority	2012.00
61	HARBOUR 2	Harbour Authority	2162.00
62	INT SHP 1	Inter ship	2068.00
63	INT SHP 2	Inter ship	2456.00
64	INT SHP 3	Inter ship	2638.00
65	MESS EX 1	Message exchange	2444.00
66	MESS EX 2	Message exchange	2480.00
67	STEW IS	Stewart Island Radio	4417.00
68	TAU MAR 1	Taupo Marine	2207.00
69	TAU MAR 2	Taupo Marine	4146.00
70	TAU MAR 3	Taupo Marine	6224.00
71		*Not allocated*	
72		*Not allocated*	
73		*Not allocated*	
74		*Not allocated*	
75	USER PROG	User programmable	3935.00
76	USER PROG	User programmable	5000.00
77	USER PROG	User programmable	10000.00
78	USER PROG	User programmable	15000.00
79	USER PROG	User programmable	9410.00
80		*Not allocated*	
81		*Not allocated*	
82		*Not allocated*	
83		*Not allocated*	
84		*Not allocated*	
85		*Not allocated*	
86		*Not allocated*	
87		*Not allocated*	
88		*Not allocated*	

dc/04/12/10538

Attachment 17

Removed.

Attachment 18

Oil Spill Response Communications Plan Template

Circuit / User	Band	Channel	Frequency	Callsign	Remarks
SHORE – SHORE (HQ/Shore/ Cleanup parties)	VHF Land Mobile Mobile Phone Networks	ES/ESB Bands	Various – Region Dependant	As directed by user of equip	1. FM Voice 2. Equipment as provided by region i.e Environment Southland, DOC, CD, Wildlife 3. MNZ Ch ES127 & ESX8 1. Cellular coverage dependant on differing networks.
SHORE – SHIP (HQ/Workboats/Tanker)	VHF IMM Mobile Phone Networks	CH 16 Ch 4 – 88*	156.800Mhz	International	1. FM Voice 2. Ch16 – Intl Distress/Safety 3. * VHF IMM Channels are working channels and used as directed by Harbour authorities and Coastal stations. 4. Channels MM83-MM88 are reserved for Coast Guard operations. 5. Equipment - Hand Held or Fixed station radios. 6. Intrinsically Approved radios only to be used on tankers. 1. Cellular coverage dependant on differing networks.
SHORE – SHIP (HQ/Workboats/Tanker)	MH / HF	As directed	Various	International	1. SSB Voice 2. Used for long haul communication links or when line of sight VHF links unsuitable. 3. Linked directly to Incident control or relay via landline from another radio base, eg. Meri Leask

Circuit / User	Band	Channel	Frequency	Callsign	Remarks
GROUND – AIR (HQ/Spotter/Workboats Tanker)	VHF Aeronautical	As directed	As directed	International	1. FM Voice 2. Linked directly to Incident control or relay via landline from Control tower
					Notes 1.. Maritime NZ portable Aeronautical handheld radios and Base station equipment available to be deployed as required. 2.. Maritime NZ portable handheld radios and Base station equipment (land mobile) available to be deployed as required. Can be used to supplement local regional resources.

Annex 4

Sensitive Areas and Coastal Information

4.1 Introduction

4.2 Waiparau Head - Porpoise Bay, Curio Bay and Waikawa Harbour

4.3 Haldane Bay and Estuary to Slope Point

4.4 Slope Point to Waipapa Point

4.5 Waipapa Point to Tiwai Point

4.6 Bluff Harbour and Awarua Bay

4.7 Stirling Point to Steep Head

4.8 Steep Head to North Beach including New River Estuary and Oreti Beach

4.9 North Beach to Pahia Point including Jacobs River Estuary

4.10 Pahia Point to Track Burn including Te Waewae Bay

4.11 Track Burn to Big River including the Waitutu Coast and the Solander Islands

4.12 Big River to Awarua Point including the Fiordland Coast and all the Fiords and Sounds

4.13 Stewart Island, Ruapuke Island, Codfish Island and Muttonbird (Titi) Islands and associated islands

4.14 Significant Habitats of NZ Fur Seal, Hookers Sea Lion, Bottle Nosed, Dusky and Hector Dolphins, Fiordland Crested Penguins, Yellow Eyed Penguins and Sea Bird Colonies (including Titi)

4.15 Bird Species & Rehabilitation Priorities

4.1 Introduction

In order to provide for effective response to a marine oil spill, it is important to supply the Regional On Scene Commander and the Advisory Team with as much information as possible about coastal areas. This Annex breaks the Southland Coastline into 14 areas and describes the values that require protection within each area, access to the areas, communications, preferred response options and restrictions on options. A topographical map and aerial photograph of each area is included to complement the description.

An overview map of the Southland coast showing many of the boundary points for each area is located on the following page to assist in locating the relevant coastal area sub annex and map. These maps are starting points only. More specific imagery and/or mapping at a relevant scale is available electronically via Environment Southland's website, http://gis.es.govt.nz/coastline-habitat/index.aspx Google Earth or Environment Southland's Geographic Information System. The website mapping contains habitat, ground photo, Mataitai, Marine Reserve, marine mammal sanctuary and coastline segmentation information. It is very useful for getting an understanding of an area potentially affected by an oil spill.

Most of the Southland coastal marine area has been determined by the Department of Conservation to be an Area of Significant Conservation Value. This is reflected in the descriptions of each area in Annexes 4.2 – 4.14. A more particular description of the Areas of Significant Conservation Value can be found in Appendix 5 of the Regional Coastal Plan (http://www.es.govt.nz/media/13635/coastal-plan-december-10-appendix-5.pdf).

The entire coastline is significant to the Tangata Whenua. Te Tangi a Tauira, an Iwi Management Plan (http://www.es.govt.nz/publications/plans/iwi-management-plan/) recognised by Te Runanga o Ngai Tahu contains maps identifying areas of particular importance to Ngai Tahu ki Murihiku. While these maps are a starting point for identifying places that may be affected by oil spills they do not replace the need for direct communication and dialogue with Ngai Tahu ki Murihiku. Initially at least, such communication should occur through the Iwi Advisor. Many of the archaeological sites of particular importance are contained in an Environment Southland GIS layer (M:\GIS\Data\|Natural\SCHIP_Heritage_Sites.shp). This layer is searchable (with scale limitations) on http://nzaa.eaglegis.co.nz/nzaapublic

The mainland Southland coastline from the western end of Te Waewae Bay to Waiparu Head in the east has been broken down into segments within which key threats, beach type and access has been identified. This information is maintained in Environment Southland's computer system (M:\GIS\Data\Coastal\Marine Oil Spills) as a GIS layer.

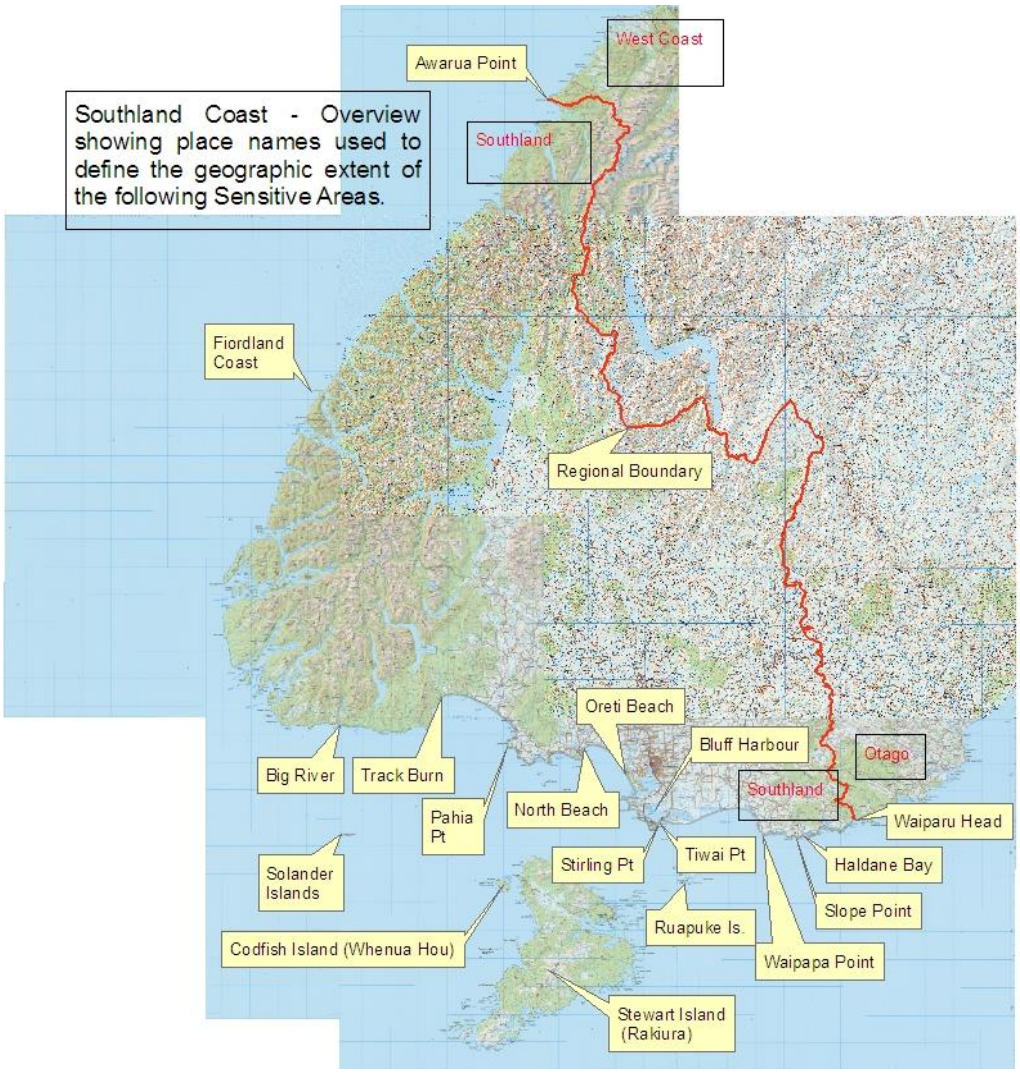
It is not practical to document each area within the fiords and sounds, north of Puysegur Point or each area in and around Stewart Island. However, the significant habitats of NZ Fur Seal, Hookers Sealion, Bottle Nosed, Dusky and Hectors Dolphins, Fiordland Crested Penguin, Yellow Eyed Penguin and Seabird colonies (including Titi), many of which occur in Fiordland or Stewart Island, have been identified in **Section 4.14 of this Annex** by the use of a lettering system. The smaller letters denote presence in the area rather than significant colonies. Furthermore, for the areas most at risk, a special plan (The Fiordland Marine Oil Spill Contingency Plan) has been jointly prepared by Maritime NZ and Environment Southland.

Ideally, the entire foreshore in Southland should be protected in the event of a marine oil spill in the coastal marine area. In reality, however, resources available to the Council to respond to a spill are limited and it is not always possible to protect all areas. Hence, it is necessary to prioritise areas in terms of their sensitivity to marine oil spills and the likelihood that they will be exposed to a marine oil spill. To that end, a habitat mapping and ecological risk assessment report **entitled "Southland Coast – Te Waewae Bay to the Catlins"** , should be consulted (http://www.es.govt.nz/media/12348/southland-coast-risk-2008.pdf). In addition various reports on the habitats of various estuaries can be found at http://www.es.govt.nz/environment/coast/estuaries/estuarine-reports/. These reports contain

descriptions, photographs and habitat maps (including shoreline type) of the coastline as well as a description of the area's human and ecological value.

The Council has identified in this Annex several sites within the coastal marine area that require priority protection from marine oil spills. These areas are based on discussion with Tangata whenua and the values within Areas Containing Significant Values as identified in the Regional Coastal Plan. While the principal values are identified in this Annex and the Coastal Plan, the Wildlife and Iwi Advisors should also be consulted because the Annex and Coastal Plan are not exhaustive.

Tangata whenua consider all areas in the coast should be protected from marine oil spills. However, recognising that some areas are more highly valued areas than others, they believe spilled oil should be directed towards mobile gravel beaches wherever possible when beach fouling is inevitable. Sandy beaches and rocky intertidal platforms should be afforded a higher degree of protection compared to gravel beaches as the former are an important source of kai moana.

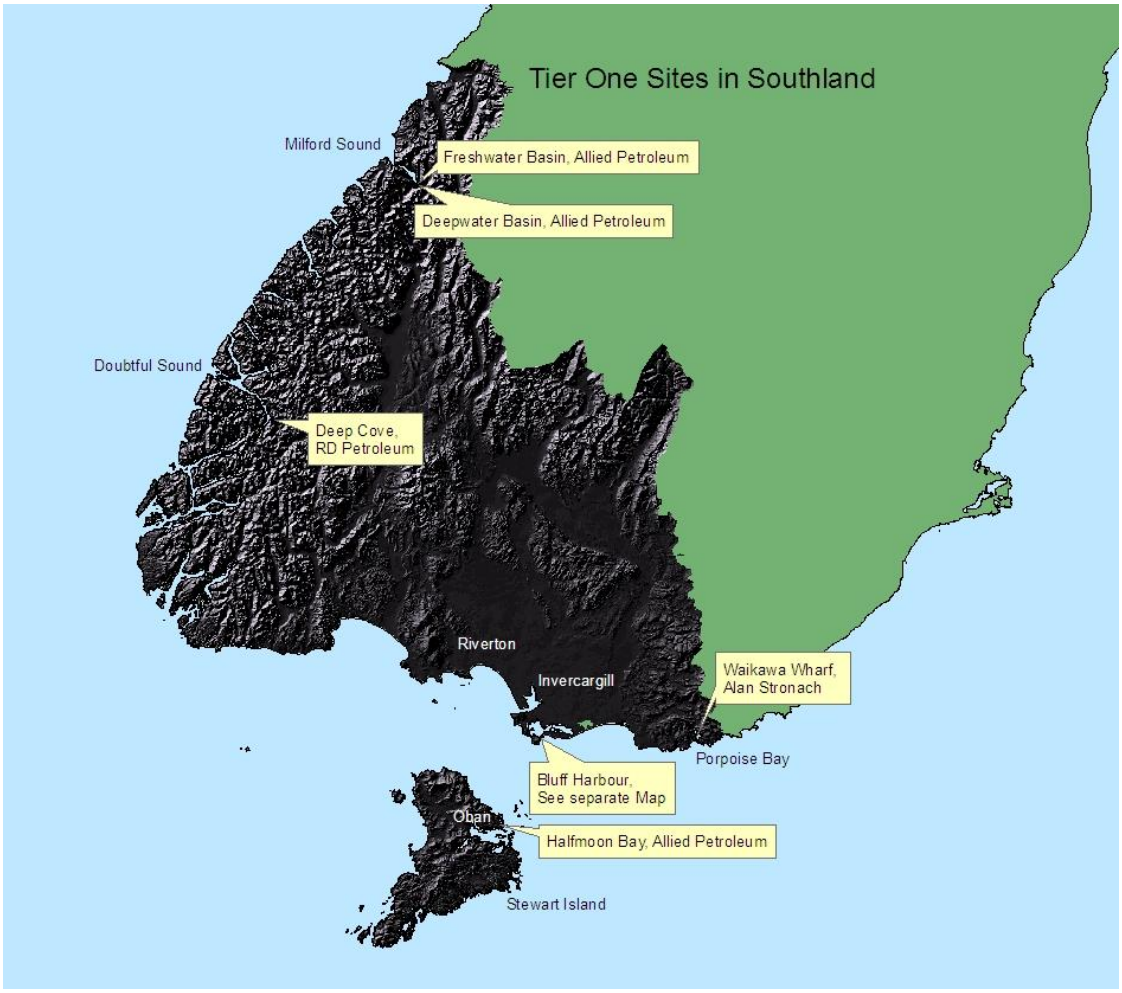


Tier One Sites

The Tier One Plans for Oil Transfer Sites record the type of oil transferred at the site. Electronic copies of the Tier One Plans are held in Environment Southland's Electronic Records System (File qA1502). They are also held on Web EOC (MPRS Database).

See below for a map showing the general locations of the Tier One Sites and see Annex 4.6 for a map showing the Tier One Sites at Bluff.

There are no specific Tier Two responses for the Tier One sites apart from the more particular arrangements for Bluff Harbour outlined in Section 2.1.2 of the Standard Operating Procedure and the Incident Action Plans contained in various parts of Annex 4.



Tier One Sites in Southland (see map in Section 4.6 for Tier One sites in Bluff Harbour)

4.2 Waiparau Head – Porpoise Bay, Curio Bay and Waikawa Harbour

Description
Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

Most of the area is also within the Catlins Coast Marine Mammal Sanctuary. A nationally significant population of Hectors Dolphins feed around the Waikawa Harbour mouth and the Porpoise Bay area. The dolphins often swim in the breakers amongst swimmers during Summer. NZ Sea Lions frequent Porpoise Bay.

Waikawa Estuary is a wetland of national significance to fisheries. Brian Smith runs dolphin/wildlife viewing tours from the Waikawa jetty.

A Mataitai covers much of the area (see map overleaf). The Tangata Tiaki of the Mataitai are Vincent Leith, Stephanie Blair and Gail Thompson. Brothers Point (Turimokomoko), Te Ahi Mate Bay and Curio Bay (Tumu Toka) are also particularly important areas to Iwi.

The Waikawa Estuary supports a number of waterfowl and waders which feed on the tidal mudflats.

There are populations of Yellow Eyed Penguin located around Waiparu Head, Brothers Point and North Head and a smaller population is located in the vicinity of the Curio Bay Scenic Reserve (see also **Section 4.14 of this Annex).** Smaller numbers of Little Blue Penguins are also present. The Curio Bay shoreline consists of a nationally significant fossilised forest.

The Waikawa, Porpoise Bay, Curio Bay area is a popular tourist destination. The southern end of Porpoise Bay is relatively sheltered and popular for swimming. A camping ground is located above the beach at this point.. The middle section of Porpoise Bay is a popular surfing area.

The Curio Bay foreshore is the site of a nationally important Jurassic fossil forest. It is contained within the Curio Bay Scientific Reserve.

The coastline from the Waikawa Harbour entrance to Waiparau Head is generally steep and rocky with some sandy beaches. Yellow eyed and little blue penguins frequent the area.

The Waikawa River at the head of the Waikawa Estuary is an important whitebait and kanakana fishery.

The intertidal habitat of the Waikawa Harbour has been mapped – see "Broad Scale Intertidal Habitat Mapping of Waikawa Estuary", Cawthron Report 939 held by the Environment Southland Environmental Information Division (also available at http://www.es.govt.nz/environment/coast/estuaries/estuarine-reports). Fine Scale monitoring of Waikawa Harbour has also been undertaken (http://www.es.govt.nz/media/12378/waikawa-estuary-fine-scale-monitoring-2007.pdf)

Fine Scale monitoring of the Porpoise Bay Beach has also been undertaken (http://www.es.govt.nz/media/15636/porpoise_bay_beach_2011_final.pdf)

Tier One Sites
There is a Tier One site (diesel only) at the Waikawa Jetty (B P & W A Stronach)

Access
Vehicle access is shown on the attached topographical maps with the main road into the area being Niagara - Waikawa highway. The nearest boat launching slipway is located adjacent to the Waikawa Jetty. There are several farm airstrips on the eastern side of the estuary. There is vehicular access to and along

Porpoise Bay. If conditions are suitable, trailer boats can be launched from Porpoise Bay at or west of the Cook Creek mouth. Vehicle Access on the beach is managed by Rule 14.2.16 of the Coastal Plan

Boats up to approximately 10 metres in length can enter the estuary but channel conditions vary, the draft being less than 1.5metres on occasions. Local knowledge is available from the Stronach family.

Communications
Very limited Cell Phone coverage on ground. Cell phone reception may be available from the carpark at the end of the Point between Porpoise and Curio Bays. Spark signal is strongest in the air (plane).

Environment Southland R.T may be patchy, CD Controller's Net, DoC (Catlins), Marine VHF and M/HF, landline telephone from local residents, hand held simplex radios.

Preferred response options
The main threat for **Porpoise Bay** is a marine oil spill offshore drifting onto the beach. Where possible, oil should be prevented from washing onto the beach. Deflection booms are unlikely to be effective along the coastline close to shore unless the sea is calm, as the area is exposed and subject to rough seas.

Prevention of oil reaching the beach or the estuary may best be achieved by the use of dispersants offshore. However, unless the wind is onshore (it usually is not) oil is likely to bypass the beach.

Dispersants should not be used in the Hectors and Bottle Nosed dolphin areas whilst dolphins are present (usually Summer) without the prior approval of the Wildlife Advisor (see below). Beach clean up and wildlife response, including preventative capture, and rehabilitation if required. See below for an Incident Action Plan prepared for an oiled wildlife response near Brothers Point. Much of this Plan will be applicable to other spills within the Porpoise Bay area.

If oil is likely to land on beaches, consideration should be given to precleaning to minimise the volume of oiled debris. Oil that has washed ashore should, where possible, be contained to prevent it spreading on the next high tide.

While it is possible for oil from an offshore spill to enter the Waikawa Harbour, the main threat for Waikawa Harbour is a diesel spill at the jetty. The response to this type of spill should be limited to preventing further spillage, monitoring the spill, avoiding potential fire hazard and enforcement action.. No dispersant should be sprayed in the estuary.

Restrictions on options
Exposed coastline reducing the effectiveness of booms in the open coast close to shore. Shallow water close to shore restricts the use of dispersants and may limit navigation for larger vessels. No dispersants are to be sprayed in the estuary. **A nationally significant population of Hectors dolphins resides along the coastline from Waikawa to Waituna Lagoon Dispersants should not be used whilst dolphins are present in Porpoise Bay without the prior approval of the Wildlife Advisor.** This is due to the dispersed oil being spread through the water column, whereas floating oil poses less of a hazard to dolphins.

IAP - Oiled wildlife exercise - Telford 17 December 2010

Aim: Minimise impacts of oil spill on wildlife in the area.

Objectives:
1 - Ensure response meets health and safety.
2 - Assessment of wildlife species, numbers, locations, priorities.
3 - Protect wildlife from oil if possible (capture, hazing etc).
4 - Capture and treat oiled wildlife.
5 - Ensure appropriate media and community response.

Situation Report

An imminent spill of marine diesel oil from Brothers Point north. Heavy loadings of diesel oil expected to reach shoreline between Brothers Point and Sisters within 2 hours, 6 hours Wallace Head and Chaslands Mistake, reach Tautuku and Long Point in 12-24 hours. At this stage diesel expected to dissipate in 24 hours.

The coastline consists of steep inaccessible cliffs, some sandy bays and beaches and small estuaries. Access is poor and limited both by sea and land.

Wildlife species include YEP, Blue penguins, shags(several spp), NZ fur seal, sooty shearwaters, dolphins. The occasional NZ sea lion can be observed in the area.

The priority threatened species are YEP, Blue penguin, sooty shearwater. The focus of the wildlife response is the YEP colonies because of good access, management of colonies, ability to respond to avoid oil on the birds. Other species will be picked up if oiled.

Te Rere - 52 chicks, 52 adults, 13 juveniles.

Rest of coastline to Chaslands - estimate 28 birds. Up to ? pt-24est chicks and adults(Tau?). 20 Mapa Pt, Long Pt-280 birds. Pot-350 birds.(worst case) Immediate concern Te Rere.

Priority - protect Tautuku Estuary-ecosystem-species incl.Black stilts?

We conclude that initially there are likely to be 26 YEP adults that could be oiled on their way home from sea to land at Te Rere during the course of the afternoon and evening. We cannot prevent these birds swimming through the oil (the partners of these penguins are likely to be on the nest with the chicks and can therefore be prevented from going to sea).

The cost of rehabilitation of these birds is $?? (Massey to provide).

Response Actions

A

1. Initial response land based-Te Rere, Long beach, Shades Beach-people visiting 3 beach areas
2. Blue bin transported to Te Rere,. Cheryl Pullar in charge. Contact Fergus Sutherland, Te Rere Trust Paptowai.
3. Chicks - feed on nest.
4. Adults and juvenille taken off nest, banded, DOC to sort pen to hold. Held on-site until danger passed - a)- chick feeding team, b) A&J feeding team, c) Landing team-capture birds as land. Treat as oiled.
5. Put Ingill nursery on first standby. Lloyd Esler in charge.
6. Oiled birds boxed and transferred.

Decision on people numbers depending on what find.

B Water based.

- Hananui-2 zodiacs (DOC boats)

4 hrs away

- purpose- look for oiled wildlife and report, publicity.
- 6 people
- DOC provided

Daylight hours and sea conditions safe.

- both report back to Field Supervisor
- check local boat-Stronach

C Waipati Beach
- lock off access to beach

D Tautuku Estuary - Ask for protection by oil team.
- 12 hours away
- boom before dark today if risk likely
- also consider protection for Long Beach Estuary

E Give Massey a heads up (early on)

Personnel

Wildlife Co-ordination-Gary
Wildlife Advisor –Terri
Field Operations Supervision- Pete
Facility Supervision –Nicola
- Go through responders list-ring

Comms:
- no cell phone coverage
- DOC-VHF available-also set up temporary repeater closer to site.
- Initial response-VHF

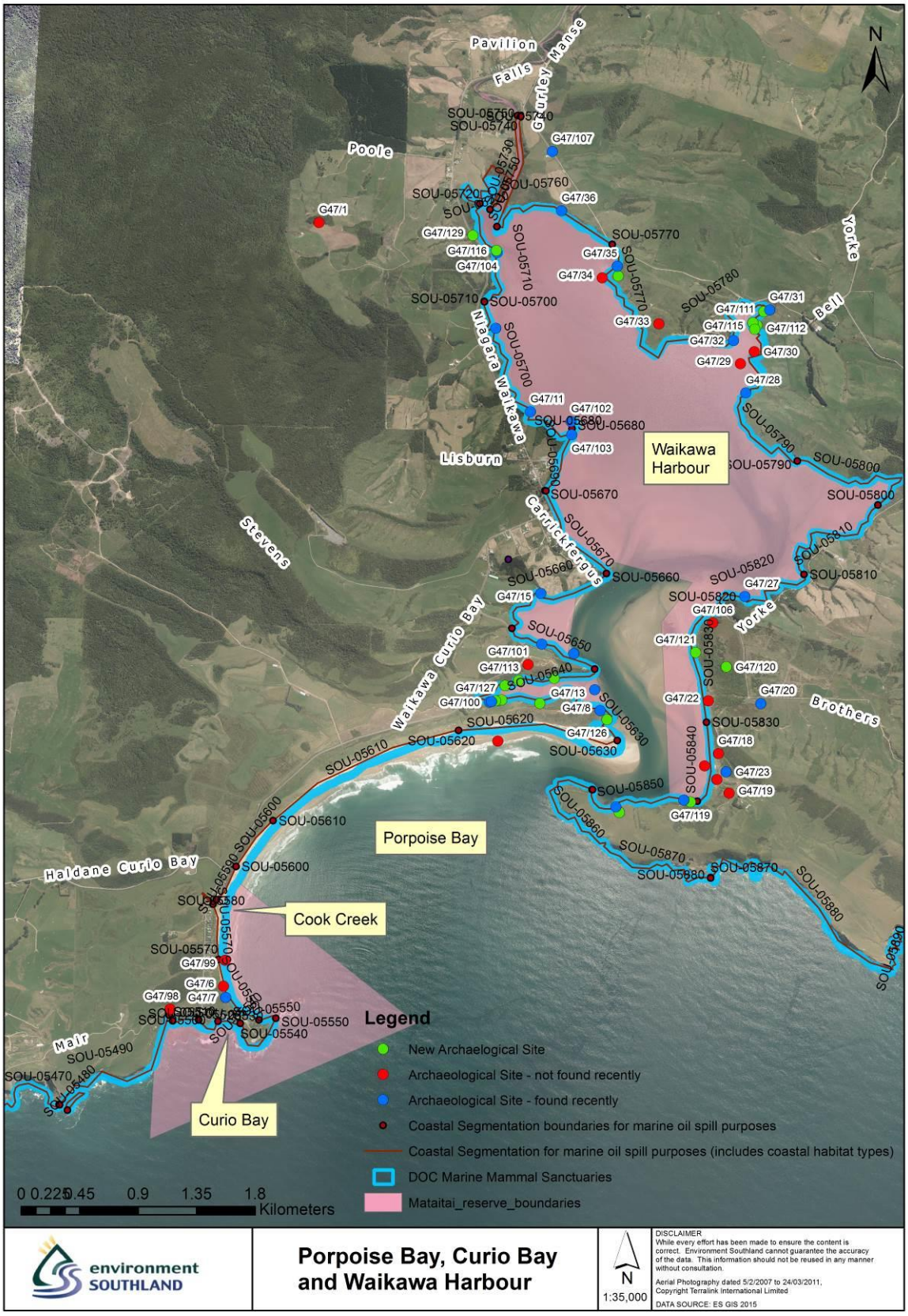
Temp Oiled Wildlife Facilities:
- Contact Invercargill nursery and put on standby.-small area make space
- ES & ORC blue boxes and trailer mobilised with oil spill gear.
- Response Trailer to OWF at Donovan Park, Invercargill. ES blue box to Te Rere. ORC blue box to Long Point.
- Hananui gets key supplies from trailer before leaves Bluff.or maybe picks gear up at Waikawa. Work out best way to get gear on boat.

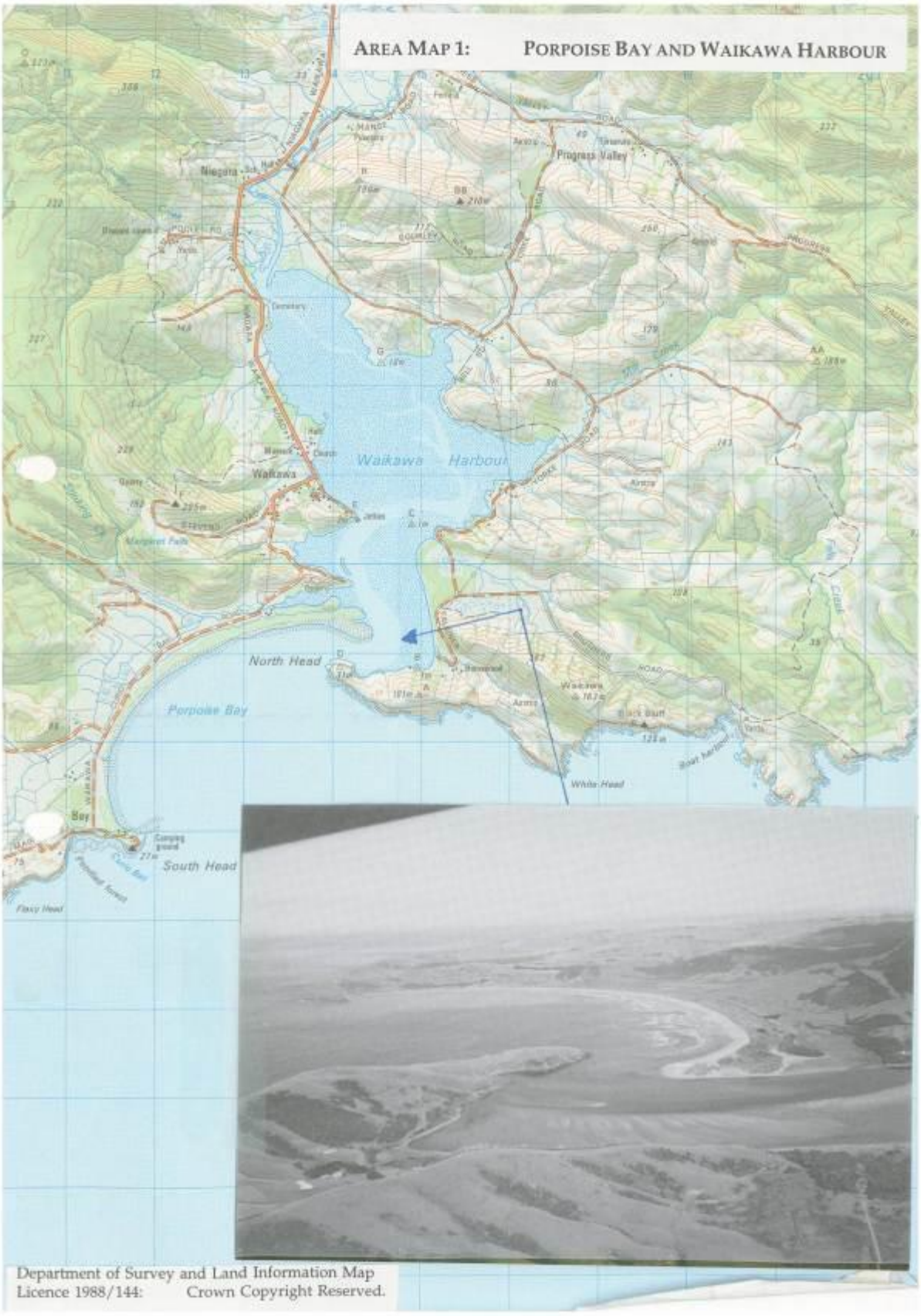
Birds originally held at Te Rere-waratahs and chicken netting-purchase.

Comms Plan:
- Public to avoid area
- Advise on bird response.

Additional thoughts:
- Wash facilities-get Massey on standby, get quote to send washing container south.
- Let all key personnel on standby
- Could send birds to Massey if only a few.(note logistics of transporting oiled birds)
- Wash birds, but then rehab to local people (i.e. Penguin Place)
- YEP add to list of responders. Cheryl to put together

Issues to be followed up:
1- I.D. Te Rere-location to be marked on Southland plan.
2- Organise penguin boxes for blue boxes and trailer.
3- Mallet for driving waratahs.
4- How do we get gear onto Hananui?
5- Cost of transporting Massey bird washing container to Invercargill. Don't we have this already?
6- Cheryl to put together list of local YEP responders


Pavilion
Falls
Gurley Manse
Poole
Yorke
Bell
Niagara Waikawa
Lisburn
Waikawa Harbour
Stevens
Carrickferguus
Waikawa Curio Bay
Yorke
Brothers
Porpoise Bay
Haldane Curio Bay
Cook Creek
Mair
Curio Bay
N
Legend
New Archaeological Site
Archaeological Site - not found recently
Archaeological Site - found recently
Coastal Segmentation boundaries for marine oil spill purposes
Coastal Segmentation for marine oil spill purposes (includes coastal habitat types)
DOC Marine Mammal Sanctuaries
Mataitai_reserve_boundaries
0 0.225 0.45 0.9 1.35 1.8
Kilometers
environment SOUTHLAND
Porpoise Bay, Curio Bay and Waikawa Harbour
N
1:35,000
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Aerial Photography dated 5/2/2007 to 24/03/2011, Copyright Terralink International Limited
DATA SOURCE: ES GIS 2015


AREA MAP 1: PORPOISE BAY AND WAIKAWA HARBOUR
Niagara
Progress Valley
Waikawa
Waikawa Harbour
North Head
Porpoise Bay
South Head
White Head
Department of Survey and Land Information Map
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4.3 Haldane Bay and Estuary to Slope Point

Description
Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

The area consists of long headlands with rocky seacliffs and an indented sandy bay. The significant conservation values in the area are located in the estuary. However, oil from a coastal spill (i.e. offshore and out of Haldane Bay) is very unlikely to reach the estuary and as such, these values are unlikely to be compromised. There is a significant yellow eyed penguin colony at Slope Point and Bottlenose, Dusky and Hectors dolphins are present along the coastline (see also **Section 4.14 of this Annex**). Most of the area is also within the Catlins Coast Marine Mammal Sanctuary.

NZ Sea Lions may be present on the Haldane Beach.

The intertidal habitat of the Haldane Estuary has been mapped – see "Broad Scale Intertidal Habitat Mapping of Haldane Estuary", Cawthron Report 1036 held by the Environment Southland Environmental Information Division and available at http://www.es.govt.nz/environment/coast/estuaries/estuarine-reports/. There are also several fine scale monitoring reports for the Haldane Estuary. These are available at http://www.es.govt.nz/media/15646/haldane_fs_2011_final.pdf.

Access
Vehicle access to Haldane Bay from the east is via Mair Road with foot access at the end of the track or 4WD access around the edge of the estuary at low tide. There is vehicle access to the domain on the west side of the estuary. Helicopters and small boats may land on the beach. All terrain vehicle access to Haldane Bay is available over farmland or via the eastern foreshore of the estuary - from the end of Watsons Road.

Communications
Communications limited. No Cell Phone coverage. Satellite Phone, Environment Southland R.T and CD controllers Net are unknown, DoC (Catlins), Marine VHF and M/HF, telephone from local residents.

Preferred response options
The main threat for Haldane is a marine oil spill offshore drifting onto the beach. Oil should be prevented from washing onto the beach. Deflection booms are unlikely to be effective along the coastline close to shore, unless the sea is calm, as the area is exposed and subject to rough seas.

Prevention of oil reaching the beach may best be achieved by the use of dispersants offshore. However, unless the wind is onshore (it usually is not) oil is likely to bypass the beach.

Dispersants should not be used in the Bottlenose, Dusky and Hectors dolphin areas whilst dolphins are present without the prior approval of the Wildlife Advisor (see below). Beach clean up and wildlife response if required. Oil that has washed ashore should, where possible, be contained to prevent it spreading on the next high tide.

Oil from an offshore spill is very unlikely to enter the Haldane Estuary unless the spill is close to the shore and it coincides with an incoming tide.

Restrictions on options

Exposed coastline reducing the effectiveness of booms on the open coast close to shore. If oil could be contained recovery would be difficult. Shallow water close to shore restricts the use of dispersants and may limit navigation for larger vessels**. Due to the presence of a significant yellow eyed penguin colony at Slope Point and Bottlenose and Dusky and Hectors dolphins along the coastline, dispersants should not be used whilst penguins and dolphins are present without the prior approval of the Wildlife Advisor.** The use of dispersants is to be restricted. Rocky headlands are a navigation hazard.

An oiled wildlife response is likely to be a significant component of any overall spill response in the area.


Tokanui
CATLINS FOREST PARK
Approx.
Approx.
Waipapa Point
Black Point
Slope Point
AREA 2: HALDANE BAY AND ESTUARY TO SLOPE POINT
SLOPE POINT TO WAIPAPA POINT
Department of Survey and Land Information Map
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4.4 Slope Point to Waipapa Point

Description
Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

The area consists mainly of a long sandy beach from Waipapa Point to Black Point which is backed by broad dunes and coastal ponds. Most of the area is also within the Catlins Coast Marine Mammal Sanctuary. Lake Brunton, a small (25ha) coastal lake/estuary is located about 2km east of Waipapa Point.

There is a NZ (Hooker's) Sealion Haulout Site on the eastern side of Waipapa Point. Sea Lions may also be present elsewhere on the beach. Bottlenose, Dusky and Hectors dolphins are present along the coastline (see also **Section 4.14 of this Annex**).

Macrophyte mapping and an ecological condition assessment of Lake Brunton was undertaken in 2009. A report describing this work is available at http://www.es.govt.nz/media/12306/lake-brunton-synoptic-survey-2009.pdf.

Access
Vehicle access to Waipapa Point is via Waipapa Lighthouse Road. Limited access to the landward dune along the middle of the beach is available via Diggers Bridge Road, which is only partially formed. Limited access to the landward dune along the beach west of Lake Brunton is available via a track off the Lighthouse Road at the cattlestop. Motor and quad bike only along the beach. Access may also be available over farms. Helicopters may land on the beach or adjoining farmland.

Communications
No cell phone coverage. Satellite phone, Environment Southland R.T, DoC VHF, CD Controllers Net, Marine VHF and M/HF, telephone from local residents and maybe cellphone.

Preferred response options
The main spill threat for this area is a marine oil spill offshore drifting onto the beach. Where possible, oil should be prevented from washing onto the beach. Deflection booms are unlikely to be effective along the coastline close to shore, unless the sea is calm, as the area is exposed and subject to rough seas.

Prevention of oil reaching the beach may best be achieved by the use of dispersants offshore. However, unless the wind is onshore (it usually is not) oil is likely to bypass the beach. Beach clean up and wildlife rehabilitation if required. Oil that has washed ashore on sandy beaches should, where possible, be contained to prevent it spreading on the next high tide

Restrictions on options
Exposed coastline reducing the effectiveness of booms in the open coast close to shore. If oil could be contained recovery would be difficult due to the exposed conditions. Shallow water close to shore restricts the use of dispersants and may limit navigation for larger vessels. Rocky shoreline and outcrop at Waipapa Point may be a navigation hazard. Limited access points to the beach.

4.5 Waipapa Point to Tiwai Point

Description

Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

This area consists of low headlands with offshore reefs, a series of gravelly and some sandy beaches and narrow strips of dunelands in sheltered bays (refer to topographical map). Most of the area is also within the Catlins Coast Marine Mammal Sanctuary (western boundary is Bushy Point – See map on following page).

Bottlenose, Dusky and Hectors dolphins are present around Waipapa Point and sometimes further west as far as Waituna Lagoon. There is a NZ (Hooker's) Sealion Haulout Site on the eastern side of Waipapa Point. Sea Lions may also be present elsewhere on the beaches west of Waipapa Point. Seals feed in the narrow surf zone from Toetoes Estuary to Tiwai Point.

The area also contains the Toetoes (Fortrose) estuary including the outlet of the Mataura River. The estuary is of moderate importance for wading birds, especially when Waituna Lagoon is closed to the sea. The estuary and the Mataura River constitute a very important eel, kanakana, whitebait and trout fishery. The estuary is an area of significant conservation value (Toetoes Estuary ASCV 14-07) – See Regional Coastal Plan. The importance of the estuary is reflected by its inclusion in the wider Awarua Waituna Lagoon Ramsar site.

Boating use of the estuary is limited to pleasure craft.

The rocks east of Tiwai Point are a roosting/nesting area for Stewart Island Shags. Spotted shags also nest and roost on the headland immediately east of the Toetoes (Fortrose) Estuary Mouth and the headland 2 km north west of Waipapa Point. Between Waituna Lagoon and Tiwai Point, a stretch of beach rarely visited by humans, black backed gulls nest just above the high water mark.. Pied Stilts nest just above high water mark on the beach east of Awarua Point but west of the old house. Oyster catchers and banded dotterel also nest along much of this beach. Some penguins frequent the coast between Waipapa Point and Frasers Beach (see also **Section 4.14 of this Annex**). Large mobs of moulting Canada Geese rest above the highwater mark between Bushy Point and Waituna Lagoon in January and February.

Waituna Lagoon is a core part of the Awarua Wetland complex (a Ramsar site) – see map on following page. However, the mouth of the lagoon is often closed to the sea for months at a time.

An off shore spill on a shipping route is unlikely to enter either Toetoes (Fortrose) Estuary or Waituna Lagoon. However, a spill closer in to the coast could enter on an incoming tide although the chances of a spill entering the latter are reduced by the periodic mouth closures.

Fine Scale monitoring of the Toetoes (Fortrose) Estuary was undertaken in 2008/09 (http://www.es.govt.nz/media/12268/fortrose-estuary-fine-scale-monitoring-2008-09.pdf). Several macroalgal investigations have been undertaken in the estauary (http://www.es.govt.nz/environment/coast/estuaries/estuarine-reports/).

There is a large amount of environmental information on Lake Waituna (see the ES Environmental Information division should it be required).

Access

Vehicle access points in this area include Frasers Beach Road, Boat Harbour Road, Waituna Lagoon Road and Tiwai Road at the western end. Motor and quad bike access only along the gravel beaches. Helicopters and small boats may land on the beaches, however, small boat landings are not recommended west of the Mataura River. There is a boat ramp at Fortrose within the estuary and another on the open coast in the first bay east of the Mataura River mouth..

Communications
Environment Southland R.T, CD Controllers Net, DoC VHF, Marine VHF and M/HF, telephone from local residents, cell phone.

Preferred response options
The main spill threat for this area is a marine oil spill offshore drifting onto the beach. Where possible, oil should be prevented from washing onto the beach. However, unless the wind is onshore (it usually is not) and the oil has come from or just outside Bluff Harbour, oil is likely to bypass the beach. Deflection booms are unlikely to be effective along the coastline close to shore, unless the sea is calm, as the area is exposed and subject to rough seas.

The gravel beach from the eastern entrance of Bluff Harbour to Waituna Lagoon has been identified by Tangata Whenua as a preferred spilled oil collection point over all other coastal areas. Tangata Whenua consider all of the coast should be protected from marine oil spills. However, in recognition of the fact that some areas may need to be afforded a lower priority in order to save more highly valued areas spilled oil should where possible be directed towards the gravel beach south east of Bluff harbour (from Tiwai Point to Bushy Point). Sandy beaches and rocky intertidal platforms should be afforded a higher degree of protection compared to gravel beaches as they are an important source of kai moana.

Prevention of oil reaching the beach may best be achieved by the use of dispersants offshore. Beach clean up and wildlife response if required. Due to the difficulty in cleaning gravel beaches and having consideration for their high energy nature, doing nothing in terms of beach clean up may be an option.

Oil from a spill offshore is unlikely to enter Toetoes Estuary. However, if oil is entering on an incoming tide it may be possible to erect a deflection boom on the Harbour side of the entrance away from wave action. Oil should be deflected towards the Fortrose side of the Harbour for collection and recovery. As much of the collected oil as possible should be recovered before the outgoing tide removes the oil.

Restrictions on options
Exposed coastline reducing the effectiveness of booms in the open coast close to shore. If oil could be contained recovery would be difficult due to the exposed conditions. Shallow water close to shore restricts the use of dispersants and may limit navigation for larger vessels. Rocky shoreline and outcrops from Fortrose to Waipapa Point may be a navigation hazard. Limited access points to the beaches. Gravel beaches are difficult to recover oil from due to leaching.

Nesting black backed gulls and resting moulting Canada geese may limit clean up activity because disturbance of these birds will cause the young black backed gulls and the moulting geese to run towards the sea and potentially oiled foreshores.


New River Estuary
Bluff Harbour
Awarua Bay
Waituna Lagoon (Lake Waituna)
Toetoes Estuary
Legend
Oreti Beach & Motupohue Mataitai
Awarua Waituna Lagoon Ramsar site
Catlins Marine Mammal Sanctuary
environment SOUTHLAND
South East Coast - Mataitai, Ramsar site & Marine Mammal Sanctuary
N
1:250,000
DISCLAIMER
While every effort has been made to ensure the content is correct. Environment Southland cannot guarantee the accuracy of the data. This information should not be reused in any manner without consultation.
DATA SOURCE: ES GIS 2015


AREA 3: WAIPAPA POINT TO TIWAI POINT
Waituna Lagoon
Fortrose
Department of Survey and Land Information Map
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4.6 Bluff Harbour and Awarua Bay

Introduction

Bluff Harbour, Awarua Bay, the open coast east to Fortrose and the shorelines of Dog and Ruapuke Island are included in the only "high risk" oil spill area in Southland as mapped in Maritime NZ's 2010 marine oil spill risk assessment. Realistically the bulk of that risk is within the harbour itself, hence the greater level of detail in this part of Annex 4 than in others.

The contents of this Annex are as follows:

1. Narrative including Description, Tier One Sites, Port Plan, Access, Communications, Priority Areas for Protection, Preferred Response Optionsand Restrictions;
2. Site Sheets and Maps for Awarua Bay, the Upper Harbour, the Port Area and the Harbour Entrance;
3. Site Operations Plan for operating at the Awarua Rowing Club site;
4. Oil Spill Exercise Scenarios and Incident Action Plans (Bluff harbour based);
5. Drogue Tracks;
6. Water Abstraction Sites & Aquaculture facilities (map);
7. Dispersant application boundary (plan);
8. Potential Oil Landing Beachs (Plan);
9. Ornithological Society Report on species found in Awarua Bay;
10. Snapshot Bird Survey of Awarua Bay on 10 October 2002 (plan);
11. Significant Wildlife Habitat Areas in Bluff Harbour (map);
12. Gauging at Tiwai Bridge, Awarua Bay

Description

Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

Bluff Harbour is a high threat area for marine oil spills due firstly to the transfers of oil product that occur at Tiwai Wharf, the Town Wharf, the Ferry Wharf and the Island Harbour and secondly to the movement of large vessels in and out of the harbour. South Port, the operator of the Bluff Port, has a website (http://www.southport.co.nz/facilities-and-services/marine-services/wind-and-tide-conditions) that displays the latest tide and weather state. Access is also available to South Ports real time wind, sea level, water temperature and current data network http://neon.niwa.co.nz/logon.aspx?logoff=1 (log on and password protected) via the Regional Harbourmaster or his deputy.

The Bluff Harbour/Awarua Bay consists of three main areas, Awarua Bay, the upper Bluff Harbour and the Harbour Entrance and Port area.

There is little river flow into Awarua Bay or the Harbour. As such, the water quality is very good. The narrow entrance to the Harbour is subject to strong tidal flows of up to 6 knots in spring tides (see the tidal stream charts for the Bluff Harbour in **Annex 5.6**). Even in the upper harbour, the currents are often in excess of one knot, especially in the channels (see **attached gauging at the Tiwai Bridge**). Hence, a marine oil spill at the Oil Transfer sites entrance or even beyond the harbour entrance would have the capacity to spread throughout the area.

The intertidal and subtidal habitats of Bluff Harbour have been mapped – see "Broad Scale Intertidal Habitat Mapping of Bluff Harbour", Cawthron Report 940 and "Broad Scale Subtidal Habitat Mapping of Bluff Harbour", Cawthron Report 916 held by the Environment Southland Environmental Information Division. The intertidal habitats of Awarua Bay have been mapped – see "Broad Scale Intertidal Habitat Mapping of Awarua Bay", Cawthron Report 941 held by the Environment Southland Environmental Information Division. These reports are currently unavailable on the Environment Southland website (http://www.es.govt.nz/environment/coast/estuaries/estuarine-reports/) but that may change.

The rocky shore habitats of Stirling Point have surveyed – see "Stirling Point - Fine Scale Rocky Shore Monitoring", Wriggle Report held by the Environment Southland Environmental Information Division (also available at http://www.es.govt.nz/media/15629/stirlingpointrockyshore2011final.pdf)

Much of the land adjoining the harbour and Awarua Bay in particular, is land managed by DoC and is covered in indigenous vegetation. Consequently the natural character of the area is highly rated. Awarua Bay (See Site Sheet 4.6.1 below) is one of the five most important wading bird habitats in New Zealand and is internationally (Ramsar) recognised through its partial inclusion in the wider Awarua Waituna Lagoon Ramsar site.

Awarua Bay (See Site Sheet 4.6.1) is used by large numbers of migratory and resident waders and waterfowl. Migratory Species are mainly present from late September to early April. The Bay is also the January - August habitat of the several New Zealand dotterel (South side of Cow Island) and a moulting area for several hundred black swans (January/February). A few Caspian Terns, White Fronted Terns and many Black backed bulls nest just above the high water mark on small islands and on gravel spits, especially in Awarua Bay (see **attached October 2002 snapshot survey and the 1991 Ornithological Society submission** for further information). There are also Stewart Island shag colonies on several small islands in Bluff Harbour.

Awarua Bay also has considerable recreation value - yachting, swimming, windsurfing, kitesurfing, fishing and whitebaiting.

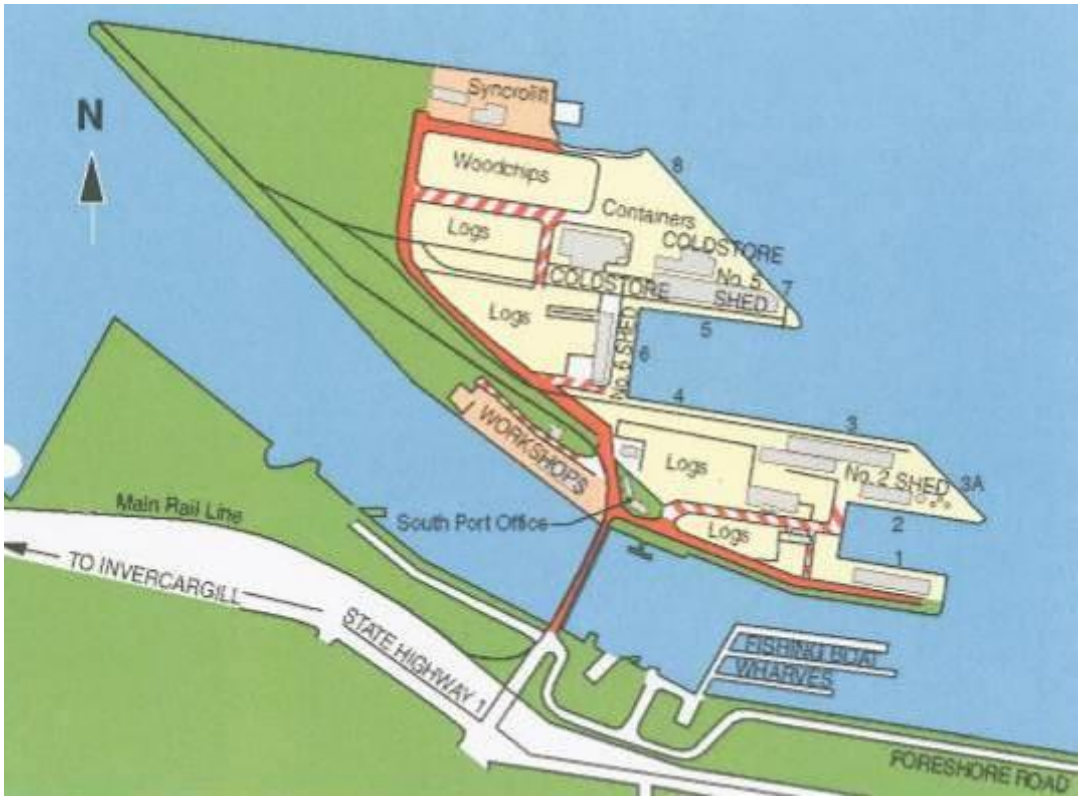
Awarua Bay is the top priority area for oil spill responses within Bluff Harbour (see "Priority Areas" heading later in this section.

The upper part of Bluff Harbour (See Site Sheet 4.6.2) is increasingly being utilised for aquaculture (see map attached to this Annex). Given its proximity to the main berthing areas in the lower harbour, the area is also used to store rock lobster in holding pots known as "coff pots".

Apart from the main channels, much of this area drains completely at low tide. The area contains four significant islands and a number of smaller islets or rock outcrops. The shoreline around Joeys Island is sometimes used by nesting birds, white fronted terns in particular.

Three beaches that regularly accumulate seaweed or other debris, depending on the prevailing wind at the time, have been identified as "oil landing beaches" where oil should be diverted to if possible. These beaches have relatively low ecological values.

The Port area (See Site Sheet 4.6.3) contains numerous boats and wharf piles, fenders and solid wharf facings are at risk of fouling during an oil spill. The Port area consists of five principal wharves – the Island Harbour, the Town (Fuel) Wharf, the Tiwai Wharf, the Ferry Wharf and three arms of the Finger Wharves.



The Bluff Harbour Entrance Area (See Site Sheet 4.6.3) is used for recreational fishing, boating, sailing, rowing, diving and shellfish gathering. Several onshore fish processing and aquaculture facilities extract water from the port area and fishermen hold live rock lobsters in "coff" pots in the lower harbour (see map attached to this Annex and Annex **2.10** for contact details).

The south western shoreline between the Port area and Stirling Point is immediately adjacent to the last and southernmost 1.6 kilometres of State Highway One, and as such, has significant scenic and amenity values. This stretch also contains two small beaches that are important locally for swimming and general recreation. The rocky shore that predominates this stretch is also an important local source of paua.

At Stirling Point itself, there is a well used public lookout at the end of the State Highway and a couple of restaurants overlook the area. Several coastal walking tracks and the old pilot station in this vicinity enhance the amenity of this area.

Stirling Point marks the eastern boundary ot the Moupohue Mataitai. See Annex 4.7 for more details on this Mataitai.

There is about 2 kilometres of coastline on the north side of the Harbour from Tiwai Point to the Tiwai Wharf jetty. Half is reasonably exposed south facing rocky shore and the rest is a west facing sandy beach. Neither reach is well used but both offer fishing opportunities (flounder, blue cod and paua).

Tier One Sites

There are several Tier One sites in the harbour located at all of the major wharf facilities except for the Finger Wharves (see **the map below**). In addition, several mobile fuel transfer operators bunker vessels in the port, especially in the vicinity of berths 4 & 5.

The Tanker Wharf and Mobil Tank Farm (one site), NZAS Ltd (Tiwai) Wharf and Road Science Sites are regarded as "major" sites. Respectively, these sites transfer petrol and diesel, heavy fuel oil and bitumen from coastal tankers to shore tanks, some through long transfer pipes.



Access
There is extensive road access adjacent to Bluff Harbour and Awarua Bay. There are several boat launching ramps at Bluff and various jetties in the area as outlined on the NZ Topo50 map. At low tide the area of navigation for small boats is significantly reduced.

Access to the mudflats may be gained at several points around the harbour and Awarua Bay.

Communications
Cell phone, Simplex Hand held Radios, CD Net, Marine VHF, DoC VHF.

Priority Areas for Protection
The priority areas for protection within the Bluff Harbour/Awarua Bay unit are as follows:

1. Awarua Bay (See Site Sheet 4.6.1);
2. Upper Bluff Harbour (See Site Sheet 4.6.2)
3. Bluff Harbour Entrance and Port Area (See Site Sheet 4.6.3).

Within the latter area, the reach between Morrisons Beach and Stirling Point is most probably the highest priority given its high aesthetic value and popularity for snorkelling and shellfish gathering.

Preferred response options
General guidance is set out below **but more particular guidance is available from attached Site Operations and Incident Action Plans that have been developed for various scenarios in and around Bluff Harbour.**

- ***Gasoline, automotive diesel and marine gas oil (marine diesel)***
  These spills are likely to occur in and around Town Wharf and Ferry Wharf. These are volatile products.

For small spills the recommended course of action is to do nothing except take enforcement action as may be appropriate and advise persons who could be affected by the diminished water quality.

For large **petrol** spills, see the following June 2008 Incident Action Plan for guidance.

For large diesel spills the recommended course of action is:

High to outgoing tide - Contain as much of the spill as possible and allow it to evaporate or mop it up with sorbents. If containment is not possible, assist the spill to enter the main channel and allow the tidal current to carry the spill out to sea.

Low to incoming tide - Contain the spill as much as possible within the vicinity of Ferry Wharf, Town Wharf or Island Harbour basins and try to prevent it from reaching the upper harbour. Allow evaporation to occur or mop it up with sorbents, whilst providing for fire risk. Agitation may be used to assist evaporation.

For Gasoline, automotive diesel, marine gas oil, aviation fuel that has passed the Island Harbour, and is heading up the harbour and posing an environmental threat, the recommended course of action is to attempt to divert the oil towards one of the "oil landing beaches" shown on the "Oil landing beachs" map attached to this section otherwise allow it to evaporate. Agitation may be used to assist evaporation. Any oil contained at the oil landing beaches should either be mopped up with sorbents or allowed to evaporate.

Containment booming is difficult downstream of the Tiwai Causeway due to the strength of the current.

Where possible prevent birdlife entering the area affected, or likely to be affected, by the spill. Wildlife rehabilitation as required.

Do not use dispersants as the adverse effects of these in the harbour may be worse than the light oil itself.

- ***Light Fuel Oil*** *(See attached Incident Action Plan & Oil Spill scenario dated June 2010)*
  These spills are likely to occur in and around Town Wharf or Island Harbour. Light Fuel Oil is more persistent than the very light oils referred to above and hence allowing evaporation to occur is not an effective response option.

  The recommended course of action is:

  High to outgoing tide: Contain and recover as much of the spill as possible with vacuum trucks, sorbents or skimmers. If containment is not possible, apply dispersants if known or proven to be effective and the spill is within the permissible dispersant application area (see Area map 4 in this section), assist the spill to enter the main channel (eg with fire hoses) and allow the tidal current to carry the spill out to sea. The main priority is to prevent the oil moving into the upper harbour in subsequent incoming tides.

  Low to incoming tide: Contain at source and recover as much of the spill as possible, apply dispersant to the remainder to assist dispersion where the dispersant is known or proven to be effective and the spill is within the permissible area (see Area map 4 in this section).

  If containment at source is not possible, attempt to divert the spill into one of the two berthing basins on Island Harbour and contain it there. Recover as much of the oil as possible.

  If containment within the berthing basins is not possible, and the spill is moving up the harbour then spray dispersant where the dispersant is known or proven to be effective (do not use

dispersant north of the line between Tiwai Wharf and the northern end of Island Harbour). DOC have also recommended against dispersant use for beach clean up in this area, (Regional On Scene Commander to discuss with DOC).

If the light fuel oil has passed Island Harbour, the recommended course of action is to attempt to divert the oil towards one of the "oil landing beaches" shown on the "Oil landing beachs" map attached to this section. The oil should be contained here (booms or earthworks) allowing recovery and beach clean up to occur. Where possible prevent birdlife entering the area. Wildlife rehabilitation as required.

Tangata whenua consider all areas in the coast should be protected from marine oil spills. However, in recognition of the fact that some areas may need to be afforded a lower priority in order to save more highly valued areas spilled oil should where possible be directed towards the oil landing beaches. Sandy beaches and rocky intertidal platforms should be afforded a higher degree of protection compared to gravel beaches as they are an important source of kai moana.

If oil is unable to be diverted, mop up patches of spilled oil with sorbent booms troiled behind boats or deployed from shore. If the oil has spread into sensitive areas, then contain as much of the oil in these areas as possible (booms, earthworks) to prevent further spreading with the changing tide. Where possible prevent birdlife entering the area. Wildlife rehabilitation and shoreline cleanup (see attached plans for shoreline types) as required.

- ***Heavy Fuel Oil (HFO)*** *(See attached Response Action Plan)*
  These spills are likely to occur at Tiwai Wharf, along the causeway pipelines, or from leaks or discharges from vessels. This is a highly persistent, relatively viscous oil.. The Data Sheet below outlines the characteristics of this oil.

NZ Aluminium Smelters Heavy Fuel Oil – Specifications

SCHEDULE "A"

SPECIFICATION OF FUEL OIL

	LIMITS	TESTING PROCEDURE
Specific Gravity at 15.5°C(kg/L)	0.980 maximum	ASTM D.1298
Flash Point P.M.C.C. (°C)	65 minimum	ASTM D. 93
Kinematic Viscosity at 40°C Centistokes	200.0 maximum	ASTM D445
Pour Point (°C)	10 maximum	ASTM D. 97
Sulphur, total (% mass)	3.00 maximum	ASTM D4294
Ash, total (% mass)	0.100 maximum	ASTM D. 482
Sediment, by extraction (% mass)	0.150 maximum	ASTM D. 473
Gross Calorific value (KJ/kg gross)	*43,000 minimum	USNB No. 97 Latest Issue
Strong Acid Number (mg KOH/g)	Nil	ASTM D. 974
Vanadium (V) mg/kg	100 maximum	IP 288
Sodium (Na) mg/kg	50 maximum	IP 288
Water, by distillation (% vol)	0.75 maximum	ASTM D. 95

(* See Clause 8.3)

All sampling and testing shall be completed utilising the ASTM-IP procedures specified above, or those specified in the most recent Standards Manual published by the American Society for Testing and Materials

The recommended course of action is:

High to outgoing tide: Contain and recover as much of the spill as possible using the rapid deployment boom or harbour boom in the first instance. Bear in mind that realistically the boom will take up to an hour to access and deploy by which time the spilled oil will have moved, perhaps a mile or two. Sample the oil for dispersant testing and enforcement purposes. If containment is not possible, apply dispersants where the dispersant is known or proven to be effective (do not use dispersant north of the line between Tiwai Wharf and the northern end of Island Harbour), assist the spill to enter the main channel (eg with fire hoses) and allow the tidal current to carry the spill out to sea. The main priority is to prevent the oil impacting on the shore or remaining within the harbour.

Low to incoming tide: See the following Response Action Plan for an HFO Spill from Tiwai Wharf/Jetty on an incoming tide. For Spills that originate from the Bluff side of the harbour, the Incident Action Plan is similar but the chances of the oil heading into Awarua Bay are reduced and the chances of diverting the oil onto an "Oil landing beach" may be increased. See also the

attached vertical aerial photos showing the actual path of various drogues deployed from different places within Bluff Harbour on incoming tides.

- ***Bitumen and liquified pitch***

  These oil types are heated to pump them through the pipes. On contact with sea water they solidify and sink. The recommended course of action is to prevent further spillage. If the product cannot be recovered off the seabed with a net or similar tool then the best response is to simply monitor. Some beach clean up may be required if the product washes ashore.

- ***Other oils***

  Modify above response to take into account the oil characteristics.

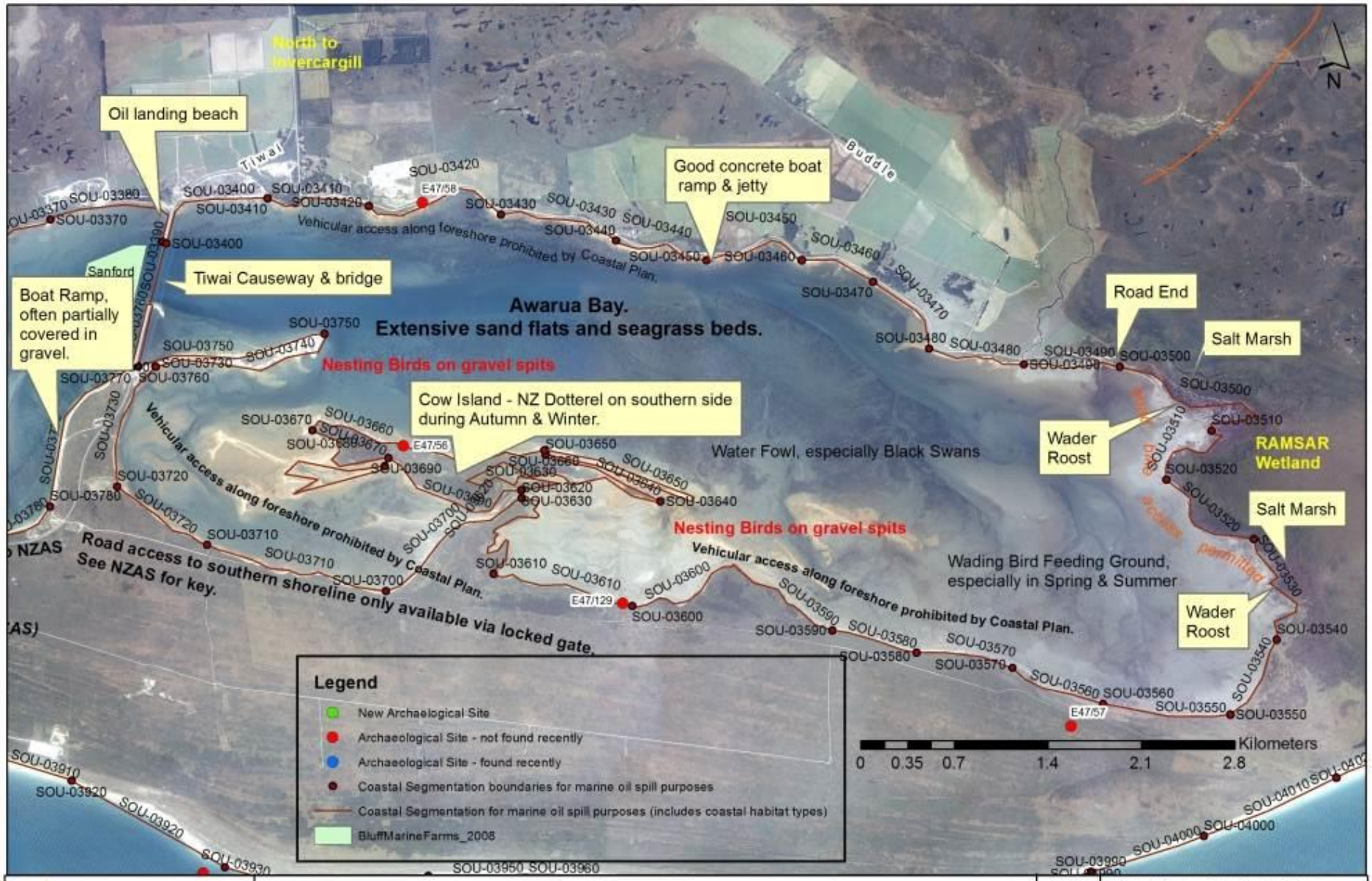
- ***Offshore Spills***

  Where possible oil should be prevented entering the Harbour. Deflection booms are unlikely to be effective along the coastline close to shore, unless the sea is calm, as the area is exposed and subject to rough seas.

  Prevention of oil reaching the beach or the harbour may best be achieved by the use of dispersants offshore. Where possible oil should be diverted towards the gravel beach east of the harbour entrance between Tiwai Point and Bushy Point (Trig station AONC shown on NZ Topo50 map). Beach clean up and wildlife rehabilitation if required. Oil that lands on the beach should be prevented from exiting the beach on the incoming tide.

  Restrictions on options

  The exposed coastline reduces the effectiveness of booms in the open coast close to shore.
  Strong currents will reduce the effectiveness of coastal and harbour booms and will spread spilled oil very quickly. Hence, spills in the area require a rapid response to be effective.
  Shallow water within the harbour and Awarua Bay limits navigation for larger boats.
  Nesting birds are prone to disturbance by response activities, and as such, it may be best to avoid such areas rather than trying to assess or clean them up immediately. However, assessment from afar using telescopes may be possible.
  Dispersant application is restricted and most probably not permitted north of the line between Tiwai Wharf and the northern end of Island Harbour.



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Awarua Bay, Bluff Harbour

Aerial phography courtesy of Invercargill City Council

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Site Sheet 4.6.1 – Awarua Bay, Bluff Harbour

Site 4.6.1	**Awarua Bay, Bluff Harbour**	Risk Rating	**Very High**

Description:

Awarua Bay has about 25 kilometre of sandy, small cobble or fine gravel shoreline.

The southern side of the bay contains Cow Island and several gravel spits on which a variety of birds including Caspian and White fronted terns and Black Backed Gulls nest. NZ Dotterels can be found around Cow Island in Autumn and Winter but this area is less vulnerable to being affected by spilled oil than the open bay.

The bay drains extensively at low tide and the resultant intertidal area is a nationally important wading bird feeding ground, especially for migratory birds in the September – March period. Significant wading bird roosting areas are located at the head of the bay just above high water mark.

Water quality is excellent and the intertidal area supports extensive sea grass beds.

The Bay and some adjoining land form part of a RAMSAR site.

Foreshore Types	Sand/silt Gravel/shingle Small cobble (stones)		
Chart Number	**NZ Topo**	**Coastal Plan Map**	
Not charted	Topo50	9A	
Segments	SOU-340 to SOU-3750		
At Risk Resources			
Commercial	Nil		
Tourism	Some bird watching		
Recreation	Dinghy sailing, windsurfing and kiteboarding, floundering and whitebaiting in Muddy Creek (Aug-Nov)		
Wildlife	Resident & migratory waders (late Sept – early April) NZ Dotterel south of Cow Island (Jan-Aug) Waterfowl, especially moulting black swans (100's) (Jan/Feb) Wading Bird Roosts Nesting areas on gravel spits Shags feeding		
Cultural	A few archaeological sites are present around the shoreline		

Notes

Dispersant prohibited;
Strong currents under the Tiwai Bridge;
Nesting Birds (don't disturb) – assess by telescope if necessary;
Access restrictions – see below;
Rafts of dead eel grass along shoreline at certain times of the year.

Actions

Key priority is to prevent birds from being affected by oil;
Booming is an option – see below;
The nature of the risk to birds is very "time of year" dependent;
Bird "hazing" may be an option;
Pre-emptive capture of NZ Dotterel is a potential option should the southern side of Cow Island be threatened.

Key Contacts

NZ Aluminium Smelters	Security	032185999

Boom Considerations

* Protection boom parallel to shore near wader roosts;
* Containment boom from boat ramp on northern shore;
* Containment boom on northern shore;
* Containment boom on northern shore;
* Booming not possible at causeway bridge;

Access

Access to south shore is through NZAS land and a key is required;
Vehicular access on southern and northern shores is prohibited by the Coastal Plan;
Good boat ramp at old Yacht Club on northern shore;
Good boat ramp southwest of causeway but it is often partially covered in gravel (take a shovel).

Preferred Response Options Matrix				
		Most Preferred	**Feasibility**	
Containment and recovery		Yes	Yes (depends on wind)	
On Water recovery		Yes	Low	
Dispersant application		No		
Bird hazing		Yes (moulting black swans & wading birds)	High	
Shoreline cleanup		Yes	High	
Natural recovery		Yes	Low - Medium	



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Upper Bluff Harbour

Aerial phography courtesy of Invercargill City Council

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Site Sheet 4.6.2 – Upper Bluff Harbour

Site 4.6.2	**Upper Bluff Harbour**	Risk Rating	**High**

Description: Upper Bluff Harbour has about 30 kilometres of sandy, small cobble or fine gravel shoreline. Within this area there are three significant islands and four smaller ones. Tikore and Joeys Islands are both Scenic Reserves. Access to Tikore Is. Is prohibited without permission from Invercargill City Council Parks Dept .

The bay drains extensively at low tide and while the resultant intertidal area is a wading bird feeding ground, it is not as significant as Awarua Bay.

Water quality is very good and the intertidal area supports extensive sea grass beds.

This part of the harbour contains seven aquaculture sites but most of the sites are not actively utilised. Their operational status needs to be checked at the time of a spill.
The lower part of the upper harbour contains several coff pots used for storing rock lobster.

In the Green Point area, several boats, mainly yachts, are permanently moored in the channel more or less due east of the Green Point Yacht Club's slipway.

The shoreline of Colyers Island contains many large ventifacts (wind shaped rocks) as well as some archaeological sites associated with stone tool making.

Foreshore Types	Sand/silt Gravel/shingle Small cobble (stones)

Chart Number	**NZ Topo**	**Coastal Plan Map**
NZ 6821 (partial coverage only)	Topo50	9 & 9A

Segments	
Commercial	Aquaculture & Coff Pots
Tourism	Nil
Recreation	Sailing and some fishing. Some boating/waterskiing near the NE boat ramp
Wildlife	Nesting birds on gravel spits, Shags and terns feeding in water, Waders feeding on tidal flats
Cultural	A few archaeological sites are present around the shoreline, especially Colyers Island & Tikore Island.

Notes

Dispersant application restricted – most probably prohibited unless close to the port & tide ebbing.

Actions
Key priority is to prevent sea birds from being affected by oil;
Booming is an option – see below;
The nature of the risk to birds is very "time of year" dependent;

Key Contacts

Greenpoint Yacht Club – Commodore, Dave Taylor, 73 Russell St – 03 2143360Hm, 03 2112400Wk

Merv Gunn, Invercargill City Council, 03 2111777

Boom Considerations

Booming difficult on south or south east shore due to current strength.

Boom as close as possible to oil source, especially on southwest side.

Unlikely to place booms on west side because prevailing wind/breeze is from a westerly quarter.

Access

Good access for quad bikes and Argos along foreshore from variable access points.

Road access to western foreshore at Green Point and Ocean Beach.

Road access to northern foreshore is limited to the western end in the vicinity of Colyers Island and an Invercargill City Council (ICC) gravel quarry at the eastern end (key to locked gate required – contact Merv Gunn, ICC for a key).

Access to south east is good from adjacent or nearby roads including a boat ramp (Note: boat ramp is often partially covered in gravel – take a spade).

Advise NZ Aluminium Smelters if working in the vicinity of its stormwater outlets.

Access to Tikore Is. Is prohibited without permission from Invercargill City Council Parks Department.

Preferred Response Options Matrix			
	Most Preferred	**Feasibility**	
Containment and recovery	Yes	Low	
On Water recovery	Yes	Very Low	
Dispersant application	No		
Bird hazing	Yes (wading birds)	High	
Shoreline cleanup	Yes	High	
Natural recovery	No	Low - Medium	



SE of Colyers Is.


SW towards Colyers Is.



South from north side of Tiwai causeway



SE from north side of Tiwai causeway



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Bluff Harbour Entrance and Port Area

Aerial phography courtesy of Invercargill City Council

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Site Sheet 4.6.3 - Port Area and Bluff Harbour Entrance

Site 4.6.3	**Port Area and Bluff Harbour Entrance**	Risk Rating	**High**

Description:

A busy but relatively short six kilometres of coastline containing the main port for the Southland region and adjoining the township of Bluff and 3 kilometres of road including the southernmost stretch of SH No.1.

The port consists of several distinct wharves/berthing facilities - the Island Harbour services a variety of bulk carriers and container ships, the Town (fuel) wharf services fuel tankers and the Tiwai Wharf services bulk carriers and fuel tankers that deliver raw materials and export aluminium products from the Aluminium Smelter and the Ferry wharf and Finger wharves service the Stewart Island Ferries and the inshore fishing fleet respectively.

Fuel transfer facilities for small vessels are located at Berth 1&2 on the Island Harbour and at the Ferry Wharf.

Water quality is generally very good but can be diminished by stormwater. The Harbour Entrance area is an important for gathering mahinga kai.

Foreshore Types	Sand Gravel/shingle Rock		
Chart Number	**NZ Topo**	**Coastal Plan Map**	
Not charted	Topo50	9A, 9C	

Segments

At Risk Resources	
Commercial	South Port wharves
Tourism	Ferry terminal for Stewart Island ferry. Stirling Point road end is a very popular visitor attraction (the Cape Reinga of the south)
Recreation	Sailing and fishing, some rowing.
Wildlife	Pelagic seabirds including mollymawks Stewart Island Shags roost on rocks off eastern end of Tiwai Point
Cultural	A few archaeological sites are present around the shoreline, especially on the Tiwai Point side. Important Mahinga Kai area, especially the south western shore and the Motupohue Mataitai that commences at and extends south from Stirling Point by the old Pilot Station.

Notes

Strong currents especially in main channel;
Eddies in harbour, especially on Island Harbour side – See Annex 5.2.4 for tidal flow information.
Photo ID is required to access the Island Harbour;
Health & Safety induction required before working on the Island Harbour (see http://www.southport.co.nz/access/health-and-safety);
Several on shore industries abstract water from the harbour.

Actions

Key priority is to contain any spilled oil as close as possible to source;
Booming is an option in and around berths in Island Harbour and close to shore away from main channels & current;
Media and Community relations important, especially if spill affects areas accessible to the public.

Key Contacts

NZ Aluminium Smelters Security	032185999
South Port	03 2128159
Port Maintenance	03 2127674

Boom Considerations

- Key priority is to contain any spilled oil as close as possible to source;
- Booms are an option in and around berths in Island Harbour;
- Booms are an option close to shore away from main channels and current.

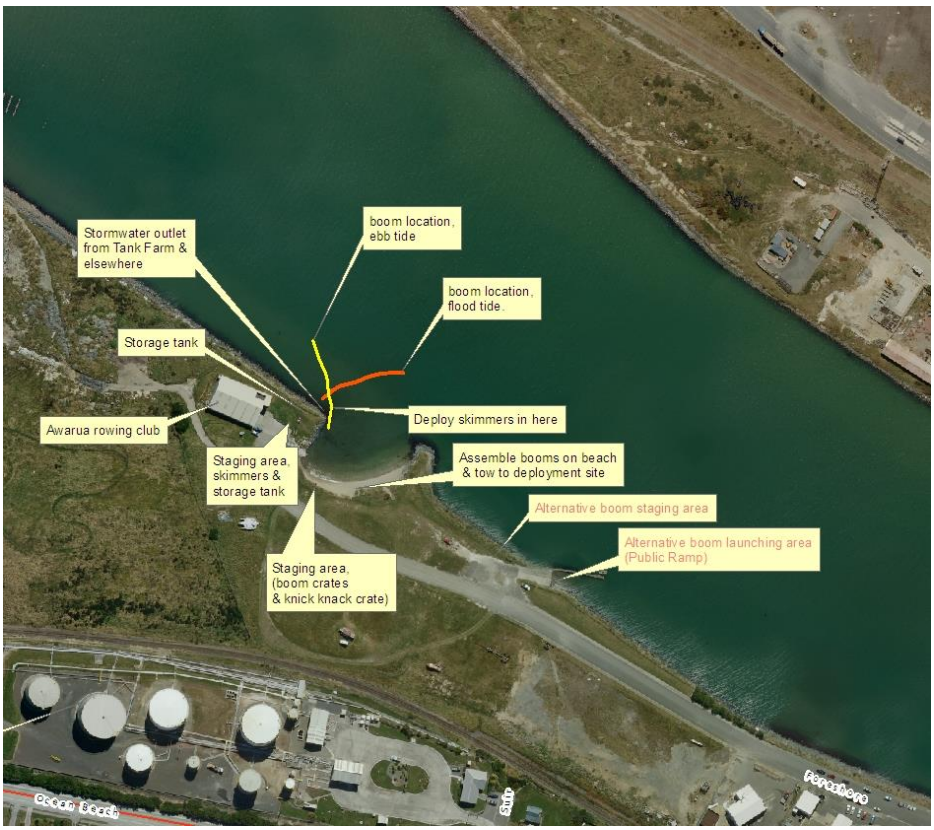
Access

Good road access to southern side.
Limited road access available to northern side via NZAS Security.
Good boat ramp at Bluff Yacht Club;
Very Good boat ramp northwest of Island Harbour bridge but access under bridge is not possible at high tide for many medium sized (6m) boats.

Response Options Matrix				
		Most Preferred	**Feasibility**	
Containment and recovery		Yes	Yes (depends on current)	
On Water recovery		Yes	Low	
Dispersant application		No	Yes	
Shoreline cleanup		Yes	High	
Natural recovery		No	Low - Medium	

Site Operations Plan – Awarua Rowing Club, Bluff





This plan covers operations in and around the Awarua Rowing Club, or operations based out of this area.

Note: An alternative location in this locality for deploying booms is the public boat ramp, located 150 metres east of the Rowing Club. Use of this facility may necessitate exclusion of the public. In such instances, the public can be redirected to the Bluff Yacht Club ramp, east of the Island Harbour bridge.

Staging Areas

Equipment should be transported by HiAb truck and/or forklift to the staging areas identified in the plan above. The use of a forklift will speed up transport and unloading operations. The layout of the staging area should take into account the possible need for "hot" and "cold" zones to separate dirty and clean activities. To this end, the grassy areas to the west and east of the beach can be used.

Boom Preparation

Prepare boom on the sandy/gravelly beach immediately north of the boom staging area.

Fit bridles, or towing plates at ends and bridles at any joins for the subsequent attachment of intermediate anchors to hold boom shape.

Fit ropes, support buoys, anchors, anchor buoys, etc.

If using land sea boom, inflate with leaf blower, transfer boom to water and ballast with spate pump, using the adaptor.

Boom Deployment

Tow boom into position using an appropriate work boat. Attachment point of towing line may need to be adjusted to enhance boat manoeuvrability.

Boom deployment operations in shallow water will be greatly enhanced if people with waders are available.

Time to deploy a boom configuration using a length of land sea boom is approximately one hour from time of transport from the store. Use of rapid deployment boom would speed things up considerably.

Skimmer Deployment

Deploy skimmers on grassy area above the landward end of the boom. At low tide the length of the suction pipe may be a limiting factor, so skimmer may need to be deployed on level platform on the rock rip rap.

Storage Vessel

Use an IBC or one of the two 10 tonne flexidams initially, because they are easy and fast to deploy. Locate it with the outlet facing the sea.

Resources

Personnel

- two on boat
- one supervisor
- six on booms
- three on skimmers and storage vessel

Plant

- HiAb truck
- forklift
- work boat (25 hp dinghy)

Oil Spill Equipment

- booms (40-100 m)
- skimmers and power plants (x 3)
- storage vessel (flexidam)
- accessories (leaf blower, ballasting adaptor, foot pump)

Hazards and Health and Safety

The following hazards have been identified:
Water;
Sunburn;
Slippery rocks;
Ropes;
Forklift operations;
Dog poo;
Broken glass;
Hi Ab operations.

The following measures should be undertaken to eliminate or minimise these hazards:
Personnel on the boat must wear lifejackets;
Personnel should wear robust footwear;
At least one person should wear waders when working in shallow water;
Personnel should keep clear of ropes used to secure or tow booms;
The forklift operator should be mindful of personnel working in the area and their likely movements;
Where possible, personnel should be excluded from the area of Forklift operations;
Personnel should keep clear of the area covered by the arc of the Hi Ab Boom.

Response Action Plan
for an HFO Spill from Tiwai Wharf/Jetty
on an incoming tide

1. Dispatch aerial surveillance (aircraft) direct observation from the top of the ship unloader at the north end of the Tiwai wharf may also be an option.

2. Liaise with NZAS Ltd (Superintendent-Plant Services) regarding preventing further spillage and gaining further information. Deploy NZAS spill kit and utilise NZAS sucker truck if possible.

3. Deploy booms:

   - Port Maintenance to deploy slick bar, rapid deployment and fence boom to spill site and attempt to contain before it gets into Awarua Bay.
   - Environment Southland staff to take land/sea boom to top end of Awarua Bay by 4WD ute and deploy parallel to shore at north or south side, depending on wind direction. (Intention is to keep oil out of vegetation and bird roosts).
   - If spill volume is large, fly more land sea boom and perhaps other from Otago direct to relevant part of Awarua Bay.

4. Dispatch evidence gathering/sampling team with sampling kit and dispersant testing kit.

5. Dispersant application unlikely to be an option (plan restricts area of application and dispersants unlikely to be effective).

6. Contact advisors, especially wildlife and Iwi.

7. Mobilise SCAT team.

8. Mobilise oiled wildlife reconnaissance people and get them to liaise with SCAT team.

9. Contact MSA and run ADIOS.

10. Contact media relations personnel.

11. Advise marine farmers and water abstractors.

12. Check Tier 2 plan for anything that has been overlooked.

13. Monitor and review.

Note: the above plan assumes that a core Incident Management team has been established.

Incident Action Plan

Developed in response to a tabletop exercise
based on the attached scenario (June 2008) – **Large Petrol Spill at Town Wharf**

1 Fire Service lead agency until threat of fire gone.

2 Secure the area (Bluff police, with backup from Invercargill).

3 Evacuate at least 250 m from spill site (initial NZFS action) – back to main road.

4 Set up cordons (Police).

5 Recce area with a gas detector – monitor risk (NZFS).

6 Adaptively manage residual vapours.

7 Evacuate a wider area, beyond the initial evacuation zone (next phase – rest of Foreshore Road).

8 Divert the ferry (H/M or Bluff Harbour Radio – Meri Leask).

9 Electrically isolate power to town wharf at transformer at wharf approach (South Port, via Bluff Electrical), if site is vapour free.

10 Contact PowerNet re electrically isolating an area/areas. Note however, that cutting the power could cause problems in itself.

11 Contact Water Abstractors (Environment Southland).

12 No fly zones, if necessary.

13 Key message to public: "keep away".

14 Prepare press release.

15 Potential ICPs – fire station (preferred – includes a hall and appliance bays), Mobil.

16 Environment Southland to lead the media response. Prepare a media release.

17 Involve St John.

Notes:

- Water Abstractors' electric pumps are above surface;
- NZFS hi-tech communications unit coming in six months (has arrived);
- Potential shield between ship and wharf to deflect spilled product onto wharf, rather than into water.

Marine Oil Spill Tabletop Exercise
10 June 2008

Scenario

Date: 10 June 2008
Time: 1545 hours
Location: Tanker wharf, Bluff
Tide: Low at 1330 hrs, 0.8 metres
Weather: Fine and sunny, but chilly (8˚C)
Wind: Less than 5 km/h of drift from the NW.

The *Kakariki* is discharging regular motor spirit (petrol) from the fuel berth to the tank farm operated by Mobil when one of the flexible hoses connecting the ship to permanent pipework on the shore fails at the lowest point of the hose between the ship at the wharf.

Petrol sprays everywhere, but most of it ends up on the water between the ship and the wharf. A considerably lesser amount ends up on the wharf in the shallow bund. The pumping rate at the time was 8,000 litres/minute (500 kilolitres/hr).

About 30 seconds lapsed between the time the spill was first noticed and the time the pumps were shut down. After shutdown, some petrol continues to leak from the pipe as it depressurises and drains the contents of the flexible hoses that are above the split in the hose (each pipe length – 6 m – contains 750 litres).

It is estimated that about 2,000 litres spilled prior to shutdown, about 500 of which is on the wharf and 1,500 is in the water.

Another 500 litres spill into the water over a period of five minutes following pump shut down.

Wharf staff notify the Plant Manager (Alan Eastlake) of what has happened, who in turn notifies Emergency Services, followed by Environment Southland, South Port and Mobil Emergency Response.

He then proceeds to the tanker berth to oversee the response to the spill, pursuant to Mobil's Tier 1 Oil Spill Response Plan, and to liaise with Emergency Services, Environment Southland, South Port, etc.

The Stewart Island ferry is due to arrive at 1600 hrs and depart again at 1630 hrs. A couple of Oyster Boats are also due in at about 1630hrs.

Task
The challenge now is to prepare an Incident Action Plant (IAP) for the multi agency response to the spill. Part of the process will be determining who shall be the lead agency. There may be a need for agency specific IAPs as well.

There is no rush to come up with a solution. Unlike a real event, we have the luxury of time to develop the best practicable response. Ideally, the IAP should be one that all agencies would feel comfortable implementing if the scenario became a real event in the future.

Incident Action Plan

Oil Spill Exercise, 10 June 2010: Gonwong grounding, Daveys Shoal, Bluff Harbour

1. Aerial surveillance

2. Establish communication with the ship (master/pilot, insurer) – VHF

3. Samples
   - evidential samples
   - dispersant testing – from boat via pilot
   - deploy dispersant kit
   - refer dispersant guidelines

4. Activate EOC and place equipment & personnel on standby. Contact Advisors. Helicopter on standby (in Bluff?). Oiled Wildlife Centre on standby.

5. Minimise oil that gets into Awarua Bay
   - disperse at vessel (landing barge)
   - booms at rowing club
   - booms at head of Awarua Bay

   Prevent further spillage (potential salvage issues)

   Minimise impact on wildlife

   Keep Stakeholders and Community informed

   Gather evidence linking ship, spillage and effects

6. Bird hazing
   - black swans
   - monitor titi
   - Stewart Is. Shags near Tiwai Rocks

7. What ifs? Consider potential spill from ship

8. Extra equipment
   - mako barge
   - ORC equipment
   - oil transfer pumps

9. Issue "notices to mariners" if required for safety.

10. Inform stakeholders
    - ID them (incl water abstractors, port company, Real Journeys, Bluff Fishermens Radio, ICC and Bluff Community Board)
    - Sanford and Urwins
    - recreational users
    - email trees
    - stakeholder briefing

11. Liaise with Police re traffic management.

Oil Spill Scenario – Tabletop Exercise
June 2010

Date: Wednesday, 9 February 2011

Weather: 0900 hrs, WNW wind, 20 knots. Forecast to clear by lunchtime and winds to reduce to 5-10 knot SW sea breeze. Similar weather for the next 2-3 days.

Tide: High 0632 hrs 2.4 m, 1754 hrs 2.4 m NZDST
Low 1247 hrs 1.0 m NZDST

The joint venture fishing vessel *Gonwrong* (length 68m, 379 grt, draft 7.2m) departs the town wharf at 0900 hours for another fortnights fishing, after having bunkered with light fuel oil. The pilot boat *Takitimu* is in close attendance.

The *Gonwrong*, under the pilot's direction, proceeds in a north easterly direction to intersect number 3 reach and proceeds down the main channel at about 5 knots. Soon after passing number 4 beacon to starboard, the pilot orders a "port 20" course correction to keep the vessel on the line of the inner and outer Davey lead lights. Just as the steering correction is taking effect the main engine fails. The momentum of the vessel and wind combine to push the vessel across to the north side of the channel, where the vessel scrapes along the channel edge, just west of beacon number 2. The crew attempt to restart the engine, but to no avail.

By this time, the vessel has drifted past number 2 beacon, narrowly missing it, and is on collision course for number 1 beacon. The master calls for the anchors to be deployed but, alas and alack, they are both jammed in the hawse pipe. The wind & current take the vessel south of number 1 beacon as the crew franticly work to free the anchors. They manage to do so, just as the vessel grounds on Davey Shoal at 46° 36'.5 S 168°21'.9 E.

The vessel rests on the seabed with a 10 degree list. After doing a damage assessment it is established that the number 3 and number 4 port fuel tanks have been holed and are slowly leaking. Each tank holds about 40,000 litres of fuel.

The master alerts the Rescue Co-ordination Centre of his predicament. They, in turn, advise the Maritime NZ Oil Spill Duty Officer who, recognising the seriousness of the situation, has a quick word to the National On Scene Commander (NOSC), who in turn rings the Regional On Scene Commander (ROSC). Both soon realise that it is a Tier 3 situation.

The NOSC requests that, until such time that he and the National Response Team arrive (eta Invercargill 1630 hrs), the ROSC responds as he would for a Tier 2, bearing in mind that ultimate authority lies with the NOSC. He asks the ROSC to arrange for a NRT briefing at 1730 hrs on the situation, actions taken to date and the interim Incident Action Plan. The NOSC follows up with a quick email asking that the briefing covers the following:

- spill details – movement, amount, (Volume);
- weather and tides (Movement);
- Effects (what's in the path of the oil?);
- Fate – What will happen to the oil as it moves and weathers?
- actions to date and underway – where and what;
- resources on scene – personnel and equipment;
- current personnel – key positions, numbers, distribution;
- additional resources requested/required;
- planning – spill assessment and plan development, SCAT;

- telecommunications – means, facilities, additional requirements;
- communications – media releases, public information;
- health and safety.



T:\Policy_Planning\DallasB\Tier 2 Plan 2007\Oil Spill Contingency Plan 2007 as updated May 2010



T:\Policy_Planning\DallasB\Tier 2 Plan 2007\Oil Spill Contingency Plan 2007 as updated May 2010



Water Abstractors and Aquaculture Facilities (See Annex 2.10 for contact details). This map is a guide to permitted activity abstractors.


AREA MAP 4: BLUFF HARBOUR AND AWARUA BAY
Bluff Harbour
Awarua Bay
Do not use dispersant north of this line
Bluff
Bluff Harbour
Foveaux Strait
Shag Rock
Department of Survey and Land Information Map
Licence 1988/144: Crown Copyright Reserved.



Oil Landing Beaches

THE ORNITHOLOGICAL SOCIETY OF NEW ZEALAND

(Incorporated)

R.R.Sutton
Regional Representative
16 Vogel Street
Invercargill

Mr W.J.Tuckey
Director of Planning
Southland Regional Council

Dear Sir

Submission- Re Bluff Harbour- Oil Spill Contingency Plan

Introduction

This submission is further to your formal request for comment regarding the above mentioned matter.

The function of the Ornithological Society of New Zealand Inc. is the study of birds in a wild state in the New Zealand region. The Society is a scientific body affiliated to the Royal Society on New Zealand. The Society is constitutionally non aligned with environmental protection agencies.

Bluff Harbour- Awarua Bay

Coastal Southland's estuaries and lagoons rank among the three most important estuarine and wading areas in New Zealand. Awarua Bay and Bluff Harbour form a significant part of this local collection of such habitats.

The Ornithological Society has kept records based on reliable observations since 1962. A list of bird species recorded in the area and their status is given in Appendix 1. This list is confined to species strictly associated with the waters and mudflats of the area which could be adversly affected by an oil spill.

There two main groups involved :

1. The species which use the water directly for feeding and loafing e.g. shags,gulls, terns and waterfowl.

2. Wading birds e.g. godwit sandpipers, dotterels, oystercatchers etc. which are largly dependant on mud and sand flats for food supply and high tide margins for loafing.

It is important to note that large numbers of transequatorial migratory wading birds are present from late September to early April.Collectively there are very large numbers of these species. Awarua Bay is thus part of international wildlife habitat.

Degree of Species Vulnerability

The size of any oil spill would of course determine the general degree of adverse effect on the birds and other fauna and flora of the area within the tidal influence.

Species which would be most susceptible to oil spills would be the shags, terns, gulls, ducks, geese and swans and to a limited extent kingfishers. All spend much of their time in or on the water and has been well demonstrated elsewhere, would be rendered incapable of flight and ability to insulate themselves from cold and exposure. A high mortality is likely to result. The large scale bird rescue operation necessary would be very costly and would not resolve the real problem of habitat destruction, at least in the short term.

While the wading bird species may not be so directly affected by oil on their insulating feathers,they would most probably be very seriously indirectly affected via damage to their food supply in or on the mudflats.

Food Supply

While I would not speculate on the effects of oil on the free swimming fish in the waters of the harbour, it is certain that fish eating birds would be greatly at risk while attempting to feed.

It is reasonable to assume that a major oil spill would contaminate and coat much of the intertidal mudflat areas. This is likely to impact upon if not kill much of the invertebrate mudflat animals, shellfish and molluscs, Marine vegetation such as zostera growing in the intertidal zone upon which some waterfowl feed would at least be contaminated.

The net result of a major oil spill could be that the bulk of the food supply for large numbers of birds present, particularly during summer, could be largly eliminated or made inaccessible.

Bird Distribution

It is true to say that the shags, gulls, terns and waterfowl use the entire water areas of Bluff harbour and Awarua Bay. Stewart Island shags nest on the rock outcrops at the tip of Tiwai Peninsular at the entrance to Bluff Harbour. These shags frequent the inner harbour. Black shags and Little shags breed in the adjacent Awarua/ Waituna swamp and constantly frequent the harbour for feeding purposes.

Waterfowl do use Bluff harbour seaward of the Tiwai access bridge but generally they are mush more prevalent and very abundant on the landward Awarua Bay side of the bridge. Black swan are in large numbers seasonally and many pass through their flightless moult in this area.They would be particularly vulnerable to oil during this January/February period.

Marine feeding White-fronted terns sporadically breed in quite large numbers on Tiwai spit wildlife refuge adjacent to the bridge. Odd pairs of Caspian terns breed on elevated areas within upper Awarua Bay. Both species have a diving feeding habitat.

Wading birds of many species may be found feeding on the exposed mudflats throughout, but are generally much more prevalent and in large numbers on the landward side of the Tiwai bridge.

There are three main high tide roosting areas. Two at the extreme eastern end of Awarua Bay and one at the south side of Cow Island. See Appendix 2.

Of particular note is the important fact that the area south and generally adjacent to Cow Island is that favoured and much used by New Zealand dotterel. A portion of the Stewart Island population are present here from January to August. This species is now recognized as endangered because of low and declining numbers.

Oil Spill Strategies

As can be seen the most important part of this harbour complex from a wildlife habitat point of view is the area to the landward side of the Tiwai bridge. This area also appears to have a high general recreational use.

Oil spill strategies will no doubt be directed to containment at or near the source of discharge but strong tidal currents present considerable difficulties. Such difficulties notwithstanding, it would be highly desirable from a wildlife point of view if control techniques could be developed which could give priority to exclusion of oil spill flow from the tidal compartment on the landward side of the Tiwai bridge.

Recommendations

As an indication of priorities the following recommendations are made in respect of oil spill in relation to fauna and flora of the Bluff Harbour/Awarua Bay area.

1. Maximum containment at the point of discharge.

2. Develop a secondary strategy and techniques which would exclude oil from the inner tidal compartment landward of Tiwai bridge.

3. Have contingency plans for bird rescue and clean up as a public relations exercise.

October 1991

Appendix 1

Shags

Black shag - P.carbo - Resident and breeding in adjacent swamp areas

Little shag - P.melanoleucos brevirostris - As for Black shag

Stewart Island shag- L.carunculatus chalconotus- Resident & breeding

Spotted shag - S.punctatus punctatus- Regularly present

Waterfowl

Black swan-Cygnus atratus- Resident -numerous- moulting January/February

Canada goose- Branta canadensis - Occasionally present.

Mallard duck- A.plalyrhnchos - Resident- very numerous.

Grey Duck - A.superciliosa - Resident - small numbers

Paradise duck - Tadorna varigata - Resident - small numbers

Grey teal - A. gibberifrons - Nomadic species- regularly present

N.Z.Shoveler - A.rhynchotis variegata - Resident- numerous

Gulls & Terns

Black-backed gull -L.dominicanus- Resident & breeding- large numbers

Red-billed gull- L.novehollandiae- Marine species regularly present

Black-billed gull- L. bulleri- Resident in moderate numbers.

Caspian tern- H.caspia -Resident-low numbers- a few breeding pairs

White-fronted tern- S.striata- Marine species- up to 200 pairs occasionally breed on Tiwai spit

Gull-billed tern- G.nilotica - Rare vagrant

Kingfishers

N.Z.Kingfisher- Halcyon sancta- Present in small numbers- feeds on margins of harbour waters.

Resident Wading Birds

S.I.Pied oystercatcher- H.ostralegus- Regularly present in large numbers

Variable oystercatcher- H.unicolor- Resident in limited numbers-breeding

Spur-winged plover- V.Miles novaehollandiae- Present in moderate numbers

Pied stilt- H.himantopus- Present in moderate numbers-summer and winter

Banded dotterel- C.bicinctus- Resident and breeding-large summer flocks.

N.Z.Dotterel- C.obscurus- Present January/August-decreasing numbers

White-faced heron- A. novaehollandiae- Resident-breeds on harbourmargins.

Appendix 1 continued

Trans Equatorial Migratory Waders

Note These species are present from October to April although small numbers of the more abundant species winter over locally.

Bar-tailed godwit- L.lapponiea - Common and in large numbers

Black-tailed godwit- limosa melanurodes - Rara migrant

Knot - Chlidris conutus - Common and in moderate numbers.

Turnstone - A.interpres - Common and in large numbers.

Whimbrel - N.phaeopus variegatus - Regular visitor in very low numbers.

Curlew - Numenius madagascariensis - As for whimbrel

Greenshank- Tringa stagnatilis - Regular visitor in very low numbers.

Wandering tattler- T.incana - As for greenshank

Siberian tattler - T.brevipes - As for greenshank

Terek sandpiper - Xenus cinereus - Occasional single birds present

Sharp-tailed sandpiper - Chalidris acumenata -Regularly present low numb

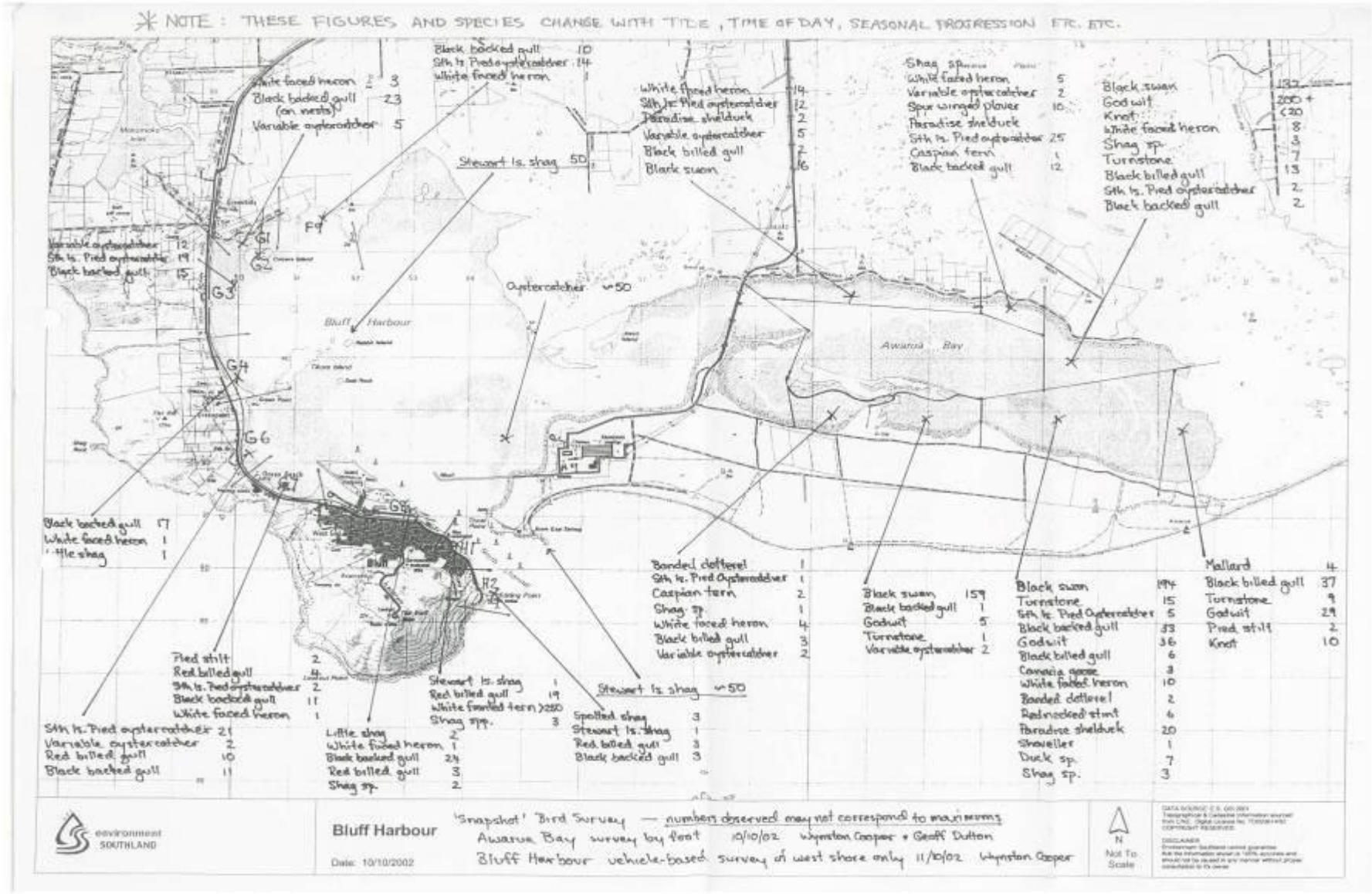
Pectoral sandpiper- C.melanotos -Regularly present in very low numbers.

Curlew sandpiper- C.ferruginea - Regularly present in small numbers

Red-necked stint - C. ruficollis- Regularly present in moderate numbers

Sanderling - C. alba - Occasional visitor in very low numbers

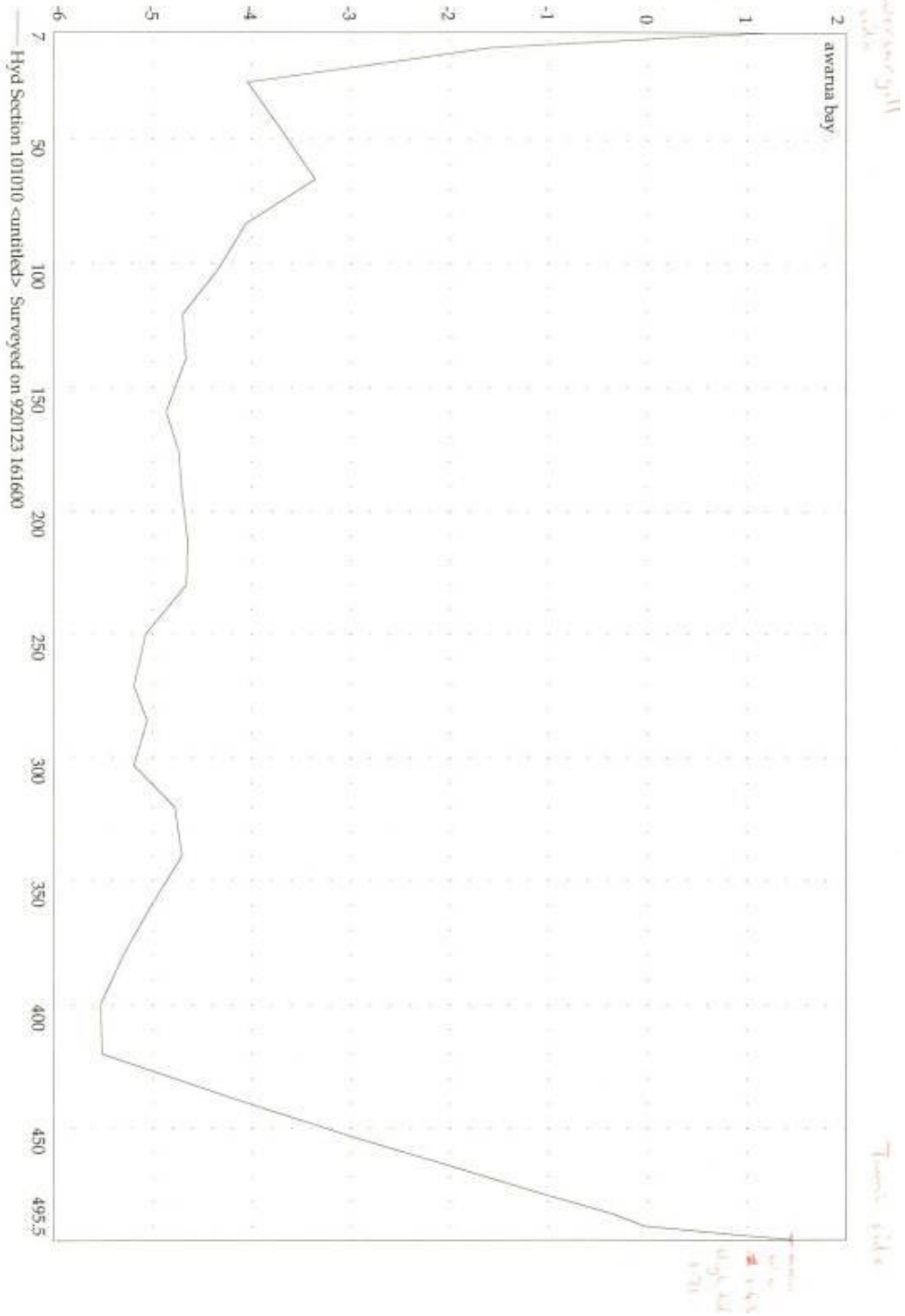
Golden plover - P. dominica fulva- Common in moderate numbers - does not winter over.


* NOTE : THESE FIGURES AND SPECIES CHANGE WITH TIDE, TIME OF DAY, SEASONAL PROGRESSION ETC. ETC.
Bluff Harbour
Awarua Bay
Oystercatcher ~50
Stewart Is. shag 50
Stewart Is shag ~50
Black backed gull 17
White faced heron 1
Pied shag 1
Pied stilt 2
Red billed gull 4
Sth Is. Pied oystercatcher 2
Black backed gull 11
White faced heron 1
Sth Is. Pied oystercatcher 21
Variable oystercatcher 2
Red billed gull 10
Black backed gull 11
Little shag 2
White faced heron 1
Black backed gull 24
Red billed gull 3
Shag sp. 2
Stewart Is. shag 1
Red billed gull 19
White fronted tern) 250
Shag spp. 3
Spotted shag 3
Stewart Is. shag 1
Red billed gull 3
Black backed gull 3
Banded dotterel 1
Sth Is. Pied Oystercatcher 1
Caspian tern 2
Shag sp. 1
White faced heron 4
Black billed gull 3
Variable oystercatcher 2
Black swan 159
Black backed gull 1
Godwit 5
Turnstone 1
Variable oystercatcher 2
Black swan 194
Turnstone 15
Sth Is. Pied Oystercatcher 5
Black backed gull 33
Godwit 36
Black billed gull 6
Canada geese 3
White faced heron 10
Banded dotterel 2
Red necked stint 6
Paradise shelduck 20
Shoveller 1
Duck sp. 7
Shag sp. 3
Mallard 4
Black billed gull 37
Turnstone 9
Godwit 29
Pied stilt 2
Knot 10
White faced heron 3
Black backed gull (on nests) 23
Variable oystercatcher 5
Black backed gull 10
Sth Is Pied oystercatcher 14
White faced heron 1
White faced heron 14
Sth Is. Pied oystercatcher 12
Paradise shelduck 2
Variable oystercatcher 5
Black billed gull 7
Black swan 16
Shag sp.
White faced heron 5
Variable oystercatcher 2
Spur winged plover 10
Paradise shelduck
Sth Is. Pied oystercatcher 25
Caspian tern 1
Black backed gull 12
Black swan 132
God wit 200 +
Knot <20
White faced heron 8
Shag sp. 3
Turnstone 7
Black billed gull 13
Sth Is. Pied oystercatcher 2
Black backed gull 2
Variable oystercatcher 12
Sth Is. Pied oystercatcher 19
Black backed gull 15
G1
G2
G3
G4
G5
G6
G7
F9
environment SOUTHLAND
Bluff Harbour
Date: 10/10/2002
'Snapshot' Bird Survey — numbers observed may not correspond to maximums
Awarua Bay survey by foot 10/10/02 Wynston Cooper + Geoff Dutton
Bluff Harbour vehicle-based survey of west shore only 11/10/02 Wynston Cooper
N
Not To Scale



Significant Wildlife Habitat Areas in Bluff Harbour

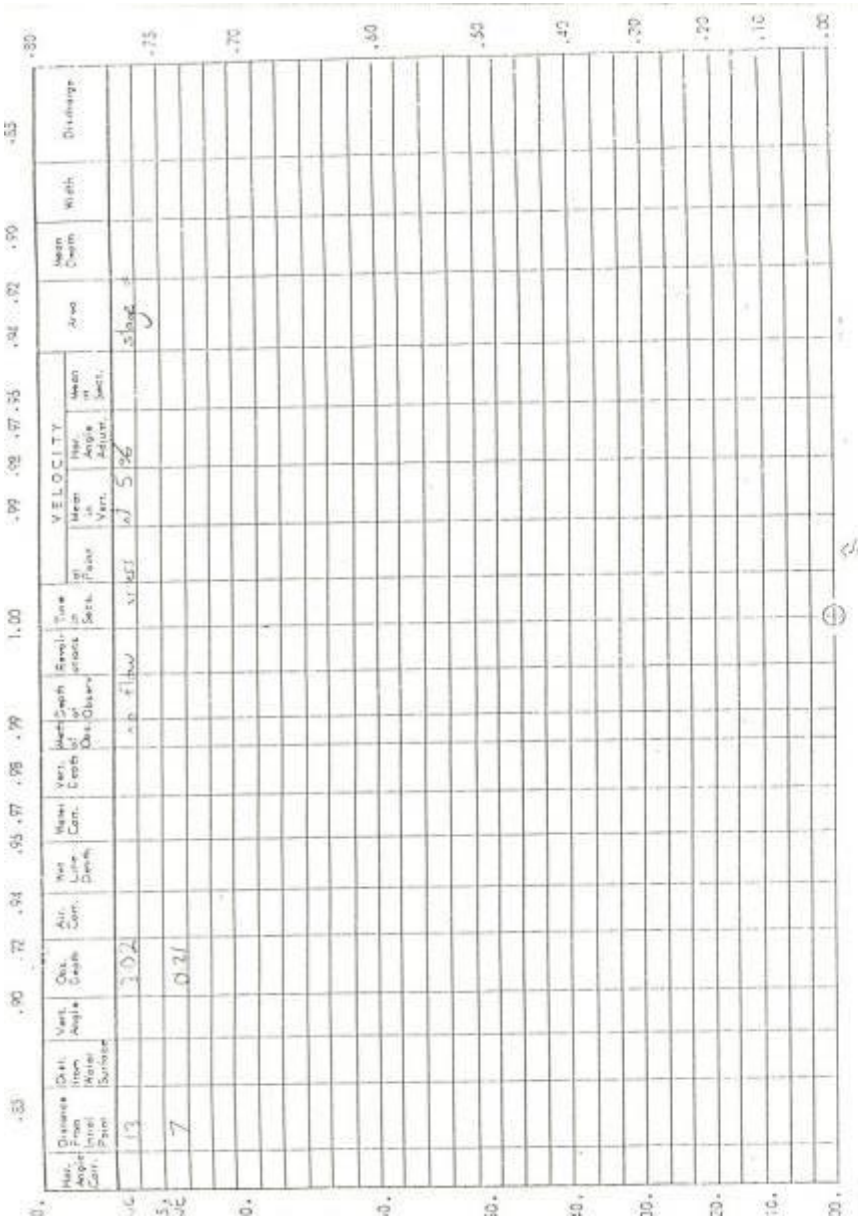
Gauging at Tiwai Bridge, Awarua Bay



Date 20-1-92 LB 523 Levels taken for Water Levels

From Awarua - Tiwai P. L.E. To (33)

BACK SIGHT	INTER-MEDIATE	FORE SIGHT	RISE	FALL	REDUCED LEVEL	DISTANCE	REMARKS
0.717					5		Abutment Assd level of 5 metres
		4.299			1.418		W/L @ 1330 NZST
1325					5		Abutment d 1455 NZST US
	1.337						Abutment " DS
		4.615			1.71		WL d 1457 NZST ⇔ NZST-1hr
					tide gain = 3mm = 1.5 mm		high tide 0-H 1357
	23-1-92						
1.026					5		Abutment d
		4.923			1.03		W/L d 1507 NZST
1.0_1					tide gain over 1hr = 1mm 3mm		
		4.512			1.514		W/L d 1616 NZST high tide Runft 1631
					mean stg for gauging = 1.435		
					high tide = 1.71		



GAUGING MEASUREMENT

MEASUREMENT NO: .....

RIVER: Nzoia Sec 6 SITE: Tuwan bridge

RIVER NO: ..... SITE NO: 10010 MAP REF.: ..... DATE: .....

PARTY: SJA MMCJ

CURRENT METER:-
TYPE .....
NUMBER F93
RATING NO. .....
DATE .....

SUSPENSION: CABLE/ROD/COMBINATION
METHOD: BOAT/CABLEWAY/SLACKLINE/BRIDGE/WADING
BOMB WEIGHT: .....kg
DIST. BOTTOM OF BOMB TO CURRENT METER: ..... mm
MEASURED .....
WATER TEMP. C

STAGE READINGS

TIME	RECORDER	WELL	S.G.
1340			

Remarks: .....

COMPUTED DATA

Site Number	.....	
Mean stage:	1.435	mm.
Discharge:	196249	l/sec
Area:	.....	sq. cm
Mean Velocity:	697	mm/sec
Max. Depth:	6960	mm.
Slope:	.....	mm/100
Width:	1885	mm.
Hyd. Radius:	.....	mm.
Wet. Perimeter:	.....	mm.
Sed Conc.:	.....	mg./l
Temperature:	.....	C*1000
Stage Change:	.....	mm./hr
Method:	.....	
Verticals:	.....	
Agency & No.	.....	
Date:	.....	
Time:	.....	

Method Codes:

01 - Pygmy rod	07 - Pygmy Cable	34 - Pygmy Combination
02 - Gurley Rod	08 - Gurley Cable	35 - Gurley Combination
06 - Small Ott Rod	12 - Small Ott Cable	42 - Soba Cable

.85 .90 .92 .94 .96 .97 .98 .99 1.00 .99 .98 .97 .96 .94 .92 .90 .85

Hor. Angle Corr.	Distance From Initial Point	Dist. from Water Surface	Vert. Angle	Obs. Depth	Air. Corr.	Wet Line Depth	Water Corr.	Vert. Depth	Mean of Obs.	Depth of Observ.	Revolutions	Time in Secs.	VELOCITY at Point	Mean in Vert.	Hor. Angle Adjust.	Mean in Sect.	Area	Mean Depth	Width	Discharge
																	1320			
	495			1.00				0.99	.4											
	490			1.46				1.46	.6											
	485			1.98				1.98	.6											
	476			2.58				2.58	.6		14	42.8	0.106				2.61	1.98		
	470			3.55				3.55												
20	454			4.39				4.39			12	41.0	0.075							
55	435			5.63				5.63			80	40.4	0.636							
50	420			6.94				6.94			105	40.2	0.938							
90	400			6.96				6.96			103	40.1	0.956							
40	380			6.73				6.73			97	40.2	0.894							
70	360			6.45				6.45			103	40.2	0.922							
70	340			6.14				6.14			103	40.4	0.898							
90	320			6.21				6.21			93	40.3	0.841							
100	303			6.62				6.62			87	40.1	0.876							
100	285			6.49				6.49			97	40.2	0.936							
70	271			6.62				6.62			99	40.2	0.974							
100	250			6.50				6.50			98	40.1	0.934							
95	230			6.09				6.09			94	40.4	0.846							
95	212			5.98				5.98			93	40.2	0.842							
98	192			6.14				6.14			82	40.5	0.750							
90	176			6.17				6.17			57	40.2	0.755							
70	160			6.30				6.30			52	40.1	0.717				1457			
	139			6.33				6.33												
	139			6.1				6.1	6		113	40	0.901			Gauged	23+1-92			
											138	40	1.101				W.L. Sebo			
																	F2.80	Slope .7319		
00	121			6.13				6.13	6		122	40	0.972							
25											125	40	0.997							
	103			5.78				5.78	6		126	40.5	0.992							
											130	40	1.037							
	84			5.49				5.49	6		120	40.5	0.972							
											134	40	1.069							
	66			4.79				4.79	6		114	40	0.909							
											135	40	1.077							
543	48			5.1				5.1	6		112	40	0.893							
25											134	40	1.033							
	27			5.48				5.48	6		122	40.5	0.975							
											125	40	0.997							

4.7 Stirling Point to Steep Head

Description
Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

The Stirling Point to Steep Head coastline consists of small rocky bays with offshore reefs and stacks, rocky outcrops and a series of small sandy beaches. The area is not an area of significant conservation value. However, fur seals occasionally haul out at Barracouta Point and around the back of Bluff Hill (see **Area Maps 4 and 5**). Omaui Island, off Steep Head, is a nesting area for Royal Spoonbills.

The coastline from Stirling Point to Cable Bay immediately south of Ocean Beach and the waters and seabed one kilometre offshore are covered by the Moupohue MataitaiSee Sections 4.5 & 4.6 for masp. The chairperson of the Mataitai Committee is Hana Morgan and the other Tangata Tiaki are Gail Thompson and Graham Metzger.

The rocky shore habitats of Stirling Point have been surveyed – see "Stirling Point - Fine Scale Rocky Shore Monitoring", Wriggle Report held by the Environment Southland Environmental Information Division (also available at http://www.es.govt.nz/media/15629/stirlingpointrockyshore2011final.pdf)

Access
There is limited vehicle access to this area with a few vehicles tracks only (refer to NZ Topo50 map). Vehicle access to just above the sandy beaches is possible through Graham Laidlaw's place (Ph 03 212 7704). Vehicle access is restricted along the coastline also. However, limited access may be possible by quadbike. Helicopters may land on the small beaches or adjoining farmland. Generally small boat landings are not recommended (rocks are a navigation hazard). There is a popular walking track around the coastline westwards from the end of State Highway One to Ocean Beach and another walking track exists around the open coast in the Greenhills area. Despite the access difficulties, the area is popular for recreational activity, especially paua gathering.

Communications
Cellphone, Environment Southland R.T, CD Controllers Net, DoC VHF, Marine VHF and M/HF, telephone from local residents,.

Preferred response options
The main spill threats for this area are a marine oil spill offshore drifting onto the shoreline or a vessel grounding. Where possible, oil should be prevented from washing onto the beach. Deflection booms are unlikely to be effective along the coastline close to shore, unless the sea is calm, as the area is exposed and subject to rough seas.

Prevention of oil reaching the shoreline may best be achieved by the use of dispersants offshore.

Beach and foreshore clean up and wildlife response if required. Oil that has washed ashore should, where possible, be contained to prevent it spreading on the next high tide.

Due to the remote location, high energy environment and lack of conservation values the "monitoring" option may be warranted if oil has already washed ashore, especially on high energy rocky shorelines.

Restrictions on options
Exposed coastline reducing the effectiveness of booms in the open coast close to shore. If oil could be contained recovery would be difficult due to the exposed conditions. Shallow water close to shore restricts the use of dispersants and may limit navigation for larger vessels. Rocky shoreline and reefs are a navigation hazard. Limited access points to the beaches.

4.8 Steep Head to North Beach including New River Estuary and Oreti Beach

Description

Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

The area consists of New River Estuary and the long sandy shore of Oreti Beach (including the Waimatuku Estuary) which culminates at North Beach on the east entrance to Riverton Harbour (**see Area Maps 5 and 6 and maps of New River Estuary**).

The Department of Conservation has identified the area within the New River Estuary (including the tidal reaches of the lower Oreti), the lagoon adjacent to the former Invercargill rubbish dump (the lagoon has high birdlife and recreational value), Waihopai and Waimatua Rivers, Mokotua Creek, Mokomoko Inlet, the area of Oreti Beach that backs onto Sandy Point Domain, and all that sea area enclosed in an arc that runs from Oreti Beach around to Steep Head as having significant conservation values. This is principally because the area contains internationally recognised wader bird feeding grounds and is a nationally important nursery area for numerous fish and invertebrate species, including galaxiids and Toheroa (on Oreti Beach south of the Taunamau Creek mouth).

The conservation value of the New River Estuary is recognised by its inclusion in the wider Awarua Waituna Lagoon Ramsar Site – see Section 4.5 for map.

A Mataitai covers that part of Oreti Beach extending from approximately four kilometres north of Ferry Road to the south end of the beach and extending half a nautical mile offshore(see map in Section 4.5). The Tangata Tiaki of the Oreti Beach Mataitai are Michael Skerrett and Cyril Gilroy. The Mataitai contains a nationally significant toheroa bed – the healthiest and most populous toheroa bed in NZ. The Mataitai is also popular for recreational flounder fishing.

Below the intertidal zone on Oreti Beach there are significant surf clam beds. The offshore area from Steep Head to Riverton is generally less than 20 metres deep.

See the Regional Coastal Plan for Southland for a more detailed description of the values of the New River Estuary (http://www.es.govt.nz/media/13565/coastal-plan-september-08-3-values-of-the-costal-marine-area.pdf).

The intertidal habitats of the New River Estuary have been mapped – see "Broad Scale Intertidal Habitat Mapping of the New River Estuary", Wriggle Report held by the Environment Southland Environmental Information Division (also available at http://www.es.govt.nz/media/12325/new-river-estuary-broad-scale-mapping-2007.pdf). There are also several Fine Scale and Macroalgal monitoring reports on the New River Estuary http://www.es.govt.nz/environment/coast/estuaries/estuarine-reports/.

The intertidal habitats of the Waimatuku Estuary have been mapped – see "Waimatuku Estuary - Fine Scale Monitoring and Macrophyte Mapping of the Waimatuku Estuary", Wriggle Report held by the Environment Southland Environmental Information Division (also available at http://www.es.govt.nz/environment/coast/estuaries/estuarine-reports/.

Oreti Beach is a very popular recreational beach. The lower Oreti River is important for recreational activity, especially rowing. It is also a popular whitebait fishery as is the Waihioai River between the railway bridge and Queens Drive.

Access

There is unlimited vehicle access to and along most of Oreti Beachfor vehicles less than 3.5 tonnes. Vehicular access onto North Beach and southwards to the Waimatuku River mouth is available for 4WD vehicles. Beach crossings of the Waimatuku mouth are not recommended. There are several vehicle access points to New River Estuary as shown on the topographical map. Access around the Estuary by vehicle is

limited. Small boat (e.g. rigid hull inflatable) access is available to most areas within the estuary. Access via a Argo (six wheeler) to most of the estuary is also available. Access along Oreti Beach and around the New River Estuary is managed by Rules 14.2.13, 14.2.14 and 14.2.18 of the Coastal Plan.

Communications
Cell phone, Environment Southland R.T, CD Controllers Net, DoC VHF, Marine VHF and M/HF.

Preferred response options
The main spill threats for Oreti Beach is a marine oil spill offshore drifting onto Oreti Beach or a vessel grounding. Where possible, oil should be prevented from washing onto the beach. Practically though, that will be difficult, firstly because of the length of beach involved and secondly, the area is exposed and subject to rough seas.

Prevention of oil reaching the beach may best be achieved by the use of dispersants offshore although there may be issues with that as well given the shallowness of offshore waters, and off shore shellfish beds including surf clams and oysters. If oil is likely to land on beaches, consideration should be given to precleaning to minimise the volume of oiled debris.

Beach and foreshore clean up and wildlife response if required. Oil that has washed ashore should, where possible, be contained to prevent it spreading on the next high tide. Vehicle use and clean up techniques along the beach and foreshore must be tightly controlled to limit damage to toheroa beds, particularly juvenile toheroa that live near the high tide mark..

It is unlikely that an offshore marine oil spill will enter very far into New River Estuary. However, if oil is entering or threatening to enter the Estuary then it should be diverted if possible towards Sandy Point or sandy beaches either west of Mokomoko Inlet or at Stanley Town, depending on the prevailing wind, for collection and recovery. Dispersants should not be sprayed in the Estuary.

The main spill threat for the New River Estuary is oil that enters the estuary via tributary streams or stormwater drains subsequent to a land based spillage or accident. However, this is unlikely to be a large threat. If such a spill does occur, the priority areas for protection are the wader bird feeding grounds on the east side of the upper estuary followed by whitebait fishingspawning areas on the Waihopai Arm and the Oreti River.

Restrictions on options
Exposed coastline reducing the effectiveness of booms in the open coast close to shore.

If oil could be contained with a coastal boom, recovery would be difficult due to the exposed conditions. Shallow water close to shore and in the Estuary restricts the use of dispersants and may limit navigation for larger vessels. Currents in excess of one knot in the entrance to the Estuary prevent perpendicular booming.


AREA MAP 5: STEEP HEAD TO ORETI BEACH
INCLUDING NEW RIVER ESTUARY
Tahuna Beds
Oreti River
Shell Banks
New River Estuary
Wader Roost
muddy
Wader Roost
sandy
rocks/sandy
Stanley Town
sandy
Department of Survey and Land Information Map
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environment SOUTHLAND

New River Estuary

Awarua Waituna Lagoon Ramsar site

Oreti Beach Mataitai

N

1:83,405

DISCLAIMER
While every effort has been made to ensure the content is correct. Environment Southland cannot guarantee the accuracy of the data. This information should not be reused in any manner without consultation.

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DATA SOURCE: ES GIS 2015



environment SOUTHLAND

New River Estuary

Awarua Waituna Lagoon Ramsar site

Oreti Beach Mataitai

N

1:83,405

DISCLAIMER
While every effort has been made to ensure the content is correct. Environment Southland cannot guarantee the accuracy of the data. This information should not be reused in any manner without consultation.

Aerial Photography dated 5/2/2007 to 24/03/2011, Copyright Terralink International Limited

DATA SOURCE: ES GIS 2015

4.9 North Beach to Pahia Point including Jacobs River Estuary

Description
Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

This area extends from North Beach to Pahia Hill and includes Jacobs River Estuary (see **Area Maps 6 and 6A**). This section of the coast is characterised by rocky shores and small bays with sandy/gravel beaches, including the two notable beaches of Colac Bay and Wakapatu (Kawakaputa Bay). Howells Point and the beaches which adjoin the Riverton Township between the Point and mouth of the Jacobs River Estuary are particularly popular places for both active and passive recreation.

The area also includes two offshore islands, Rarotoka (Centre Island) and the smaller Pig Island (Tihaka). Rarotoka is owned by the Oraka Runanga.

There are no significant conservation values identified for the entire area, including the estuary. The tidal reaches of the lower Aparima and Pourakino Rivers are very popular for whitebaiting. Whitebait also spawn on the margins of this reach. The Ourawera River Mouth in Kawakaputa Bay (Wakapatu) is also a popular whitebaiting area..

The estuary is well used for recreational activities and the lower end of the estuary is the base for approximately 30 commercial fishing boats.

New Zealand Fur Seals haulout at Pahia Point and Centre Island (Rarotoka). The offshore area, including that around Rarotoka, is a significant local fishery for paua, mussels, rock lobster and blue cod. Yellow eyed and Fiordland crested penguins live on Rarotoka and there is a Stewart Island Shag colony on Pig Island.

Bottlenosed dolphins occasionally enter the Jacobs River Estuary and Hectors Dolphins are often seen in the surf zone or nearshore along the coast.

The intertidal habitats of the Jacobs River Estuary Bay have been mapped – see "Broad Scale Mapping of Jacobs River Estuary Intertidal Habitats", Cawthron Report 856 held by the Environment Southland Environmental Information Division (also available at http://www.es.govt.nz/media/12299/jacobs-river-broad-scale-mapping-2007-08.pdf). There are also several Fine Scale and Macroalgal monitoring reports on the Jacobs River Estuary http://www.es.govt.nz/environment/coast/estuaries/estuarine-reports/.

Tier One Sites
There are no fixed facilities for fule transfers at Riverton. Fuel transfers currently occur from tanker trucks.

Access
Vehicle access is shown on the attached topographical map. There are slipways at Cosy Nook, Garden Road, Oraka Point off Colac Foreshore road and in the Riverton Harbour. There are several jetties in the Riverton Harbour. Fishing boats up to approximately 15 m may enter the estuary at high tide. The road bridge effectively confines the fishing fleet to the extreme lower reaches of the estuary.

Communications
Cell phone, Marine VHF and M/HF, DoC VFH, CD Controllers Net, hand held simplex radios. Cellphone and Environment Southland R.T. may be patchy around Pahia Hill, Colac Bay and Wakapatu.

Preferred response options
The primary spill threats for the open coast in this area is a marine oil spill offshore drifting onto the shore or a vessel sinking or grounding. Where possible, oil should be prevented from washing ashore.

Practically though, that will be difficult, firstly because of the length of coast involved and secondly, the area is exposed and subject to rough seas.

Prevention of oil reaching the foreshore may best be achieved by the use of dispersants offshore. Beach clean up and wildlife rehabilitation if required. Oil that has washed ashore should, where possible, be contained to prevent it spreading on the next high tide.

Oil from an offshore spill is unlikely to enter the Riverton Harbour. However, a spill closer to the coast could enter the harbour on an incoming tide. The main threat for Riverton Harbour and the lower end of Jacobs Estuary is a diesel spill from either refuelling activities, vessel sinking or a land based incident. These spills are likely to be small and to have largely spread before any response could be made.

The response to this type of spill should be limited to preventing further spillage, taking enforcement action, monitoring the spill, enhancing evaporation and avoiding potential fire hazard. No dispersant should be sprayed in the estuary. Some consideration should be given to the use of sorbent booms to mop up spilled diesel from near shore areas with little current flow.

Contact should be made with Ian Coard, Harbourmaster Riverton (See Annex 2.8.2 for contact details)

Restrictions on options:

Exposed coastline reducing the effectiveness of booms in the open coast close to shore. If oil could be contained recovery would be difficult due to the exposed conditions. Shallow water close to shore restricts the use of dispersants and may limit navigation for larger vessels. Rocky shoreline and reefs are a navigation hazard. Limited access points to and along the rocky shorelines. Strong currents in the lower Jacobs Estuary.


AREA MAP 6: NORTH BEACH TO WAKAPUTA POINT
Jacobs River Estuary
Riverton
Colac Bay
Lake George
Colac Bay
Oraka Point
Department of Survey and Land Information Map
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AREA MAP 6A: WAKAPUTA POINT TO OREPUKI
Orepuki
Pahia Point
Lake George
Looking South West past Lake George
Department of Survey and Land Information Map
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4.10 Pahia Point to Track Burn including Te Waewae Bay

Description (See Area Map 7)
Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

Te Waewae Bay is a shallow bay with a variable shoreline ranging from fine grained sand to gravel, cobbles and boulders. The foreshore is very mobile and much of the coast is subject to erosion. The Waiau River flows into the centre of the Bay. Te Waewae Bay is subject to diatom blooms giving the water a chocolate brown appearance which has sometimes been mistaken for oil spills.

That part of Te Waewae Bay landward of a line between Paihia Point and Port Craig forms the Te Waewae Bay Marine Mammal Sanctuary. A nationally significant population of Hectors Dolphins are regularly seen in the western inshore area of the Bay and to a lesser extent in other parts of the Bay (refer marine mammal and seabird colony maps contained in **Section 4.14 of this Annex**). Southern Right Whales are often present in Winter, predominantly at the western end.

The coast from Track Burn to Waiau Lagoon is included in an area of significant conservation value. The western portion of this reach forms part of the Hump Track. The track managers are a potential source of local knowledge regarding access to and conditions in that part of te Waewae Bay west of the Rowallan Burn (see http://www.humpridgetrack.co.nz/ for contact information).

There are toheroa beds on the Bluecliffs beach either side of the Rowallan Burn and near Orepuki between Orepuki and Monkey Island.

The Waiau River mouth and lagoon area is a very popular and important whitebait fishery. Large numbers of spotted shags and gulls congregate at the Waiau River mouth. Terns nest in the vicinity.

The generally gravel shoreline from the Waimeamea Stream to the Waikoau Stream is very active and contains a lot of driftwood.

The intertidal habitats of the Waiau Lagoon have been mapped – see "Broad Scale Intertidal Habitat Mapping of the Waiau Lagoon", Wriggle Report held by the Environment Southland Environmental Information Division (also available at http://www.es.govt.nz/media/12371/waiau-lagoon-broad-scale-mapping-2007-08.pdf. There are also several Fine Scale and Macroalgal monitoring reports on the Waiau Lagoon http://www.es.govt.nz/environment/coast/estuaries/estuarine-reports/.

Access
Vehicle access is shown on the attached topographical map. Public vehicle access from Rowallan Burn to Track Burn is restricted to beach access at half to low tide. Permission to use the private access to the Waikouau River can be obtained on an as required basis from the owners of the Rarakau block.. There is a slipway on the eastern side of the Te Waewae Lagoon at the Waiau River mouth but access to the river itself is limited by the tide. Smaller boats may be launched from the beach. The shallow nearshore waters may restrict navigation by larger vessels.

Communications
Cell Phone, Marine VHF, DoC VHF and M/HF, Environment Southland RT (partial), CD Controllers Net?, telephone from local residents, hand held simplex radios.

Preferred response options

The main threats for this area are a marine oil spill offshore or a grounded vessel. Where possible, oil should be prevented from washing onto the foreshore. Practically though, that will be difficult, firstly because of the length of coast involved and secondly, the area is exposed and subject to rough seas.

Prevention of oil reaching the foreshore may best be achieved by the use of dispersants offshore. However dispersants should not be used in the Hectors dolphin areas whilst dolphins are present without the prior approval of the Wildlife Advisor (see below). Beach clean up and wildlife rehabilitation if required. Pre cleaning of beaches and removal or repositioning of driftwood may be an option. Oil that has washed ashore should, where possible, be contained to prevent it spreading on the next high tide. Vehicle use and clean up techniques along the sandy beaches must be tightly controlled to limit damage to toheroa beds.

Oil from an offshore spill is unlikely to enter the coastal estuaries and lagoons around the Waiau River due to the net outflow of water.

Restrictions on options

Exposed coastline reducing the effectiveness of booms in the open coast close to shore. If oil could be contained recovery would be difficult due to the exposed conditions. Shallow water close to shore restricts the use of dispersants and may limit navigation for larger vessels. In addition to this, **a nationally significant population of Hectors dolphins is present in this area (refer marine mammal and seabird colony maps contained in Section 4.14 of this Annex) and consequently dispersants should not be used whilst dolphins are present without the prior approval of the Wildlife Advisor**. Rocky shoreline and reefs are a navigation hazard. Limited access points to and along the rocky shorelines.

4.11 Track Burn to Puysegur Point including the Waitutu Coast and the Solander Islands

Description (see **Area Maps 7 & 8**)
Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

The coastline from the Track Burn south to almost Sandhill Point and from The Waitutu River Mouth to Puysegur Point adjoins the Fiordland National Park. The stretch between the two from Sandhill Point to the Waitutu River Mouth is in private ownership.

This coast consists of mostly inter-tidal platforms and rocky reefs, backed by small sandy bays, sandy beaches and river mouths. In many places there is no beach at high tide, the sea running right up to the base of the cliffs.

The broad intertidal platforms can extend hundreds of metres offshore. These platforms are enclosed within an area of significant conservation value that extends from Big River to five kilometres west of Sand Hill point. There is a significant paua and rock lobster fishery along the Waitutu Coast.

The Waitutu Mataitai extends for approximately three kilometres west of the Wairauhuri River mouth and about 750 metres seaward. The Tangata Tiaki are Graham (Tiny) Metzger, John Simon, Larraine White, Jane Davis and Dene Cole. Tiny Metzger is the chairperson of the Mataitai Committee.

Fiordland Crested Penguins occur at Big River. The Solander Islands contain NZ's largest Fur Seal Colony outside the subantarctic islands. It is also a major breeding area for Fiordland Crested Penguins and also contains nearly half the known population of Southern Bullers Mollymawk (see also **Section 4.14 of this Annex**). Little Solander Island contains NZ's southernmost gannet colony.

The biggest oil spill risk is from shipping accidents, principally local fishing boats.

Access
There is no vehicle access to these areas. Boat access and helicopter access only. Boat access may be hazardous in places due to the rocky platforms. Small "harbours" or anchorages exist at Gates Harbour and "Knife and Steel" Harbour on the south coast.

Communications
Cellphone (partial), Marine VHF, DoC VHF (Longwood), Marine M/HF (Single Side Band).

Preferred response options
The main threats for this area are a marine oil spill offshore or a grounded vessel. Where possible oil should be prevented from washing onto the foreshore areas. Practically though, that will be difficult, firstly because of the length of coast involved and secondly, the area is exposed and subject to rough seas. Prevention of oil reaching the foreshore may best be achieved by the use of dispersants offshore. Beach clean up and wildlife rehabilitation if required. Oil that has washed ashore should, where possible, be contained to prevent it spreading on the next high tide. However, due to the remote and rugged nature of the foreshore this is unlikely to be practicable. If oil is onshore, resources will probably be fully committed to an oiled wildlife response.

Once the oil has washed ashore, clean up could be confined to the principal haulout areas. The "monitoring" option may be warranted in remote locations where wildlife is not at risk.

Restrictions on options
No vehicular access. Exposed coastline reducing the effectiveness of booms in the open coast close to shore. If oil could be contained recovery would be difficult due to the exposed conditions. Shallow water

close to shore restricts the use of dispersants and may limit navigation for larger vessels. Rocky shoreline and reefs are a navigation hazard. Access to the Solander Islands by boat is difficult.


AREA MAP 7: PAHIA POINT PUYSEGUR POINT
INCLUDING TE WAEWAE BAY
Te Waewae Bay
Centre Island
Pt. F.N.P.
Codfish Island
Department of Survey and Land Information Map
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4.12 Puysegur Point to Awarua Point including the Fiordland Coast and all the Fiords and Sounds

Description
Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

This stretch of coast consists of long narrow sounds, rugged outer coast with stacks and reefs, U-shaped fiords with steep sea cliffs, hanging valleys and sheltered coves at the end of the sounds (see **Area Maps 8, 9, 9A and 9B**).

The entire area is an area of significant conservation value and borders the Fiordland National Park, which is part of a World Heritage Area. Many of the fiords/Sounds contain marine reserves (see attached map).

Many of the fiords contain pest free islands which are now being used for endangered species management. The threat of reinvasion of these islands by rats or mustelids from either sunken or grounded vessels, or vessels operating in support of an oil spill response is a significant issue for the Department of Conservation. A map showing pest free islands is on page 37 of "Beneathe The Reflections" http://fmg.org.nz/sites/default/files/fiordland_user_guide.pdf

The Fiordland Marine Oil Spill Contingency Plan (see Morf qA5799) has been prepared by Maritime NZ to cover spill responses in Milford, Doubtful, Breaksea and Dusky Sounds, the areas used by cruise ships. It is to be used in conjunction with this Plan and the National Marine Oil Spill Contingency Plan.

The fiords are the habitat of several endangered, rare and threatened bird species, including some that use tidal areas at fiord heads and at river mouths. For example, the blue duck at river mouths, reef heron, white heron and the mottled petrel. The fiords are a significant habitat for the protected black and red corals. For wildlife information contact Lindsay Wilson, the DoC Biodersity Manager at Te Anau.

Due to the extensive nature of this coastline it is not possible to fully describe all the wildlife in the area. However, **Section 4.14 of this Annex** outlines the significant NZ Fur Seal, Hookers Sealion, Bottle Nosed, Dusky and Hectors Dolphins, Fiordland Crested Penguin and Seabird colonies. The smaller letters denote presence in the area rather than significant colonies. **Section 4.14** also contains specific information on the numbers and location of bottlenosed dolphins in Doubtful, Milford and Dusky Sounds. Doubtful Sound and the Arms thereof contain three extensive "Dolphin Protection Zones" that extend 200 metres from the shoreline – see page 40 of "Beneathe The Reflections" http://fmg.org.nz/sites/default/files/fiordland_user_guide.pdf

Mottled petrel and sooty shearwaters nest on some headlands.

The whole of Fiordland is important to Iwi. It should be noted that for consultation purposes, the area between Long Reef at the north end of Martins Bay to Awarua Point, the northern boundary of the Southland region, is beyond the Murihiku Runanga Rohe. As such the Makaawhio Runanga from the West Coast need to be consulted regarding any oil spills in this area.

A vulnerability assessment for Doubtful Sound was prepared by Wriggle Consultants for Environment Southland in September 2008. It is entitled "Doubtful Sound – Vulnerability Assessment & Monitoring Recommendations". An electronic copy is available on Environment Southland's electronic record system (A99958).

All of the Fiords have to a greater or lesser degree a surface layer of freshwater (low salinity layer), in particular Doubtful Sound that is affected by the discharge of freshwater from Lake Manapouri via an

underground tailrace that is part of the Manapouri hydroelectric power scheme. See Annex 5.5.1 for a report on the effects of this layer.

A report entitled "Marine Ecology of Inner Milford Sound" (A184360) prepared by Ken Grange in March 1986 describes the environmental values of inner Milford Sound.

Reports entitled "Assessment of Effects on the Marine Environment Associated with the Proposed Relocation of the Breakwater in Freshwater Basin, Milford Sound" (A184350) by Ryder Consulting in Nov. 2005 and "Intertidal ecology of Freshwater Basin, Milford Sound" (A 184351) by Ken Grange in Oct. 1985 describe the environmental values of Freshwater Basin. Copies of the above reports are held in the Evironment Southland electronic records system.

Tier One Sites
There are Tier One sites located at each of the major "ports", Milford Sound (2) and Deep Cove.

Access
Vehicle access to these areas is limited to Milford Sound and, to a much lesser extent, Doubtful Sound. The road to Milford Sound is often closed in winter due to snow or avalanche danger. Vehicles using the Milford Road from 1 May to 30 November must carry chains. Chains can be hired in Te Anau (see attached emails) Access to Doubtful Sound is really only available to about half a dozen buses and up to twenty 4WD's or service vehicles permanently located in the Deep Cove or West Arm (Lake Manapouri) localities. However, other vehicles or equipment can be brought in by barge via Lake Manapouri when needed.

Elsewhere there is only boat, helicopter or float plane access. Boat access may be hazardous on the open coast due to the rocky platforms and reef systems. Boat access within the fiords is virtually unlimited, although anchoring can be difficult due to the sheer depth of water.

Except for areas that are easily accessed by vehicle the quickest, most effective and **preferred** means of responding is by helicopter. Access via float plane from Te Anau is also an option in some cases.

Communications
Marine VHF in Fiordland, Marine M/HF (Single Side Band) & Satellite phone. (For communications expertise, contact Pania Dalley, DoC, Te Anau, 03 2490002 or pdalley@doc.govt.nz)

Preferred response options
For spills in Milford Sound, Doubtful Sound/Thompson Sound, Bradshaw Sound, The Archeron Passage and Dusky Sound, the response should in the first instance be guided by the **Fiordland Marine Oil Spill Contingency Plan.** Aspects of this Plan will also be relevant to spills in other parts of Fiordland. (See also the scenarios and associated Incident Action Plans developed for spills at Freshwater Basin at Milford Sound, Dusky Sound, Grono Bay and Blanket Bay, Secretary Island at Doubtful Sound at the end of this section.

In planning a response in Fiordland, an advisor from the Fiordland Marine Guardians, an advisory group established under the Fiordland (Te Moana o Atawhenua) Marine Management Act 2005 should be consulted (see Annex 2.8.1). In planning a response in Milford Sound, Andrew Welsh from The Milford Sound Development Authority should be consulted. Andrew has attended a Maritime NZ Regional Responders Course and is also leader of the Milford Sound Emergency Response Team.

The most significant marine oil spill threat for this area is from a shipping accident either offshore or in the sounds. Other sources include bunkering operations and fuel storage/transfer facilities associated with the fishing and tourism industries. There are refuelling jetties in Milford and Doubtful. The permanent facilities have Tier 1 plans. Where possible, oil should be prevented from going onto the foreshore areas or entering into the sounds. Practically though, that will be difficult, firstly because of the length of coast involved and secondly, the open coast is exposed and subject to rough seas. Secondly,

most of it is remote and it will take several hours to get oil spill response equipment and personnel into the area.

It may be possible to use booms to contain and recover a spill in the calmer waters of the sounds (see Annexes 6.5.1 & 6.2.5 respectively for particular current information for Doubtful Sound and Deep Water Basin, Milford Sound). However, the response time required to set the booms in place and in some cases, water depth, are significant constraints to containing a spill. Sorbents may assist the recovery of oil trapped in small coves etc along rocky shorelines.

Prevention of oil reaching the foreshore may best be achieved by the use of dispersants offshore where dispersant is known or proven to be effective. In the Fiords or Sounds themselves, the use of dispersants may be limited by the presence of a freshwater surface layer. For more information on dispersant effectiveness in freshwater, see **Chapter 9** (Dispersant Selection) of the National Plan. Dispersants should not be sprayed in Marine Reserves (refer attached maps) or in areas where Bottlenosed, Dusky and Hectors dolphins are present, such as Doubtful Sound (refer marine mammal and seabird colony maps at the back of this Annex and see Restrictions on Options, below). Beach and foreshore clean up and wildlife response if required. Oil that has washed ashore should, where possible, be contained to prevent it spreading on the next high tide.

Once the oil has washed ashore, the "monitoring" option may be warranted in remote locations where wildlife is not at risk.

The response to diesel spills should be limited to preventing further spillage, containment to prevent spread where practicable (eg. Freshwater Basin, Milford Sound), monitoring the spill, allowing evaporation and avoiding potential fire hazard. No dispersant should be sprayed but sorbents should be considered as a means of cleaning up spilled fuel, especially where the fuel is trapped in sheltered embayments, basins, along shorelines or high use easy access areas.

Restrictions on options
Remoteness and very limited vehicular access. Exposed coastline reducing the effectiveness of booms in the open coast close to shore. If oil could be contained recovery would be difficult due to the exposed conditions. Shallow water close to shore restricts the use of dispersants and may limit navigation for larger vessels. Rocky shoreline and reefs are a navigation hazard. Remoteness and lack of support facilities for prolonged response**. Dispersants should not be sprayed in Marine Reserves (refer to maps) or in areas where dolphins are present, such as Doubtful Sound (refer marine mammal and seabird colony maps contained in Section 4.14 of this Annex) without the prior approval of the Wildlife Advisor.** Furthermore, some dispersants are ineffective in freshwater. A freshwater surface layer of varying depth exists to a greater or lesser degree in several fiords, especially Doubtful Sound **(see Annex 5.5.1).**

Proximity to pest free islands may present a limitation on response activities, especiaaly the location of staging areas, forward command posts etc. In a similar vein, concern about the potential to introduce foreign organisms, in particular undaria, may limit the choice of vessels used in the response.

Deep water in the fiords (up to 400 m) makes it difficult to anchor booms.

Scenario No 1 for Discussion

Location:	Freshwater Basin
Date:	0930 hours Sunday 17 January 2010
Weather:	Calm, overcast with filtered sun, temperature 14°
Weather Forecast:	overcast, light sea breeze, 19 ° maximum, no rain
Tide:	High tide at 1330 hours, approximately 1.5 m tidal range, Water temp 14°

At about 0930 hours the crew of the Milford Wonder were making a greater than normal effort to get their vessel shipshape and spic and span knowing that later in the day they would be hosting the Minister of Tourism, the Mayor or Southland and Senior DoC personnel. It is thought that Bill English and a few other MPs holidaying in the Queenstown/Te Anau area, and representatives from Destination Fiordland, may be joining them as well.

After having changed the fuel filter and bleed the injectors, the engineer was returning to shore with a 20 litre bucket containing the old filters and about 15 litres of diesel when he tripped on a hose that was running along the wharf. He fell to the wharf and the contents of the bucket spilled into the water and started to spread around the harbour.

By 1000 hours the boom had been placed across the entrance to the harbour as a precaution but as it turned out it wasn't really needed as the rising tide was keeping the diesel in the harbour.

ES was advised and had stated that if the fuel could not be physically removed with sorbents the preferred response was to allow the diesel to disperse naturally.

Staff from the tourism companies did what they could with sorbents from the oil spill shed but it wasn't easy. It was a busy day and most staff were involved with the boats that wanted to keep on operating, taking passengers that were arriving by bus on their planned cruises.

By 1100 hours the situation had not improved markedly.

There was a strong rainbow sheen on the water and a heck of smell of diesel. The boom had been moved to enclose the least used part of the harbour.

The manager of the tourism company rang ES to see if they could put detergent on the diesel, ES said "no way".

The manager expressed concern about the state of the place would be in when the Prime Minister arrived – tourists were already screwing up their noses and taking photos of the mess. All ES could do was advise the manager to start working on his explanations.

The manager pleaded with ES to be more helpful saying that the aesthetics of the harbour/visitor centre were more important than the critters in the water (and there weren't many anyway– "we dredge it every year you know").

Feeling the pressure the ES Regional On Scene Commander said he would look at it further and see what could be done. The ROSC then turns to his trained oil spill response managers and says "Let's explore the options again, including the dispersant option, assuming that we can get some to them in time. Remember the concept of "Net Environmental Benefit".

Incident Action Plan – Scenario No 1 (June 2009)

1. Be upfront and frank about the situation as early as possible. Explain clean up underway.
2. Divert dignitaries to an alternative destination if possible.
3. Prefer to contain or herd/concentrate and clean up with sorbents.
4. Dispersant an option for "polishing".

Scenario No. 2

Location: Doubtful Sound
Date: 1500 hours, Friday 30 July 2010
Tide: High tide at 1350 hours

While on an overnight cruise of the sounds, the New Zealand owned passenger vessel – Doubtful Lady, (40m length overall) was transitting from Bradshaw Sound in a fresh breeze from an easterly quarter towards First Arm where it intended to moor overnight after circling Bauza Island.

As it passes Omapere Rock on its starboard side the wind suddenly strengthens to the point where the vessel is struck by immense south east winds estimated to be 80-90 knots.

The vessel is unable to maintain its course and is blown onto the south shore of Secretary Island just east of Renown Rock. In the process the vessel is disabled and holed. The fuel tank on its starboard side is holed resulting in the almost immediate loss of 8000 litres of diesel into the sea. It is understood that the vessel had approximately 28,000 litres of fuel on board in two tanks, one on each side of the vessel.

The vessel puts out a Mayday call which is picked up by RCCNZ who in conjunction with the Police organise for the passengers to be rescued.

ES is notified of the incident at 1550 hours. An Incident Management Team is assembled, including you, and the ROSC has asked you to prepare an Incident Action Plan. He has also asked that consideration initially be given to what can be done today.

Reports are filtering through that the wind has abated somewhat and that no more than light easterlies are expected after 1700 hours.

An update on the situation with the vessel can be expected at 0800 hours tomorrow morning.

Incident Action Plan – Scenario No 2 (June 2009)

1. Discuss potential Tier 3 response with Maritime New Zealand (refer Fiordland Marine Oil Spill Plan).

2. Aerial surveillance (photos etc). Helicopter preferred.

3. Alert response team (heads up and standby):

   - oiled wildlife co-ordinators;
   - wildlife advisor;
   - Department of Conservation;
   - Meridian people at Manapouri.

4. Liaise with Police and RCCNZ.

5. Run scenarios (ADIOS).

6. Prevent further spillage – liaise with ship's owner/insurer.

7. Ascertain people and plant requirements – West Arm equipment (boat).

8. Identify most at risk areas (see Tier 2 and Fiordland plans).

In this section:

- Plan & prepare
  - Diver safety in the fiords
  - Maps & boundaries
    - Hawea (Clio Rocks)
    - Kahukura (Gold Arm)
    - Kutu Parera (Gaer Arm)
    - Moana Uta (Wet Jacket Arm)
    - Piopiotahi (Milford Sound)
    - Taipari Roa (Elizabeth Island)
    - Taumoana (Five Fingers)
    - Te Awaatu Channel (The Gut)
    - Te Hapua (Sutherland Sound)
    - Te Tapuwae o Hua (Long Sound)
  - You can help

Maps & boundaries



Map of Fiordland's marine reserves. Click on the name of a marine reserve to view a more detailed map of that reserve, with GPS boundary points.

From DoC website http://www.doc.govt.nz/parks-and-recreation/places-to-visit/fiordland/western-fiordland/fiordlands-marine-reserves/plan-and-prepare/maps-and-boundaries/

7.12

Dallas Bradley

From: Les Mcgraw
Sent: Friday, 20 June 2003 16:09
To: Dallas Bradley
Subject: Milford Photos

Those 2 photos are in;

Photography_Data\Scans\A0672\A0672-0420-09 (Old Photo No 672-13)

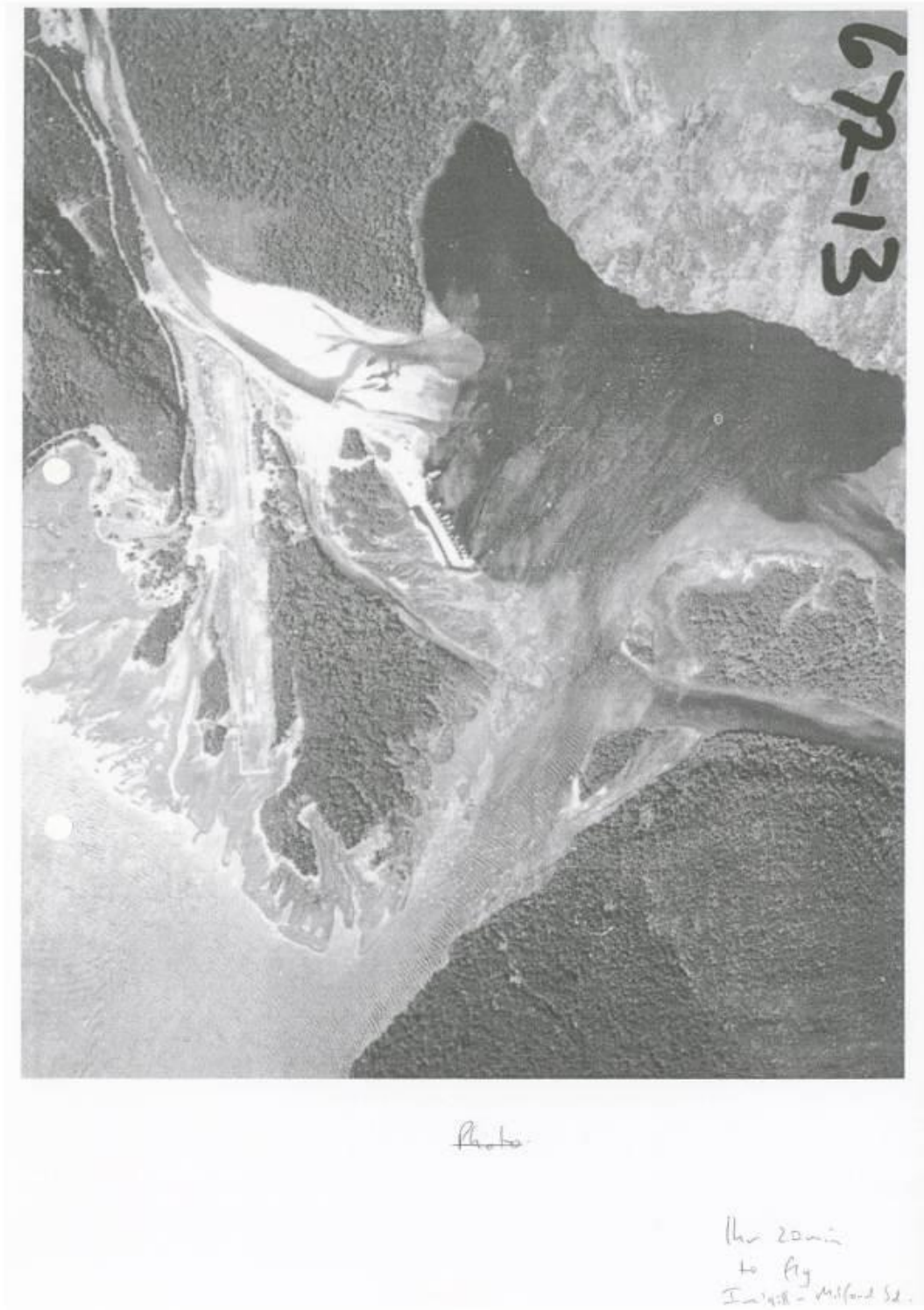
Photography_Data\Scans\A0672\A0672-0420-10 (Old Photo No 672-14)

Cheers - Les

Les McGraw
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...vercargill
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Phone +64 3 215 6197
Fax +64 3 215 8081
mailto:les.mcgraw@es.govt.nz
ES Web Site http://www.es.govt.nz

Note Wind Patterns.

1



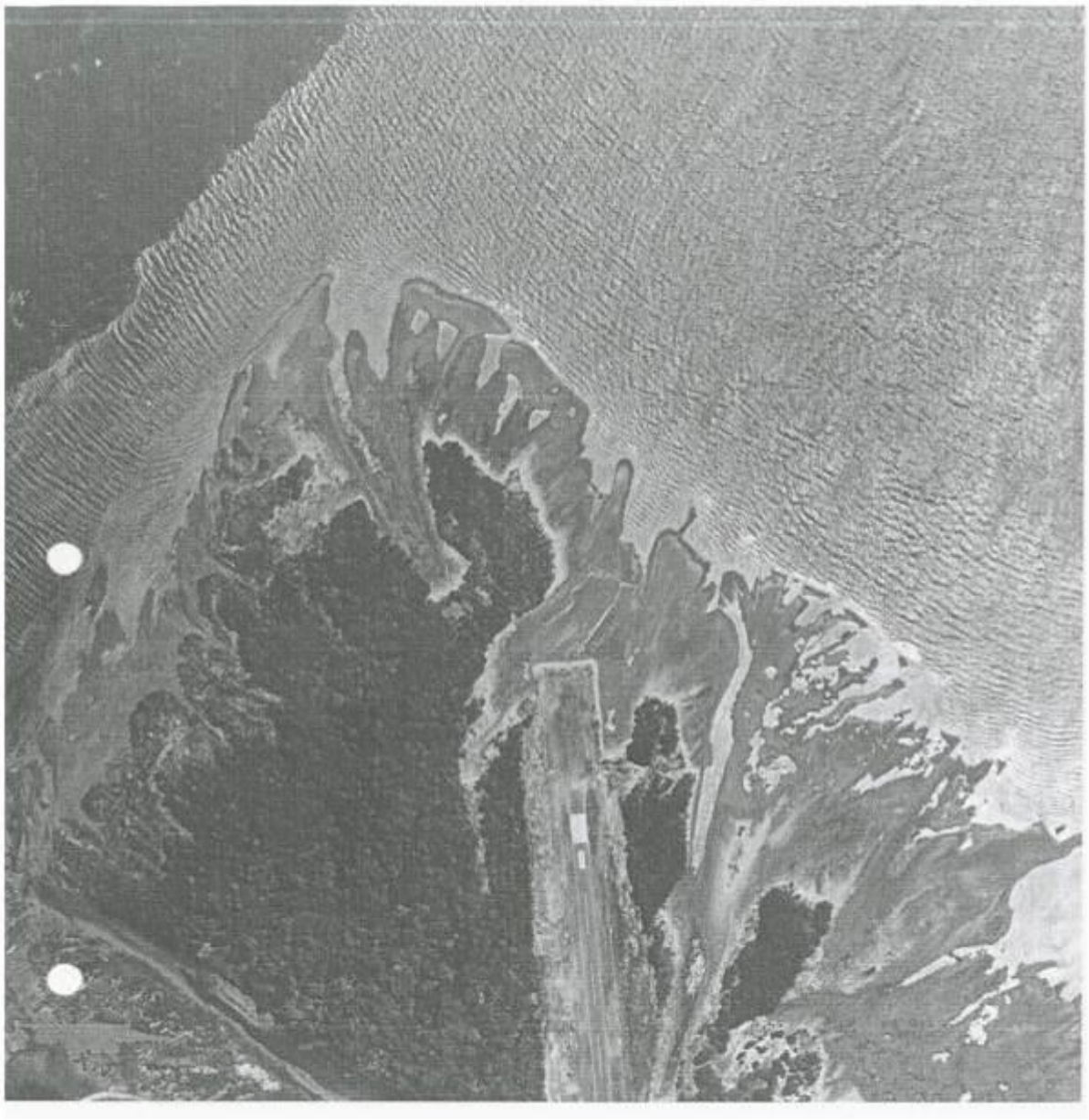
Head of Milford Sound – Note wind patterns



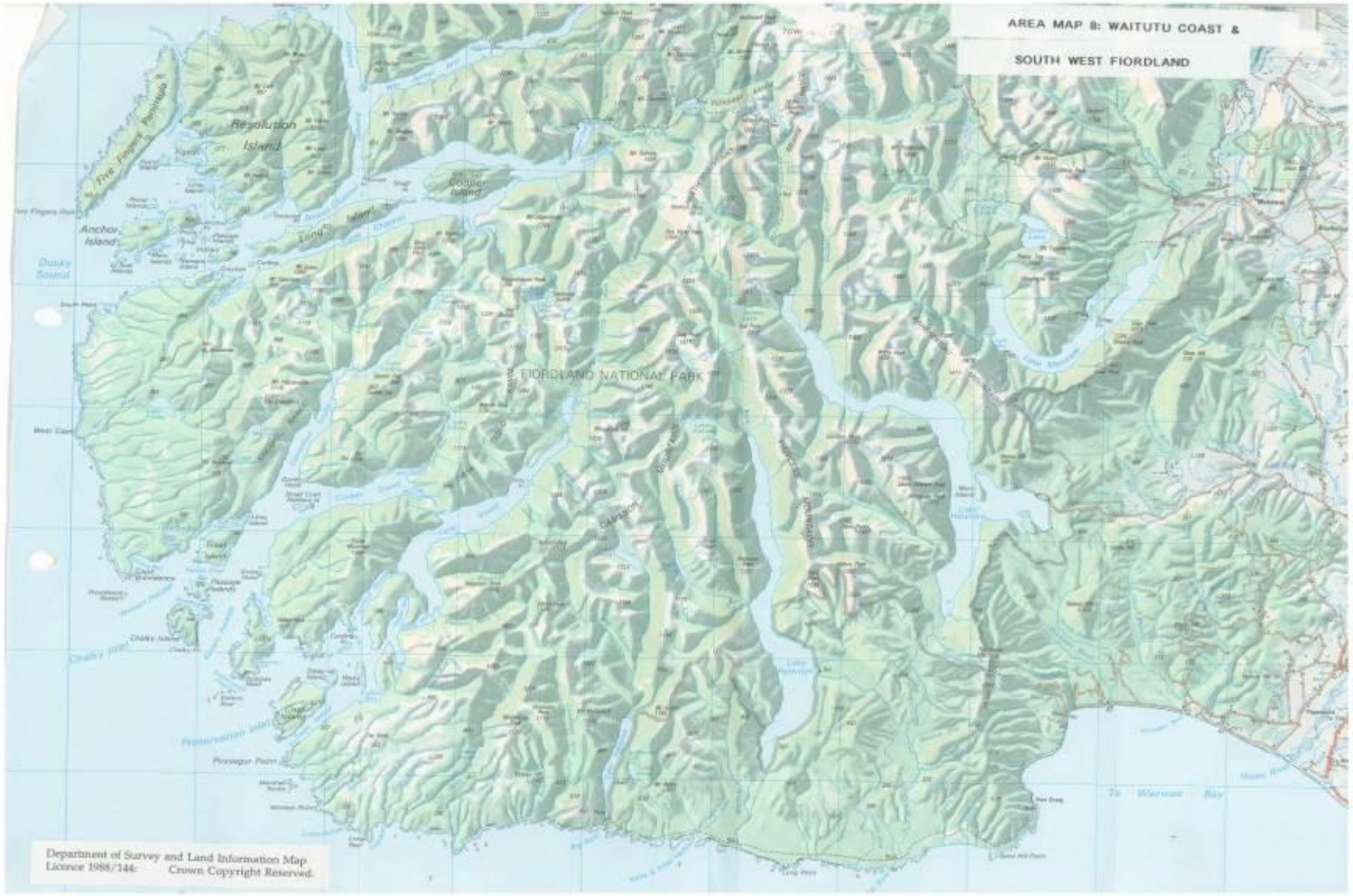
Head of Milford Sound – note wind patterns



Arthur River Mouth, Milford Sound – note wind patterns.



Head of Milford Sound - note wind patterns


AREA MAP 8: WAITUTU COAST &
SOUTH WEST FIORDLAND
Resolution Island
Anchor Island
Long Island
Dusky Sound
FIORDLAND NATIONAL PARK
Department of Survey and Land Information Map
Licence 1988/144: Crown Copyright Reserved.


AREA MAP 9: DUSKY SOUND TO DAGG SOUND
Secretary Island
Dagg Sound
Resolution Island
Five Fingers Peninsula
Five Fingers Point
Anchor Island
Dusky Sound
Cooper Island
Long Island
Breaksea Sound
West Jacket Arm
Broughton Arm
Screen Channel
Lost Channel
Porpoise Channel
Toming Head
South Point



AREA MAP 9A: DAGG SOUND TO GEORGE SOUND

Department of Survey and Land Information Map
Licence 1988/144. Crown Copyright Reserved.


Department of Survey and Land Information Map
Licence 1968/144: Crown Copyright Reserved.
FIORDLAND NATIONAL PARK
AREA MAP 9B: GEORGE SOUND TO AWARUA POINT

4.13 Stewart Island, Ruapuke Island, Codfish Island and Muttonbird (Titi) Islands and associated islands

Description

Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

Stewart Island's 800 kilometres of coastline offers a diverse range of coastal landscapes and the waters that adjoin it are an important fishery for rock lobster, paua, dredge oysters (see attached map for the location of the principal beds) and blue cod. Salmon and mussels are also farmed in Big Glory Bay in Paterson Inlet. The coast includes Paterson Inlet, Port Pegasus, Port Adventure and Lords River, large bodies of relatively sheltered water in what is otherwise an exposed and dynamic coastline.

Paterson Inlet includes a marine reserve and a Mataitai (see map below - The Mataitai Committee Chair is Phillip Smith and the other Tangata Tiaki are Maureen Jones, Peter Goomes and Richard Squires).

Other Mataitai are located adjacent to Owens Island (Horomamae), Kaihuka and Womens Island (Piko Mamaku) - See maps below. The Horomamae Tangata Tiaki are Phillip and James Ryan, the Kaihuka Tangata Tiaki is Gail Thompson and the Piko Mamaku Tangata Tiaki are Graham Metxger and Michael Stevens.

Ulva Island within Paterson Inlet is a rat free bird sanctuary.

Broadscale Habitat Monitoring of the Freshwater River Estuary (Freshwater Estuary) at the head of Paterson Inlet was undertaken in 2007 (http://www.es.govt.nz/media/12279/freshwater-estuary-broad-scale-mapping-2007-08.pdf). Since then several Fine Scale monitoring reports have been prepared (see http://www.es.govt.nz/environment/coast/estuaries/estuarine-reports).

All the coast of Stewart Island, its offshore islands and all the waters within five kilometres of the mean high water spring is an area of significant conservation value. Within these areas many values of national or regional significance have been identified. Whenua Hou (Codfish Island) is rat free and it is an important sanctuary for endangered species including Kakapo and Campbell Island Teal. The Titi or Muttonbird Islands on the south west, eastern and northern coasts of Stewart Island are very important to the Tangata Whenua as well as having high conservation values. As such Tangata whenua are particularly concerned about protecting Titi or Mutton Bird (sooty shearwater, a species of petrel) from the effects of spilled oil. Large numbers of Titi feed on the entire open coastal water from the months of October through to May.

Ruapuke Island is a privately owned island with various parcels being owned by various maori owners. See Annex 2.12 for the appropriate Kaitiaki and landowners to contact in the first instance if a spill threatens the island.

Due to the extensive nature of this coastline it is not possible to fully describe all the wildlife in the area. However, **Section 4.14 of this Annex** outlines the significant NZ Fur Seal, Hookers Sealion, Bottle Nosed, Dusky and Hectors Dolphins, Fiordland Crested Penguin, Yellow Eyed Penguin and Seabird colonies (including Titi). The smaller letters denote presence in the area rather than significant colonies.

Around Halfmoon Bay at Oban there are many small colonies of Little Blue penguins, especially on the south side and around Bathing and Butterfields Beaches. By the wharf itself, up to 6 pairs inhabitat the area amongst the rocks adjacen to the fuel tank. There are also Fiordland Crested penguin colonies at Dead Mans Beach and Horseshoe Point.

Tier One Sites

There is a Tier One site at Halfmoon Bay (Allied Petroleum Ltd)

Access
Apart from approximately 6 km of coast near Oban, Stewart Island, there is no vehicle access to these areas. Boat access, helicopter, plane and floatplane access only. Boat access may be hazardous in places due to the rocky platforms, surf and reef systems. Planes land on Doughboy and Mason Bays, Little Hellfire, West Ruggedy and Smoky Beaches (all on the west coast of Stewart Island). Planes also land on the beach on the north side of Codfish Island subject to DoC approval. Landing is restricted to within an hour or two of low tide, depending on the weather and the size of the tide.

Accommodation
Apart from Oban, there is no commercial accommodation on Stewart Island. There are however, various tramping and hunting huts that may be available for oil spill responders (see DoC). The location of the hunters' huts at Port Pegasus are noted on an attachment to this section. DoC staff will be able to advise on the whereabouts and availability of other huts.

Charter vessels may be an alternate potential source of accommodation for spills in or near to sheltered waters.

Communications
Marine VHF, DoC VHF, Environment Southland Net (from air) CD Controllers Net (from air), Marine M/HF (Single Side Band), satellite phones, cellphones also work oalong the northern coast (see cell phone provider's maps on their websites)

Preferred response options
The attached outcome of a 2007 tabletop exercise sets out an Incident Action Plan (IAP) for a particular scenario in Port Pegasus. This IAP is, to a large extent, generic to any response in Port Pegasus and other remote areas of Stewart Island as well.

Also attached is an Incident Action Plan (IAP) for a 2011tabletop exercise scenario in Paterson Inlet. This IAP is, to a large extent, generic to any response in Paterson Inlet.

With almost any spill in and around Stewart Island, contact the DoC Southern islands area manager for advice and assistance with boats (see also Annex 1.7). Contact the Wildlife Advisor based in Invercargill on the procurement of other DoC resources.

The most significant threat for this area is an oil spill resulting from a shipping accident or a marine oil spill offshore. Where possible, oil should be prevented from drifting onto foreshore areas. Deflection booms are unlikely to be effective along the coastline close to shore, unless the sea is calm. Even if it is deflected it will wash up somewhere else but it may be possible to deflect the oil away from a particular sensitive area.

Prevention of oil reaching the foreshore may best be achieved by the use of dispersants offshore. Dispersants should not be sprayed in Paterson Inlet, Big Glory Bay or Port Pegasus without reference to the Wildlife, Fisheries, Iwi and Mataitai Advisors. Beach and foreshore clean up and wildlife rehabilitation if required. Oil that has washed ashore should, where possible, be contained to prevent it spreading on the next high tide.

Once the oil has washed ashore, the "monitoring" option may be warranted in remote locations where wildlife is not at risk.

Another spill threat is a diesel spill at the refuelling jetty at Halfmoon Bay. The response to this type of spill should be limited to preventing further spillage, containment of spread where practicable, monitoring the spill, allow evaporation and avoiding potential fire hazard. No dispersant should be sprayed. The use of sorbents should be considered to mop up oil from sheltered covers or areas of high use. There is a small little blue penguin colony in the rocks immediately to the north west of the wharf.

Restrictions on options
Limited vehicular access. Exposed coastline reducing the effectiveness of booms in the open coast close to shore. If oil could be contained recovery would be difficult due to the exposed conditions. Shallow water close to shore restricts the use of dispersants and may limit navigation for larger vessels. Rocky shoreline and reefs are a navigation hazard. Lack of facilities for a prolonged response. Dispersant use in Paterson Inlet, Big Glory Bay or Port Pegasus will be limited.

The presence of naturally significant oyster beds in Foveaux Strait may also limit dispersant use.

Site Description Sheets, Oil Spill Response Option and consideration tables, and Maps for the coastline from Stirling Head at the entrance to Port Adventure to Gull Rock Point, Bungaree Beach including Paterson Inlet and the Eastern Muttonbird Islands.

Detailed Site Description Sheets, Oil Spill Response Option and consideration tables, and Maps for the coastline from Stirling Head at the entrance to Port Adventure to Gull Rock Point, Bungaree Beach including Paterson Inlet and the Eastern Muttonbird Islands follow. These documents were prepared by ERM Ltd on behalf of Maritime NZ. The full document, especially the maps is best viewed on Web EOC. It can be located under "working documents" in the Southland Tier Two Plan section.

PATERSON INLET - SOUTHLAND

OVERARCHING SITE DESCRIPTION

The Paterson Inlet/Stewart Island site extends along the eastern coast of Stewart Island from Gull Rock Point in the north to Port Adventure in the south and includes all of Paterson Inlet, Big Glory Bay, the settled area of Oban and offshore islands out to and including the Eastern Muttonbird Islands. The area has been divided into the following sub sites -

- Paterson Inlet – predominantly steep and sloping rocky shores in the outer areas, with extensive sheltered sand flats and small areas of sand beach and sheltered wetlands. (EXTREME SIGNIFICANCE).
- Glory Cove (Little Glory)– Predominantly sheltered sand beaches, with some sheltered rocky shores (VERY HIGH SIGNIFICANCE).
- Eastern Muttonbird (Titi) Islands – Offshore island group entirely dominated by steep or sloping exposed rocky and boulder shoreline (VERY HIGH SIGNIFICANCE).
- Oban to Gull Rock Point (eastern coast north of Paterson Inlet) – Predominantly steep or sloping rocky shoreline, mostly exposed and very small areas of sandy beach and sand flats in sheltered coves (MODERATE SIGNIFICANCE).
- The Neck to Port Adventure (eastern coast south of Paterson Inlet) – Predominantly steep or sloping rocky shoreline, mostly exposed and some areas of sandy beach in sheltered coves (MODERATE SIGNIFICANCE).

MAP SHEETS

- Report Maps ES_01 to ES_09
- NZTM Topo50: CH09, CH10, CJ09, CJ10
- Chart Numbers NZ68, NZ681, NZ6825, NZ 69, NZ6912

KEY ENVIRONMENTAL SENSITVITIES

Ecological - Paterson Inlet and all sub-sites have a range of high to extreme environmental sensitivities. The whole of Stewart Island and its offshore islands are important sites for a large number of seabirds and shorebirds, including a number of threatened and endangered species.

Wetland areas and very extensive seagrass dominated intertidal flats are important nursery areas for fish and feeding grounds for wading birds.

A large number of protected or managed sites are present within the site, including conservation and Mataitai reserves, Taiapure, Ulva Island Marine Reserve, and Rakiura National Park. A number of the islands are predator free.

Economic - Big Glory Bay within Paterson Inlet has high value aquaculture farms including salmon and mussels (dredge oysters and scallops have also been trialled).

Social/Cultural - Oban is a hub for outdoor activities including fishing, hunting, diving, boating and tramping, and is the site of the ferry transport from the mainland. Cultural sensitivities are extremely high, particularly for the Eastern Muttonbird Islands.

KEY RESPONSE ISSUES AND PRIORITIES

While weather exposure will limit options for most on-water activities (particularly the offshore and exposed coastal sites), there is a significant risk to large numbers of seabirds (e.g. large muttonbird rafts), shorebirds (Southern NZ dotterel) and aquaculture resources (salmon) from mobile and beached oil. Hazing of birds offshore may be an option, and an oiled wildlife response should be mounted early to deal with impacted birds and marine mammals.

Preventing oil from reaching sheltered tidal flats, seagrass and wetland sites within Paterson Inlet is a very high priority.

Shoreline cleaning in many areas will be severely limited by access and logistical constraints however any possible cleaning of sites where shorebirds and penguins are at risk should be undertaken where possible, including monitoring of these sites for oiled wildlife and early establishment of a wildlife response.

Consultation with Ngai Tahu (info@awarua.co.nz 02 2126029) and DOC (invercargill@doc.govt.nz 0800 362 468) should be undertaken early with respect to spill impact and response options under consideration.

VALUES		Significance Score	Level of Concern Score
Paterson Inlet	Shoreline	20	2000
	Ecological	253	47238
	Human	84	546
	TOTAL	**357**	**49784**
Glory Cove	Shoreline	5	250
	Ecological	99	1081
	Human	52	1156
	TOTAL	**156**	**2487**
Muttonbird Islands	Shoreline	1	25
	Ecological	102	2804
	Human	111	18781
	TOTAL	**214**	**21610**
Oban to Gull Rock Point	Shoreline	2	50
	Ecological	25	1049
	Human	33	133
	TOTAL	**60**	**1232**
The Neck to Port Adventure	Shoreline	2	50
	Ecological	20	996
	Human	42	191
	TOTAL	**64**	**1237**

OVERALL SITE SIGNIFICANCE - EXTREME

Site	**PATERSON INLET**	**Significance – EXTREME**
Sub-Site	**PATERSON INLET**	

SITE DESCRIPTION

Paterson Inlet/ Te Whaka ä Te Wera is a large (~100 km^2) natural harbour located on the eastern side of Stewart Island/Rakiura. It has outstanding natural values, is relatively pristine and consequently has extremely high ecological values. Past oil spill responses have highlighted the importance of the inlet, with a strong emphasis on minimising the risk of oil entering the inlet.

The inlet has a coastline of ~170 km (including islands) with two relatively shallow arms in the upper western reaches, separated by a large (~818 ha) seagrass dominated tidal river plus delta type estuary (Freshwater River Estuary). Several Islands are present in Paterson Inlet, the largest being Ulva Island (261 ha) and Native Island (62 ha) which are both located near the entrance.

Extensive sand flats are present in the western end and in pockets along the northern side of the harbour, along with sand beaches nearer the entrance and cobble/pebble/gravel beaches mainly on the southern side of the harbour. In most areas dense native bush grows to the waters edge.

Rakiura National Park bounds most of the inlet (exceptions being The Neck, and small areas around Golden Bay). With the exception of Big Glory Bay, the Te Whaka a Te Wera/Paterson Inlet Mataitai Reserve and the Ulva Island/Te Wharawhara Marine reserve encompasses the entire inlet. Ulva Island is a pest free wildlife sanctuary. This protection, combined with dense native bush cover, and a largely undeveloped catchment, ensure relatively unmodified habitat with correspondingly high terrestrial and marine ecological and conservation values. Important sub tidal features include unique biogenic reefs (for example, serpulid reefs around Bravo Passage) and benthic communities (for example, brachiopods) that are highly sensitive to physical disturbance, and a very diverse seaweed community. It is habitat to many endemic species with high conservation status.

Paterson Inlet extends ~16 km from the entrance to the western end and is identified in the ES RCP as a sheltered, deep (maximum 45 m) anchorage. Located in the roaring forties, strong winds are common and due to the large size of the harbour, it can be subjected to quite large wind generated waves. It is characterised by having very clear water.

The only permanent settlement is at Oban in Halfmoon Bay (population ~400, increasing significantly in summer), with numerous small cribs/huts scattered throughout the inlet.

Big Glory Bay supports regionally important marine farming – Sandfords salmon, oyster, and mussels. Scallop and crayfish aquaculture have also been trialled, with eco-based tourism a significant industry.

FORESHORE TYPE

- Sand beach (8%)
- Gravel beach (7%)
- Sheltered rocky shore (60%)
- Extensive sheltered sand flats (22%)
- Sheltered wetland (sand and mud flats) (3%)

SHORELINE SEGMENTS

- Shoreline segments (133): SOU-20000 to SOU-25230 populated only with shoreline type.

MAP SHEETS

- Report Maps ES_03, ES_04, ES_06, ES_07
- NZTM Topo50 CH09, CH10, CJ09, CJ10
- Chart Numbers NZ68, NZ681, NZ6825, NZ 69, NZ6912

KEY ENVIRONMENTAL SENSITIVITIES

PLANTS AND ANIMALS

- 67 species of bird (of which 16 species are waders) have been recorded in Paterson Inlet, including reef heron (Nationally Vulnerable), banded dotterel (Nationally Vulnerable), variable oystercatcher, Stewart Island shag (Nationally Vulnerable), yellow eyed penguin (Nationally Vulnerable) and little blue penguin (Decline). Kiwi and Stewart Island weka (Nationally Endangered) are known to forage inter-tidally and Stewart Island is the only breeding area of the southern subspecies of NZ dotterel (Nationally Critical), with Freshwater Estuary a hotspot for the species. It is the southernmost destination for many northern migrant waders.
- Common, bottlenose, and dusky dolphins are often present in the inlet, with occasional whales reported. Fur seals haul out on Ulva Island, with juvenile seals common in the inlet.
- Leopard seals (rarely seen) and Hookers sea lions (not commonly seen) are also reported from Paterson Inlet.
- The Inlet's combination of rocky reef, sand, and soft mud floor bottom is an important habitat for a prolific and diverse range of marine life, including at least 56 different species of fish.
- Important whitebait and native fish habitat, particularly in Freshwater and Rakeahua Rivers (western end of inlet).
- Brachiopod communities designated by IUCN as threatened internationally have habitats in Paterson Inlet. Brachiopods are of scientific interest because their phylum has survived for approximately 600 million years with no basic change.
- Serpulid (Tubeworm) mound/reef communities exist either side of Bravo Passage.

- Ulva Island is a rat free, wildlife sanctuary surrounded by a marine reserve.
- Over 70% of all Stewart Island's seaweed species have been recorded in Paterson Inlet.
- The intertidal flats of the Freshwater River delta are nursery areas for fish species and feeding grounds for wading birds, and have very extensive (>300ha) dense seagrass beds.

MANAGED/PROTECTED SITES

- Paterson Inlet Mataitai.
- Ulva Island Marine Reserve.
- Ulva Island - predator free open sanctuary.
- Rakiura National Park (extends from Sawdust Bay to Big Glory Bay and includes most of the major islands within Paterson Inlet).
- Conservation or Reserve Areas (from Big Glory Bay to Glory Cove).
- Nationally important geological landforms (Ringaringa Intrusives, Cow and Calf Point Gabbro Intrusion - near Golden Bay) – map 12a RCP.

ECONOMIC

- Moorings and wharfs at Golden Bay. Departure point for many bird watching tours, sea kayaking, tramper water taxis.
- Cruise ships (~16/year).
- Big Glory Bay salmon, mussels, dredge oysters and scallops farming.
- Kiwi tours at Ocean Beach.
- Ulva Island tourism.
- Great Walks – tramping.

CULTURAL AND SOCIAL

- Moorings and wharfs at Golden Bay.
- Norwegian whalers base at Kaipipi, shipwrecks – Othello, Kotare and the Pacific.
- Several sawmilling sites, now historical ruins, are located in Sawdust Bay, and Prices Inlet/Kaipipi Bay, on the northern side of the inlet.
- Diving popular due to very high clarity waters and shelter.
- Popular hunting blocks and huts, particularly white tailed deer (hunters travel from throughout NZ).
- Sheltered waters for boating and sailing, and seafood gathering.

OIL SPILL RESPONSE OPTIONS AND CONSIDERATIONS

RESPONSE OPTION	RECOMMENDED	FEASIBILITY	NOTES
Natural Rehabilitation	No	Low	• Likely to be slow in sheltered areas and tidal flats. • Significant risk to birds and other ecological and socio-economic values while oil is present.

RESPONSE OPTION	RECOMMENDED	FEASIBILITY	NOTES
Open Water Recovery	Yes	Low	• Weather constraints likely and facilities limited. • Recovery of oil will reduce risk to birds, marine mammals and economic values including marine farms.
Near-Shore Containment	Yes	Medium	• Weather constraints likely, and facilities very limited. • Recovery of oil will reduce risk to birds, marine mammals and economic values including marine farms.
Chemical/Physical Dispersion	Yes	High	• With consultation of wildlife, fisheries, iwi, and Maitaitai advisors. • Very high subtidal and fisheries values that will need to be considered with respect to dispersant plumes and real and perceived impacts.
Shoreline Pre-Cleaning	Yes	Low	• Shoreline access general limited. Clean up of some beaches will be feasible.
Shoreline Cleanup	Yes	Low	• Cleanup of beaches likely to be possible. • Shoreline access very difficult in most areas. • Will reduce the risk to birds and human use of shorelines and also minimise remobilisation into sensitive marine areas.

ACCESS

A narrow road provides access from Oban to a wharf at Golden Bay on the north side of the harbour. Elsewhere, terrestrial access is limited to walking tracks, by boat, or by air. There is very limited alongshore access on the rocky shores, and few obvious staging sites.

SITE NAME		Paterson Inlet				
SURROUNDING LANDUSE (circle)		Natural, Agricultural, Commercial, Residential, Recreation				
SHORELINE CHARACTER	MOSRA 2010 categories	%	Likely Oil Spill Response	Preference*	Feasibility**	Comment
	I. Exposed Rocky Shores	0				
	II. Exposed Wave-Cut Platform	0				
	II. Fine-to-Medium-Grained Sand Beach	0				
	III. Exposed Compacted Tidal Flat	0	Natural rehabilitation	NR	L	low energy so slow
	III. Coarse-Grained Sand Beach	8	Open water recovery	R	L	wind and waves
	III. Mixed Sand and Gravel Beach	0	Near shore recovery	R	M	potential anchor damage
	III. Gravel Beach	7	Physical/chem Dispersion	R	H	Avoid marine reserve
	IV. Sheltered Rocky Shore	60	Shoreline pre-cleaning	R	L	target beaches only
	IV. Boulder/cobble beaches	0	Shoreline cleanup	R	L	target beaches only
	V. Sheltered Tidal Flat	22	*R=Recommended, NR = Not Recommended, A=Avoid			
	V. Saltmarsh/Mangrove	3	**High/Medium/Low			

	Significance Score		Description/Comment + seasonal issues	Oil impact Points	Oil impact Category	Level of Concern
Shoreline Character score		20	Sheltered rocky shore plus tidal flats and wetland	100	2b	2000
PLANTS AND ANIMALS	Wading/shorebirds	50	NZ dotterel breeding. 16 species of waders. Kiwi and Stewart Island weka known to forage intertidally.	625	1a	31250
	Seabirds	2	67 species of birds recorded (many terrestrial). Shearwater rafts reported.	50	2c	100
	Penguins	20	LBP very common/breed. Yellow eyed resent, Fiordland Crested may visit occasionally	100	2b	2000
	Seals/Sea lions	50	Seal haulouts Ulva Island, Hookers seallon - uncommon, leopard seals - rare	250	1b	12500
	Whales/dolphins	2	Dusky, common, bottle nose dolphins. Occasional whales may enter	250	1b	500
	Fish spawning and nursery areas	2	Blue cod (rec fished), whitebait and freshwater fish	10	3c	20
	Intertidal shellfish/invertebrates	2	Cockles, scallops, native rock oysters, blue mussels (possible greens)	10	3c	20
	Subtidal shellfish/invertebrates (inc. coral)	50	Scallops, brachipods (IUCN listed as internationally threatened) very common, tu	5	3d	250
	Seaweed	5	Diverse seaweed community. 70% of Stewart I species found in PI	1	4d	5
	Seagrass	5	Very extensive beds	50	2c	250
	Saltmarsh/Mangroves	2	Present in sheltered upper arms	50	2c	100
	Duneland	0				
	Other.....	0				
MANAGED / PROTECTED SITES	Identified (unprotected) sites of importance	1	ASCV	1	4d	1
	Scenic/Historic or Wildlife Protection	2	Wildlife Sanctuary/Refuge/Management Reserve	1	4d	2
	Partial marine protection/high value sites	20	Scientific/Nature Reserve/Refuge, Marine Protected Area (e.g. fisheries prohibition), National Park, Matairai	1	4d	20
	Nationally recognised marine protection	20	Marine Reserve, Marine Park, Proposed World Heritage area	10	3c	200
	Internationally recognised sites	0				
	Other	20	Nationally important geological feature	1	4d	20
ECONOMIC	Aquaculture	5	Big Glory Bay - salmon and mussel farms.	25	4a	125
	Marina	2	Moorings in Golden Bay area	5	4c	10
	Commercial - Fish	0				
	Commercial - Other (eg. tourism, charter fishing	2	pelagic bird watching in PI, Ulva I, trampers, sea kayaking	10	4b	20
	Port/shipping/Infrastructure	2	Cruise shipping - 16/yr	10	4b	20
	Other.....					
CULTURE & HERITAGE	Food gathering	2	Important recreational sites	10	4b	20
	Cultural significance	20	High cultural value (early settlement sites, kaimoana)	10	3c	200
	Archaelogical/Historic site	20	Norwegian whalers base - sig cultural heritage site Othello wreck (subtidal)	1	4d	20
	Other.....					
SOCIAL / AMENITY / REC.	High aesthetic value	20	Iconic landscape of national significance	5	4c	100
	Recreational shoreline use	1		1	4d	1
	Swimming	1		1	4d	1
	Diving	5	high clarity waters, Ulva Island a top 10 dive site in NZ	5	4c	25
	Boating (watercraft)	2		1	4d	2
	Other.....	2	white tailed deer hunting.	1	4d	2
	TOTAL	357		1600		49784

Site	PATERSON INLET	Significance – VERY HIGH
Sub-Site	GLORY COVE (LITTLE GLORY)	

SITE DESCRIPTION - Commonly known as Little Glory.

Glory Cove (commonly known as Little Glory) is located within Paterson Inlet on the south eastern side. The entrance to the cove itself is ~700 m wide, and the shoreline extends ~5 km from the southern end of Tarpaulin Beach to the headland north of Goose Cove. The wider coastline of the site extends from Pipi Rocks in the north, to just north of Sailors Rest in the south. It is sheltered from most conditions, being most susceptible to weather and seas from the west. It is identified in the Regional Coastal Plan as a sheltered, heavily used anchorage. The shoreline of Glory Cove is dominated by pockets of coarse sandy beaches and rocks. A small jetty is located in Glory Bay.

FORESHORE TYPE

- Sand beaches (80%)
- Sheltered rocky shore (20%)

SHORELINE SEGMENTS

- Shoreline segments (133): SOU-20940 to SOU-21010 populated only with shoreline type.

MAP SHEETS

- Report Map ES_07
- NZTM Topo50: CH09, CH10, CJ09, CJ10
- Chart Numbers NZ68, NZ681, NZ6825, NZ 69, NZ6912

KEY ENVIRONMENTAL SENSITIVITIES

PLANTS AND ANIMALS

- 67 species of bird (of which 16 species are waders) have been recorded in Paterson Inlet, reef heron (Nationally Vulnerable), banded dotterel (Nationally Vulnerable), variable oystercatcher, Stewart Island shag (Nationally Vulnerable), yellow eyed penguin (Nationally Vulnerable) and little blue penguin (Decline). Kiwi and Stewart Island weka (Nationally Endangered) are known to forage inter-tidally and Stewart Island is the only breeding area of the southern subspecies of NZ dotterel (Nationally Critical), with Freshwater Estuary a hotspot for the species.
- It is the southernmost destination for many northern migrant waders.
- Common, bottlenose, and dusky dolphins are often present in the inlet, with

occasional whales reported.

- Fur seals haul out on Ulva Island, with juvenile seals common in the inlet.
- Leopard seals (rarely seen) and Hookers sealions (not commonly seen) are also reported from Paterson Inlet.
- The Inlet's combination of rocky reef, sand, and soft mud floor bottom is an important habitat for a prolific and diverse range of marine life, including at least 56 different species of fish.
- Brachiopod communities designated by IUCN as threatened internationally have habitats in Paterson Inlet. Brachiopods are of scientific interest because their phylum has survived for approximately 600 million years with no basic change.
- Extensive seaweed beds present.

MANAGED/PROTECTED SITES

- Glory Cove is within the Te Whaka a Te Wera/Paterson Inlet Mataitai Reserve, and adjacent to the nearby Ulva Island/ Te Wharawhara Marine Reserve.
- Most of the terrestrial margin is Scenic Reserve.

ECONOMIC

- Kiwi spotting tours operate from the bay (Phillip Smith – Mataitai manager).

CULTURAL AND SOCIAL

- Popular hunting block and hut.
- Seafood gathering.
- Backs onto area of significant cultural importance (Maori land and early settlement sites).
- Sheltered waters for boating and sailing.

OIL SPILL RESPONSE OPTIONS AND CONSIDERATIONS

RESPONSE OPTION	RECOMMENDED	FEASIBILITY	NOTES
Natural Rehabilitation	No	Low	• Likely to be slow in sheltered areas and tidal flats. • Significant risk to birds and other ecological and socio-economic values while oil is present.
Open Water Recovery	Yes	Medium	• Weather constraints likely and facilities limited, however recovery of oil will reduce risk to birds, marine mammals and economic values including marine farms.
Near-Shore Containment	Yes	Medium	• Weather constraints likely and facilities very limited. • Biogenic reefs (e.g. serpulid reefs) and unique benthic communities (e.g. brachiopods) are highly sensitive to physical disturbance e.g. anchors.
Chemical/Physical Dispersion	Yes	High	• With consultation of wildlife, fisheries, iwi, and Maitaitai advisors. • Very high subtidal and fisheries values that will need to be considered with respect to dispersant plumes and real and perceived impacts.
Shoreline Pre-Cleaning	Yes	Low	• Shoreline access general limited. Beaches most feasible
Shoreline Cleanup	Yes	Low	• Cleanup of beaches likely to be possible. • Shoreline access very difficult in most areas. • Will reduce the risk to birds and human use of shorelines and also minimise remobilisation into sensitive marine areas.

ACCESS

Access by boat (jetty in middle of the bay), or by air (helicopter).

Walking tracks to Ocean Beach on the eastern exposed coastline. Alongshore access by foot on sandy beaches, but very limited on rocky shores.

SITE NAME		Glory Cove (Little Glory)				
SURROUNDING LANDUSE (circle)		Natural, Agricultural, Commercial, Residential, Recreation				
SHORELINE CHARACTER	MOSRA 2010 categories	%	Likely Oil Spill Response	Preference*	Feasibility**	Comment
	I. Exposed Rocky Shores	0				
	II. Exposed Wave-Cut Platform	0				
	II. Fine-to-Medium-Grained Sand Beach	0				
	III. Exposed Compacted Tidal Flat	0	Natural rehabilitation	NR	L	low energy so slow
	III. Coarse-Grained Sand Beach	80	Open water recovery	R	M	wind and waves
	III. Mixed Sand and Gravel Beach	0	Near shore recovery	R	M	
	III. Gravel Beach	0	Physical/chem Dispersion	R	H	
	IV. Sheltered Rocky Shore	20	Shoreline pre-cleaning	R	L	target beaches only
	IV. Boulder/cobble beaches	0	Shoreline cleanup	R	L	target beaches only
	V. Sheltered Tidal Flat	0	*R=Recommended, NR = Not Recommended, A=Avoid			
	V. Saltmarsh/Mangrove	0	**High/Medium/Low			

	Significance Score		Description/Comment + seasonal issues	Oil impact Points	Oil impact Category	Level of Concern
Shoreline Character score		5	Sheltered coarse sand beaches and rocky shores	50	3b	250
PLANTS AND ANIMALS	Wading/shorebirds	20	16 species of waders. Kiwi and Stewart Island weka known to forage intertidally.	10	2d	200
	Seabirds	1	Predominantly shearwaters/terns.	10	2d	10
	Penguins	5	LBP very common/breed. Yellow eyed resent, Fiordland Crested may visit occasionally	100	2b	500
	Seals/Sea lions	1	Seals,	5	3d	5
	Whales/dolphins	2	dusky, common, bottle nose dolphins. Occasional whales may enter	25	1d	50
	Fish spawning and nursery areas	2	Blue cod (rec fished)	5	3d	10
	Intertidal shellfish/invertebrates	2	Cockles, scallops, native rock oysters, blue mussels (possible greens)	10	3c	20
	Subtidal shellfish/invertebrates (inc. coral)	50	Scallops, brachipods (IUCN listed as internationally threatened) very common	5	3d	250
	Seaweed	5	Diverse seaweed community. 70% of Stewart I species found in PI	5	3d	25
	Seagrass	0				
	Saltmarsh/Mangroves	0				
	Duneland	0				
	Other.....	0				
MANAGED / PROTECTED SITES	Identified (unprotected) sites of importance	1	ASCV	1	4d	1
	Scenic/Historic or Wildlife Protection	0				
	Partial marine protection/high value sites	10	Marine Protected Area (e.g. fisheries prohibition), Mataitai	1	4d	10
	Nationally recognised marine protection	0				
	Internationally recognised sites	0				
	Other	0				
ECONOMIC	Aquaculture	0				
	Marina	0				
	Commercial - Fish	0				
	Commercial - Other (eg. tourism, charter fishing	2	Kiwi tours at Ocean Beach	10	4b	20
	Port/shipping/Infrastructure	0				
	Other.....					
CULTURE & HERITAGE	Food gathering	2	Important recreational sites	10	4b	20
	Cultural significance	20	High cultural value (early settlement sites, kaimoana)	50	3b	1000
	Archaeological/Historic site	1		1	4d	1
	Other.....					
SOCIAL / AMENITY / REC.	High aesthetic value	20	Iconic landscape of national significance	5	4c	100
	Recreational shoreline use	1		1	4d	1
	Swimming	1		1	4d	1
	Diving	1		1	4d	1
	Boating (watercraft)	2		5	4c	10
	Other.....	2	White tailed deer hunting.	1	4d	2
	TOTAL	156		312		2487

Site	PATERSON INLET	Significance – VERY HIGH
Sub-Site	EASTERN MUTTONBIRD (TITI) ISLANDS	

SITE DESCRIPTION

The Eastern Muttonbird (Titi) Islands comprise ~15 islands and rock stacks located 5-10 km east of Oban. The islands have a combined coastal extent of ~24 km, and are steep (cliffs present in many places) and exposed, with physical access difficult and by permit only. They are extremely important culturally to Ngai Tahu and many of the islands have mutton-birder cribs and tracks.

FORESHORE TYPE

- Steep or sloping exposed rocky or boulder shoreline (90%)
- Boulder and cobble beaches (10%)

SHORELINE SEGMENTS

- Shoreline segments (133): SOU-10000 to SOU-10120 populated only with shoreline type.

MAP SHEETS

- Report Maps ES_01_ES_02, ES_04, ES_05
- NZTM Topo50: CH09, CH10, CJ09, CJ10
- Chart Numbers NZ68, NZ681, NZ6825, NZ 69, NZ6912

KEY ENVIRONMENTAL SENSITIVITIES

PLANTS AND ANIMALS

- The Eastern Muttonbird Islands are of national importance because of their predator free status and wildlife populations. Bunkers Islets, Jacky Lee, North and Edwards Islands are predator free.
- Fur seal rookery and breeding ground on Bench Island.
- Populations of yellow eyed penguin (Nationally Vulnerable), variable oystercatcher, reef heron (Nationally Vulnerable), Stewart Island shag (Nationally Vulnerable), banded dotterel (Nationally Vulnerable). Occasional Fiordland Crested Penguin (Nationally Endangered).
- Breeding grounds for mottled, storm and diving petrels, shearwaters and shags.
- Titi/sooty shearwater open water feeding Oct-May.
- Buller's and White-capped Albatross are common, Cape Petrel, Common Diving-

Petrel and Sooty Shearwaters are abundant, Little Shearwater and Mottled and Cook's Petrels, occasional. Other albatross, such as Antipodean, Gibson's, Northern and Southern Royal, Black-browed, Grey-headed, and Salvin's are possible, as well as Northern and Southern Giant Petrel. Antarctic Tern and Subantarctic Skua almost guaranteed.

- Oyster beds present offshore.
- Very high density of great white sharks (*Charcharodon charcarias*; CITES Appendix II Vulnerable A2cd + 3cd) recorded in the area.

MANAGED/PROTECTED SITES

- Ngai Tahu. Access via permit only (see Access information below).
- Bench Island/Whero Rock Scenic/Nature reserve.
- Taiapure around North Island, Herekopare, Bunker Islands.
- Womans Island, Taihuka Island

ECONOMIC

- Muttonbird harvesting commercially important to Ngai Tahu.
- Tourism - Shark diving and bird watching.
- Oyster dredging and cod fishing are undertaken nearby.

CULTURAL AND SOCIAL

- **Extremely** important to Maori. Titi harvest area for Ngai Tahu.

OIL SPILL RESPONSE OPTIONS AND CONSIDERATIONS

RESPONSE OPTION	RECOMMENDED	FEASIBILITY	NOTES
Natural Rehabilitation	Yes	High	• High energy rocky shores will facilitate natural rehabilitation at this site. • Consider remobilisation risk to other areas and seabirds and shorebirds in the area will be at risk.
Open Water Recovery	No	Low	• Weather constraints likely and facilities very limited. • There are significant risks to seabirds and marine mammals from oil at sea.
Near-Shore Containment	No	Low	• Weather constraints likely and facilities very limited. • There are significant risks to seabirds and marine mammals from oil at sea.

RESPONSE OPTION	RECOMMENDED	FEASIBILITY	NOTES
Chemical/Physical Dispersion	Yes	High	• With consultation of wildlife, fisheries, iwi, and Maitaitai advisors. • Very high subtidal values that will need to be considered with respect to dispersant plumes and real and perceived impacts.
Shoreline Pre-Cleaning	Yes	Medium	• Shoreline access very limited.
Shoreline Cleanup	Yes	Medium	• Shoreline access very difficult in most areas.

ACCESS

Boat, helicopter, plane and floatplane access only. Boat access may be hazardous in places due to the rocky platforms and reef systems. Alongshore access very limited on exposed rocky shores.

Ngai Tahu (info@awarua.co.nz Ph: 032126029) and the Department of Conservation (Invercargill@doc.govt.nz Ph: 0800 362 468) should be contacted prior to access of the Eastern Muttonbird Islands.

SITE NAME		Eastern Muttonbird (Titi) Islands							
SURROUNDING LANDUSE (circle)		Natural, Agricultural, Commercial, Residential, Recreation							
SHORELINE CHARACTER	MOSRA 2010 categories	%	Likely Oil Spill Response	Preference*	Feasibility**	Comment			
	I. Exposed Rocky Shores	90							
	II. Exposed Wave-Cut Platform	0							
	II. Fine-to-Medium-Grained Sand Beach	0							
	III. Exposed Compacted Tidal Flat	0	Natural rehabilitation	R	H	high energy			
	III. Coarse-Grained Sand Beach	0	Open water recovery	NR	L	wind and waves			
	III. Mixed Sand and Gravel Beach	0	Near shore recovery	NR	L	wind and waves			
	III. Gravel Beach	0	Physical/chem Dispersion	R	H				
	IV. Sheltered Rocky Shore	0	Shoreline pre-cleaning	R	M	target beaches only			
	IV. Boulder/cobble beaches	10	Shoreline cleanup	R	M	target beaches only			
	V. Sheltered Tidal Flat	0	*R=Recommended, NR = Not Recommended, A=Avoid						
	V. Saltmarsh/Mangrove	0	**High/Medium/Low						
	Significance Score		Description/Comment + seasonal issues				Oil impact Points	Oil impact Category	Level of Concern
Shoreline Character score		1	Exposed rocky shores				25	4a	25
PLANTS AND ANIMALS	Wading/shorebirds	1	May be occasional birds				10	2d	10
	Seabirds	2	Major roost, breeding and feeding areas mottled, storm and diving petrels, shearwaters and shags.				100	2b	200
	Penguins	20	LBP very common/breed. Yellow eyed resent, Fiordland Crested may visit occasionally				100	2b	2000
	Seals/Sea lions	50	Seal haulouts and juvenile rookery on Bench Island, Hookers sealion - uncommon, leopard seals - rare				5	3d	250
	Whales/dolphins	1	Dusky, common, bottle nose dolphins. Occasional whales				250	1b	250
	Fish spawning and nursery areas	1	Blue cod (rec fished)				5	3d	5
	Intertidal shellfish/invertebrates	1					10	3c	10
	Subtidal shellfish/invertebrates (inc. coral)	1	Oyster beds present offshore.				1	4d	1
	Seaweed	2					5	3d	10
	Seagrass	0							
	Saltmarsh/Mangroves	0							
	Duneland	0							
	Other.....	5	Great white sharks				1	4d	5
MANAGED / PROTECTED SITES	Identified (unprotected) sites of importance	1	ASCV				1	4d	1
	Scenic/Historic or Wildlife Protection	0							
	Partial marine protection/high value sites	10	Nature Reserve Bench Island; Whero Rock				1	4d	10
	Nationally recognised marine protection	5	Maitaitai around Womans (Pikimanaku) I, Taihuka.				10	4b	50
	Internationally recognised sites	0							
	Other	2	Bunkers Islets, Jacky Lee, North and Edwards Islands are predator free				1	4d	2
ECONOMIC	Aquaculture	0							
	Marina	0							
	Commercial - Fish	2	Oyster dredging and cod fishing are undertaken nearby.				5	4c	10
	Commercial - Other (eg. tourism, charter fishing,	2	Shark diving, pelagic seabird tourism				5	4c	10
	Port/shipping/Infrastructure	0							
	Other.....	0							
CULTURE & HERITAGE	Food gathering	50	Important traditional harvesting sites				125	3a	6250
	Cultural significance	50	High cultural value (early settlement sites, kaimoana)				250	2a	12500
	Archaeological/Historic site	0							
	Other.....								
SOCIAL / AMENITY / REC.	High aesthetic value	5	Iconic landscape				1	4d	5
	Recreational shoreline use	0							
	Swimming	0							
	Diving	1	High clarity waters				1	4d	1
	Boating (watercraft)	1	Recreational fishing/boating				5	4c	5
	Other.....	0							
	TOTAL	214					917		21610

Site	PATERSON INLET	Significance – MODERATE
Sub-Site	OBAN TO GULL ROCK POINT	

SITE DESCRIPTION

The shoreline included in this assessment extended approximately 37 km north from Ackers Point at the entrance of Paterson Inlet, to Gull Rock Point, just North of Big Bungaree Beach. It includes Stewart Island's main settlement of Oban located in Halfmoon Bay, the principle access point to the island (both sea and air) and the centre of most of the island's infrastructure and commercial/tourism operations. A substantial number of moorings are located in Halfmoon Bay, as are the wharf, ferry terminal, and associated commercial fishing facilities.

Halfmoon Bay, Horseshoe Bay, and Port William provide good shelter from all except the easterly quarter. Port William was identified as a suitable haven for vessels.

The exposed high energy shoreline is characterised by crescent shaped golden sand beaches, with sandy estuaries are present at the head of many bays, separated by indented rocky coast and outcrops. Other than on beaches, alongshore access is very difficult, and most of the coastline is backed with dense native bush located within the Rakiura National Park.

There is road access to the southern part of the site around Oban, extending north as far as Lee Bay. From there, the Rakiura northern circuit walking track provides the only land based access along the coast.

FORESHORE TYPE

- Steep or sloping rocky shoreline (70%)
- Sand beaches (27%)
- Sheltered sand flats (3%)

SHORELINE SEGMENTS

- Shoreline segments (133): SOU-07000 to SOU-07210 populated only with shoreline type.

MAP SHEETS

- Report Maps ES_01, ES_04
- NZTM Topo50: CH09, CH10, CJ09, CJ10
- Chart Numbers NZ68, NZ681, NZ6825, NZ 69, NZ6912

KEY ENVIRONMENTAL SENSITIVITIES

PLANTS AND ANIMALS

- Populations of yellow eyed penguins (Nationally Vulnerable), little blue penguins (Decline), Stewart Island shags (Nationally Vulnerable), various petrels and shearwaters.

MANAGED/PROTECTED SITES

- Rakiura National Park.
- Scenic Reserves (Ackers Point, Baker Park)
- Recreation Reserve (Horseshoe Bay)

ECONOMIC

- Halfmoon Bay has commercial fish facilities, moorings, ferry terminal, Tier 1 fuel site, cruise ships (approximately 16 per year).

CULTURAL AND SOCIAL

- Primary recreation and tourism hub, and service centre on Stewart Island.

OIL SPILL RESPONSE OPTIONS AND CONSIDERATIONS

RESPONSE OPTION	RECOMMENDED	FEASIBILITY	NOTES
Natural Rehabilitation	Yes	High	• High energy shorelines will facilitate natural rehabilitation at this site. • Consider remobilisation risk to other areas and seabirds and shorebirds in the area will be at risk.
Open Water Recovery	No	Low	• Weather constraints likely and facilities very limited. • There are significant risks to seabirds and marine mammals from oil at sea.
Near-Shore Containment	Yes	Low	• Weather constraints likely and facilities very limited. • There are significant risks to seabirds and marine mammals from oil at sea.
Chemical/Physical Dispersion	Yes	High	• With consultation of wildlife, fisheries, iwi, and Maitaitai advisors. • Very high subtidal and fisheries values will need to be considered with respect to dispersant plumes and real and perceived impacts.

RESPONSE OPTION	RECOMMENDED	FEASIBILITY	NOTES
Shoreline Pre-Cleaning	Yes	High	• Shoreline access very difficult in most areas.
Shoreline Cleanup	Yes	High	• Weather constraints likely and facilities very limited. • There are significant risks to seabirds and marine mammals from oil at sea.

ACCESS

Boat, helicopter, plane and floatplane access only.

Boat access in Halfmoon Bay is good, elsewhere may be hazardous in places due to the rocky platforms and reef systems.

Local road access extends approximately 5 km from Oban but foot access on land only after that.

Alongshore access very limited on exposed rocky shores.

SITE NAME		Stewart Island - Oban to Gull Rock Point							
SURROUNDING LANDUSE (circle)		Natural, Agricultural, Commercial, Residential, Recreation							
SHORELINE CHARACTER	MOSRA 2010 categories	%	Likely Oil Spill Response	Preference*	Feasibility**	Comment			
	I. Exposed Rocky Shores	70							
	II. Exposed Wave-Cut Platform	0							
	II. Fine-to-Medium-Grained Sand Beach	0							
	III. Exposed Compacted Tidal Flat	0	Natural rehabilitation	R	H	high energy on rocky coast			
	III. Coarse-Grained Sand Beach	27	Open water recovery	NR	L	wind and waves			
	III. Mixed Sand and Gravel Beach	0	Near shore recovery	R	L	wind and waves			
	III. Gravel Beach	0	Physical/chem Dispersion	R	H				
	IV. Sheltered Rocky Shore	0	Shoreline pre-cleaning	R	L	target beaches only			
	IV. Boulder/cobble beaches	10	Shoreline cleanup	R	L	target beaches only			
	V. Sheltered Tidal Flat	3	*R=Recommended, NR = Not Recommended, A=Avoid						
	V. Saltmarsh/Mangrove	0	**High/Medium/Low						
	Significance Score		Description/Comment + seasonal issues				Oil impact		Level of Concern
							Points	Category	
Shoreline Character score		2	Exposed rocky shores and sand beaches				25	4a	50
PLANTS AND ANIMALS	Wading/shorebirds	1	NZ dotterel, oystercatchers				10	2d	10
	Seabirds	2	Roosts and offshore feeding areas: mottled, storm and diving petrels, shearwaters and shags.				100	2b	200
	Penguins	5	LBP very common/breed. Yellow eyed resent, Fiordland Crested may visit occasionally				100	2b	500
	Seals/Sea lions	1	Seal haulouts, Hookers sealion - uncommon, leopard seals - rare				5	3d	5
	Whales/dolphins	1	dusky, common, bottle nose dolphins. Occasional whales				250	1b	250
	Fish spawning and nursery areas	1	Blue cod (rec fished)				5	3d	5
	Intertidal shellfish/invertebrates	1	Common species				10	3c	10
	Subtidal shellfish/invertebrates (inc. coral)	1	Oyster beds present offshore.				1	4d	1
	Seaweed	2	Diverse rocky shore communities				5	3d	10
	Seagrass	1							
	Saltmarsh/Mangroves	1	Small patches in estuaries				50	2c	50
	Duneland	0							
	Other.....	0							
MANAGED / PROTECTED SITES	Identified (unprotected) sites of importance	1	ASCV				1	4d	1
	Scenic/Historic or Wildlife Protection	2	Scenic/Historic Reserve				1	4d	2
	Partial marine protection/high value sites	5	National Park				1	4d	5
	Nationally recognised marine protection	0							
	Internationally recognised sites	0							
	Other	0							
ECONOMIC	Aquaculture	1	Horseshoe Bay to Port William - granted not established				1	4d	1
	Marina	2	Halfmoon Bay moorings				5	4c	10
	Commercial - Fish	5	Halfmoon Bay 20 commercial boats				5	4c	25
	Commercial - Other (eg. tourism, charter fishing	2	Pelagic bird watching, trampers, sea kayaking				5	4c	10
	Port/shipping/Infrastructure	2	Cruise shipping - 16/yr				10	4b	20
	Other.....	1	Great walk hut at Port William				1	4d	1
CULTURE & HERITAGE	Food gathering	2	Traditional harvesting sites				10	3c	20
	Cultural significance	5	Early settlement sites, kaimoana				5	4c	25
	Archaelogical/Historic site	1	Early settlement sites				1	4d	1
	Other.....								
SOCIAL / AMENITY / REC.	High aesthetic value	5	Landscape unit 29 RCP: naturalness 3+-5/5				1	4d	5
	Recreational shoreline use	1	Predominantly tramping				1	4d	1
	Swimming	2	Beaches around Oban - summer				1	4d	2
	Diving	2	High clarity waters				1	4d	2
	Boating (watercraft)	2	Recreational fishing/boating				5	4c	10
	Other.....	0							
	TOTAL	60					616		1232



ECONOMIC

- Kiwi spotting tours operate from the Glory Cove to Ocean Beach (Phillip Smith – Mataitai manager).

CULTURAL AND SOCIAL

- The Neck is of very high significance to iwi, and is an important early settlement site.
- Much of the area is Maori land.

OIL SPILL RESPONSE OPTIONS AND CONSIDERATIONS

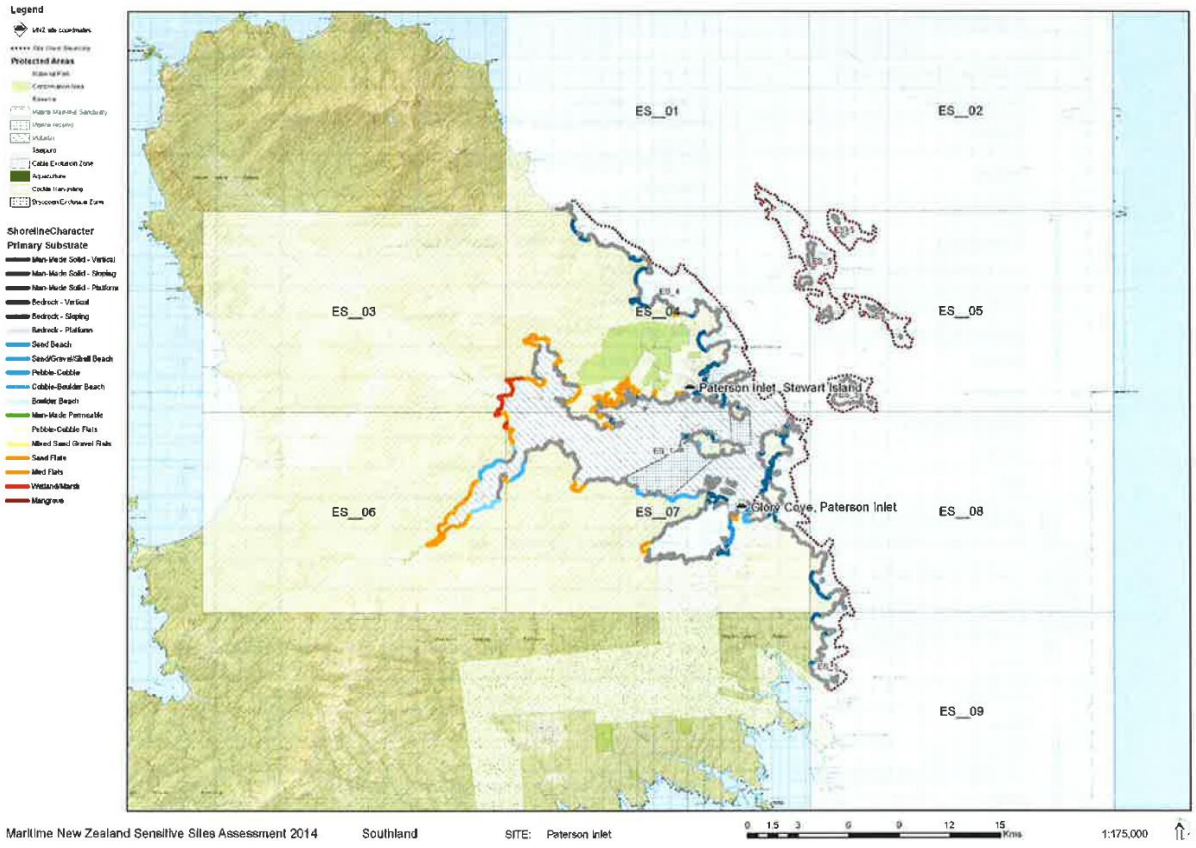
RESPONSE OPTION	RECOMMENDED	FEASIBILITY	NOTES
Natural Rehabilitation	Yes	High	• High energy rocky shores will facilitate natural rehabilitation at this site. • Consider remobilisation risk to other areas and seabirds and shorebirds in the area will be at risk.
Open Water Recovery	No	Low	• Weather constraints likely and facilities very limited. • There are significant risks to seabirds and marine mammals from oil at sea.
Near-Shore Containment	Yes	Low	• Weather constraints likely and facilities very limited. • There are significant risks to seabirds and marine mammals from oil at sea.
Chemical/Physical Dispersion	Yes	High	• With consultation of wildlife, fisheries, iwi advisors. • Feasibility is likely to be high and will provide good option for protection of penguins and shorebirds.
Shoreline Pre-Cleaning	Yes	High	• Shoreline access general limited. Beaches most feasible.
Shoreline Cleanup	Yes	High	• Beaches likely to be possible. Shoreline access very difficult in most areas. • Will reduce risk where possible to penguins and shorebirds as well as kiwi.

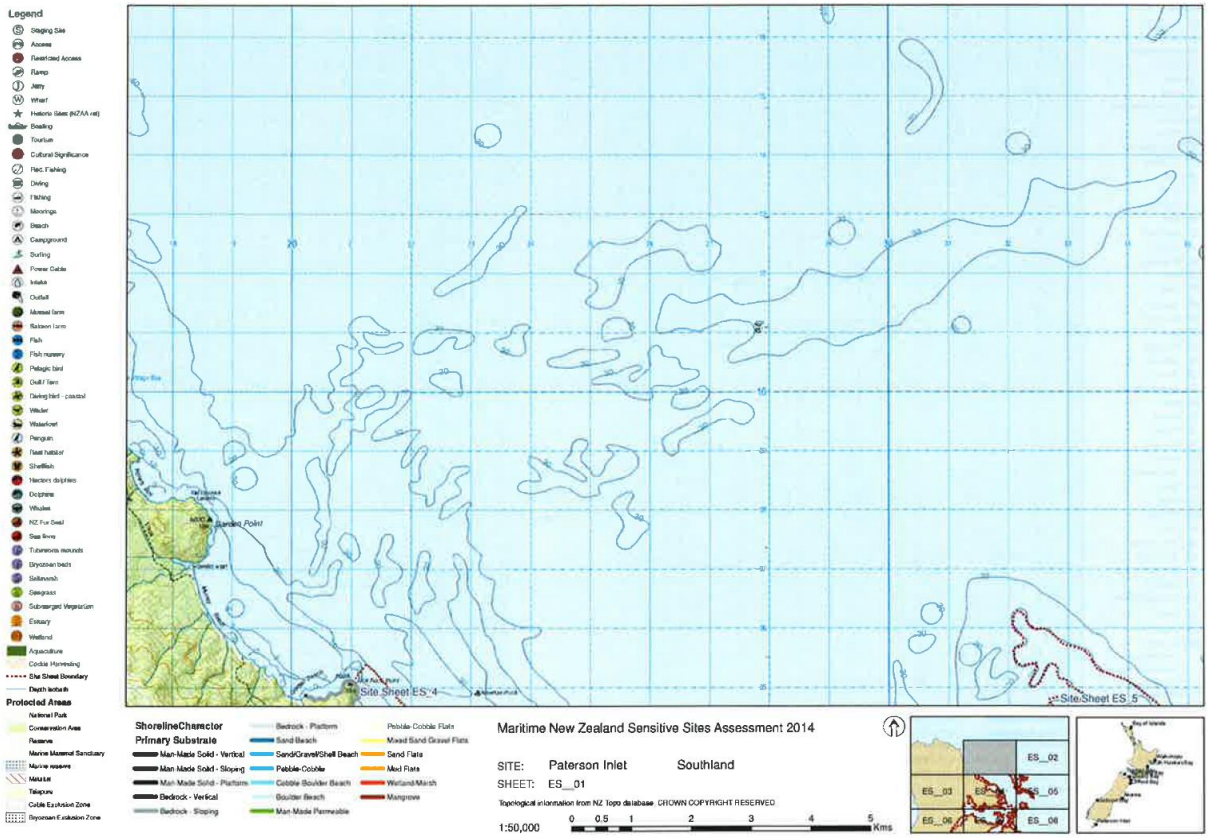
ACCESS

Boat and helicopter access only. Boat access may be hazardous in places due to the rocky platforms and reef systems. There are no roads and no managed tracks on the coast. Alongshore access very limited on exposed rocky shores.

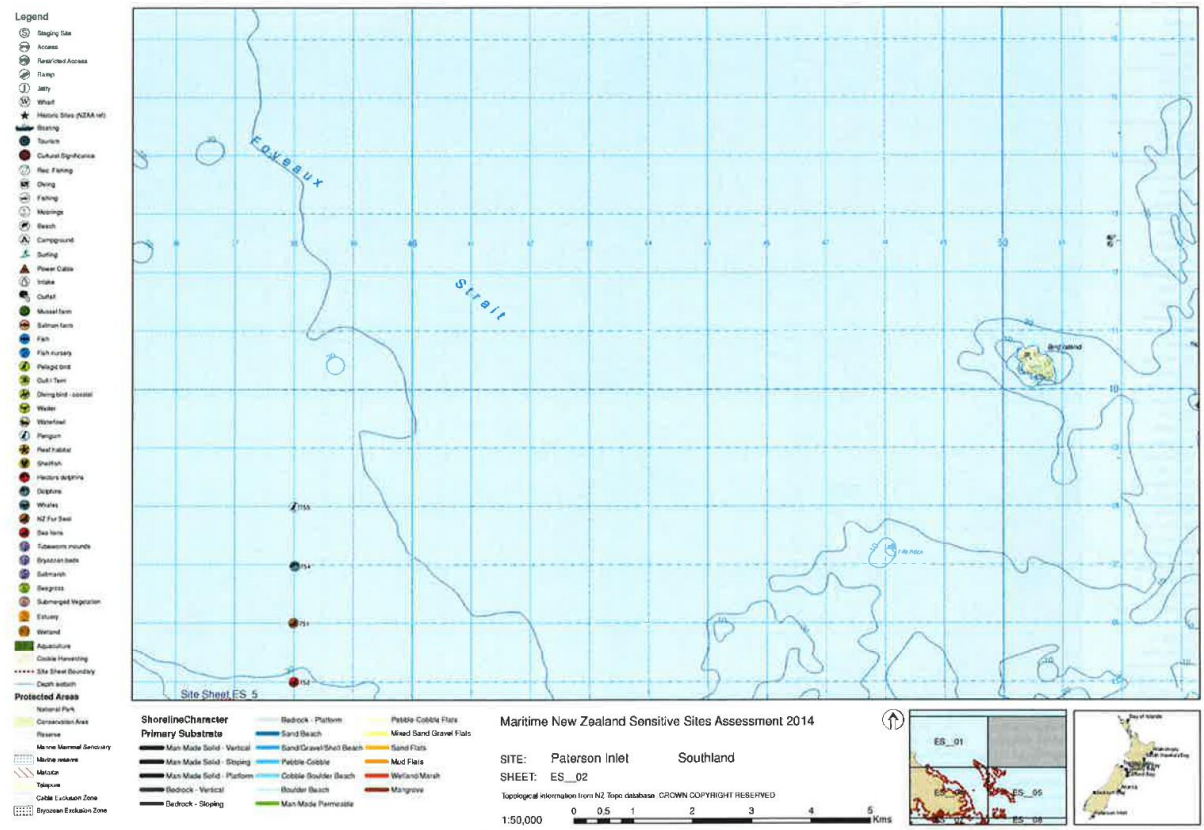
SITE NAME		Stewart Island - The Neck to Port Adventure							
SURROUNDING LANDUSE (circle)		Natural, Agricultural, Commercial, Residential, Recreation							
SHORELINE CHARACTER	MOSRA 2010 categories	%	Likely Oil Spill Response	Preference*	Feasibility**	Comment			
	I. Exposed Rocky Shores	80							
	II. Exposed Wave-Cut Platform	0							
	II. Fine-to-Medium-Grained Sand Beach	0							
	III. Exposed Compacted Tidal Flat	0	Natural rehabilitation	R	H	high energy on rocky coast			
	III. Coarse-Grained Sand Beach	20	Open water recovery	NR	L	wind and waves			
	III. Mixed Sand and Gravel Beach	0	Near shore recovery	R	L	wind and waves			
	III. Gravel Beach	0	Physical/chem Dispersion	R	H				
	IV. Sheltered Rocky Shore	0	Shoreline pre-cleaning	R	L	target beaches only			
	IV. Boulder/cobble beaches	0	Shoreline cleanup	R	L	target beaches only			
	V. Sheltered Tidal Flat	0	*R=Recommended, NR = Not Recommended, A=Avoid						
	V. Saltmarsh/Mangrove	0	**High/Medium/Low						
	Significance Score		Description/Comment + seasonal issues				Oil impact		Level of Concern
							Points	Category	
Shoreline Character score		2	Exposed rocky shores and sand beaches				25	4a	50
PLANTS AND ANIMALS	Wading/shorebirds	1	NZ dotterel, oystercatchers				10	2d	10
	Seabirds	2	Roosts and offshore feeding areas: mottled, storm and diving petrels, shearwaters and shags.				100	2b	200
	Penguins	5	LBP very common/breed. Yellow eyed resent, Fiordland Crested may visit occasionally				100	2b	500
	Seals/Sea lions	1	Seal haulouts, Hookers sealion - uncommon, leopard seals - rare				5	3d	5
	Whales/dolphins	1	dusky, common, bottle nose dolphins. Occasional whales				250	1b	250
	Fish spawning and nursery areas	1	Blue cod (rec fished)				5	3d	5
	Intertidal shellfish/invertebrates	1	Common species				10	3c	10
	Subtidal shellfish/invertebrates (inc. coral)	1	Oyster beds present offshore.				1	4d	1
	Seaweed	2	Diverse rocky shore communities				5	3d	10
	Seagrass	0							
	Saltmarsh/Mangroves	0							
	Duneland	0							
	Other.....	0					1	4d	0
MANAGED / PROTECTED SITES	Identified (unprotected) sites of importance	1	ASCV				1	4d	1
	Scenic/Historic or Wildlife Protection	4	Scenic/Historic Reserve, Conservation Area				1	4d	4
	Partial marine protection/high value sites	0							
	Nationally recognised marine protection	0							
	Internationally recognised sites	0							
	Other	0							
ECONOMIC	Aquaculture	0							
	Marina	0							
	Commercial - Fish	2	Commercial boats				5	4c	10
	Commercial - Other (eg. tourism, charter fishing	2	Pelagic bird watching, trampers, sea kayaking, kiwi tours at Ocean Beach				5	4c	10
	Port/shipping/Infrastructure	0							
	Other.....	0							
CULTURE & HERITAGE	Food gathering	5	Traditional harvesting sites				10	3c	50
	Cultural significance	20	Early settlement sites, kaimoana, Maori owned land				5	4c	100
	Archaelogical/Historic site	1	Early settlement sites				1	4d	1
	Other.....								
SOCIAL / AMENITY / REC.	High aesthetic value	5	Iconic landscape				1	4d	5
	Recreational shoreline use	1	Limited boating				1	4d	1
	Swimming	0					1	4d	0
	Diving	2	High clarity waters				1	4d	2
	Boating (watercraft)	2	Recreational fishing/boating				5	4c	10
	Other.....	2	Hunting				1	4d	2
	TOTAL	64					550		1237

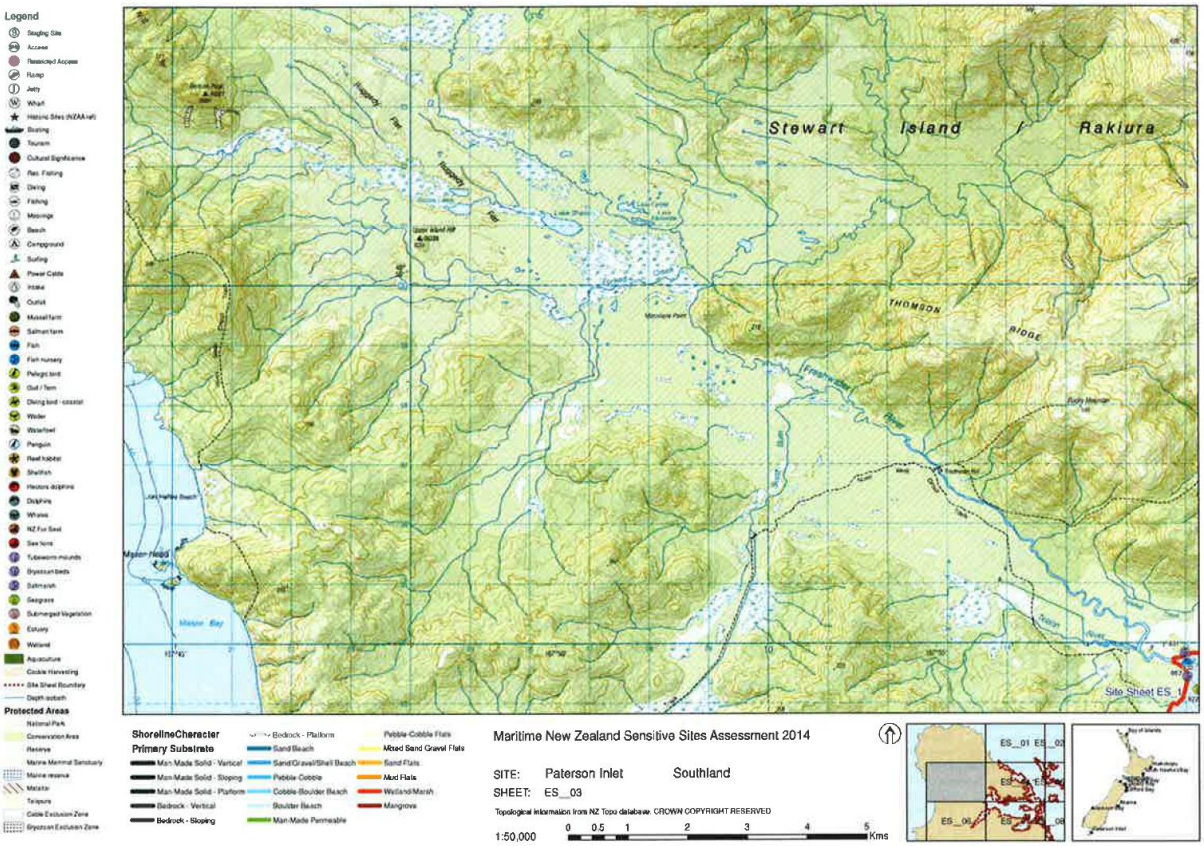
These maps are best viewed on Web EOC. The source document "MNZ Sensitive Sites Report" can be located under "working documents" in the Southland Tier Two Plan section.



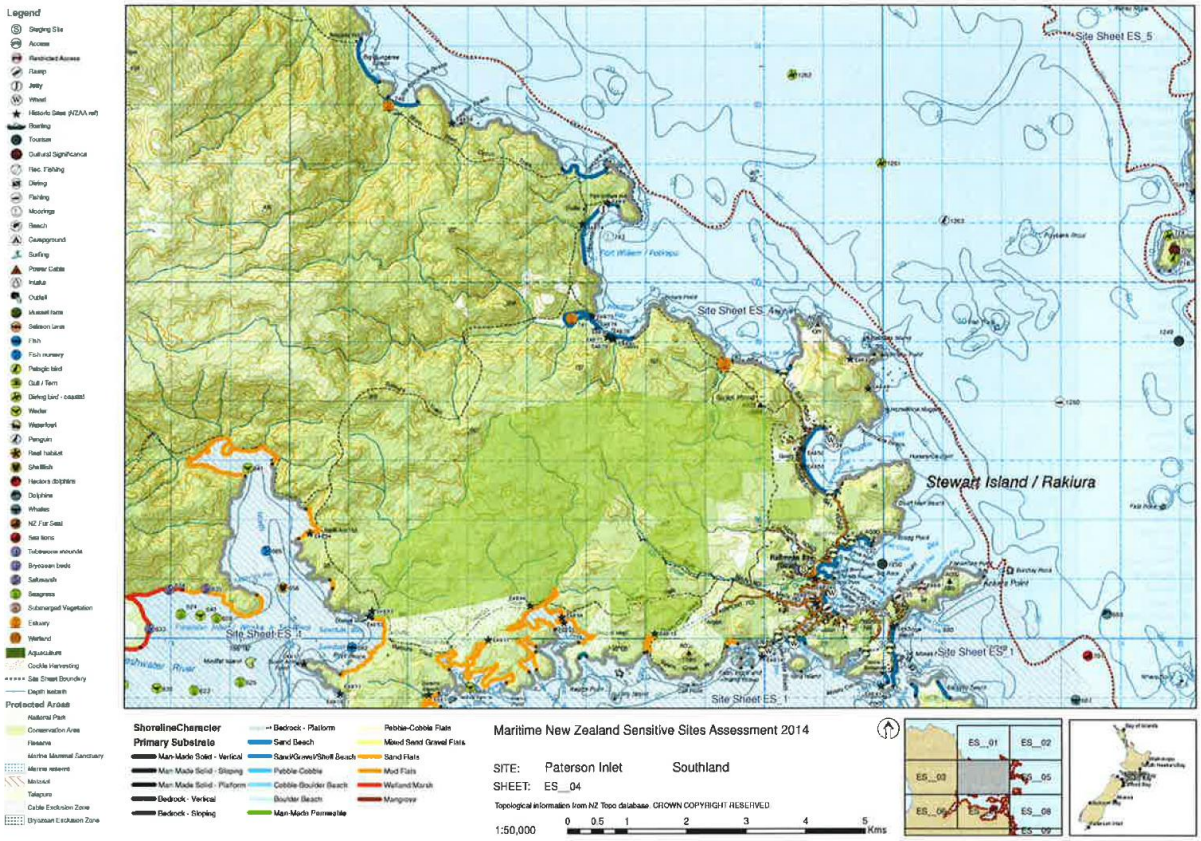


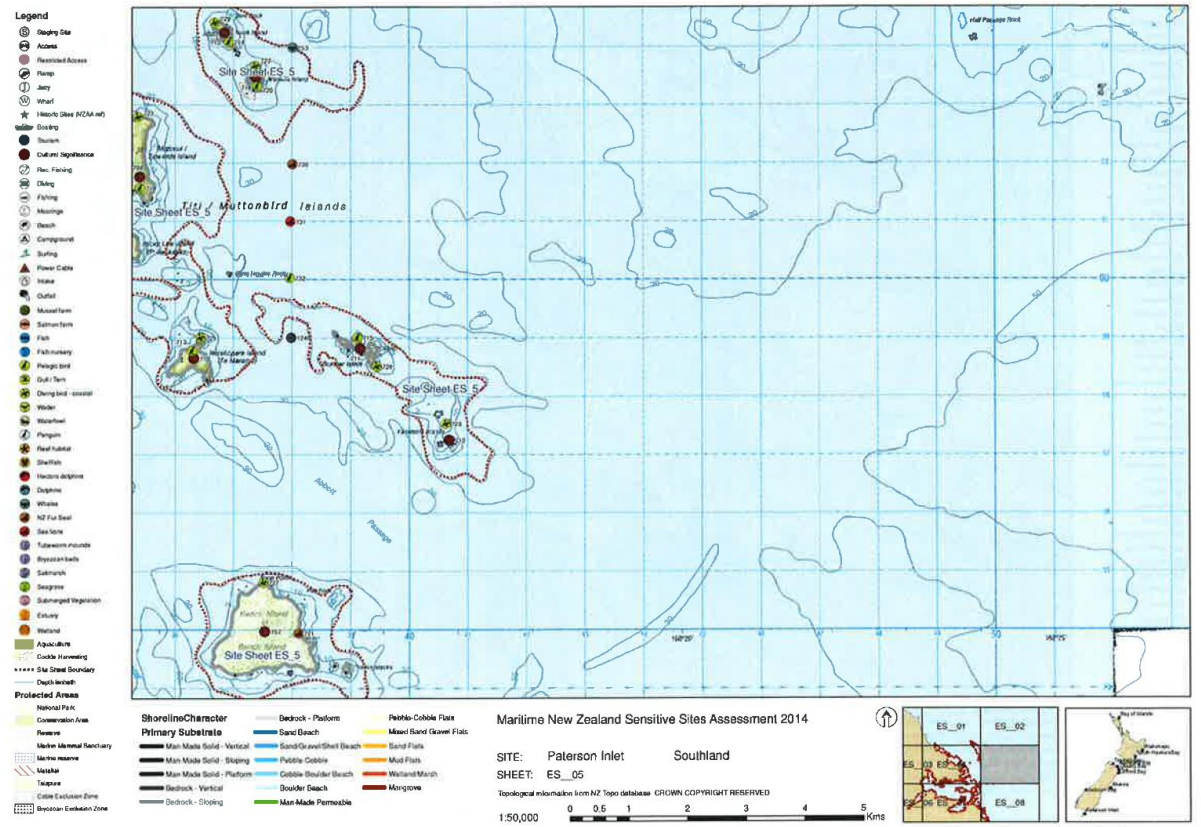
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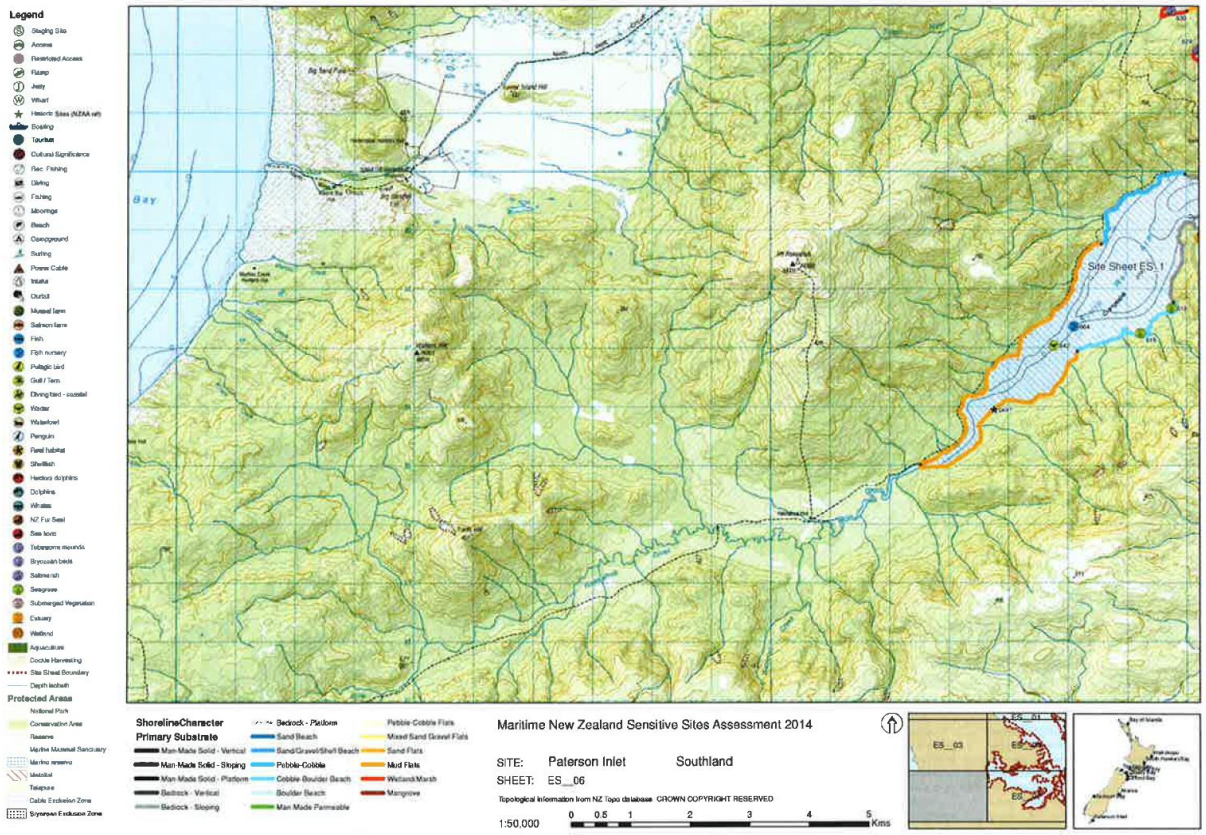


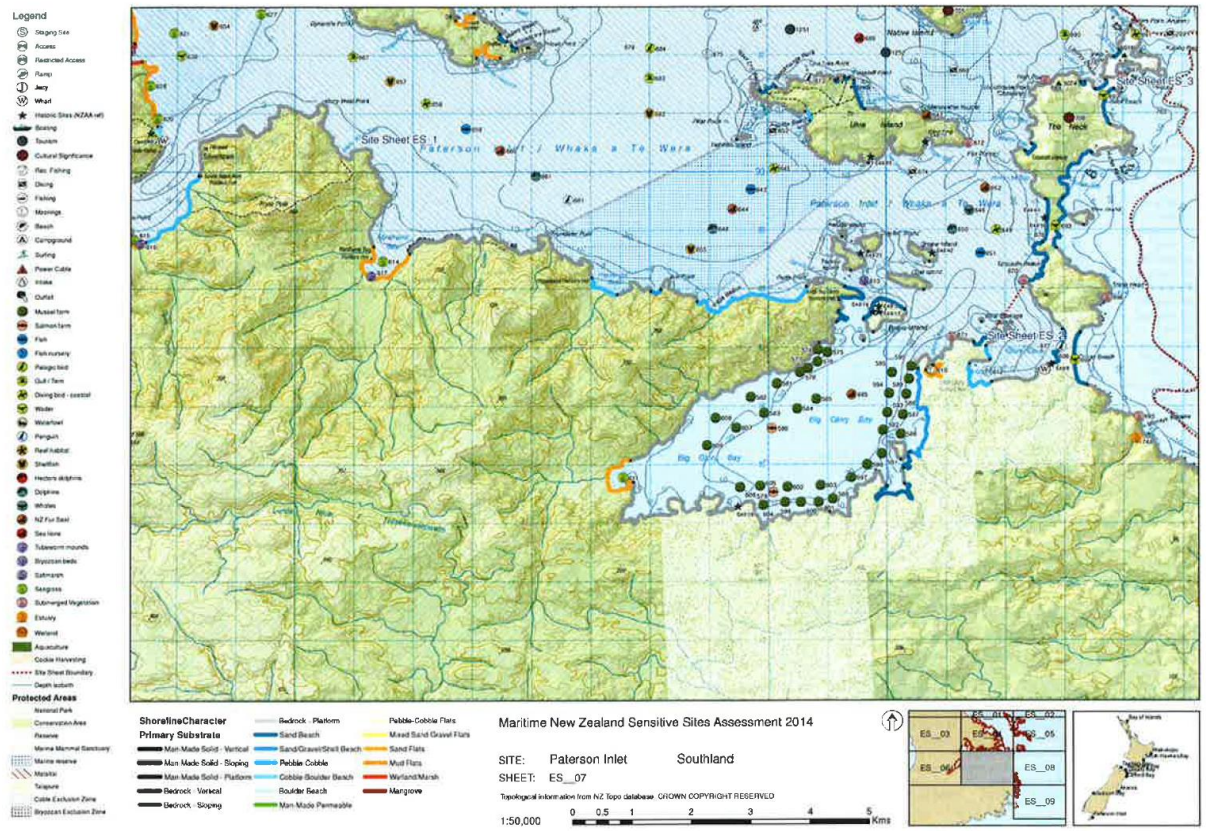
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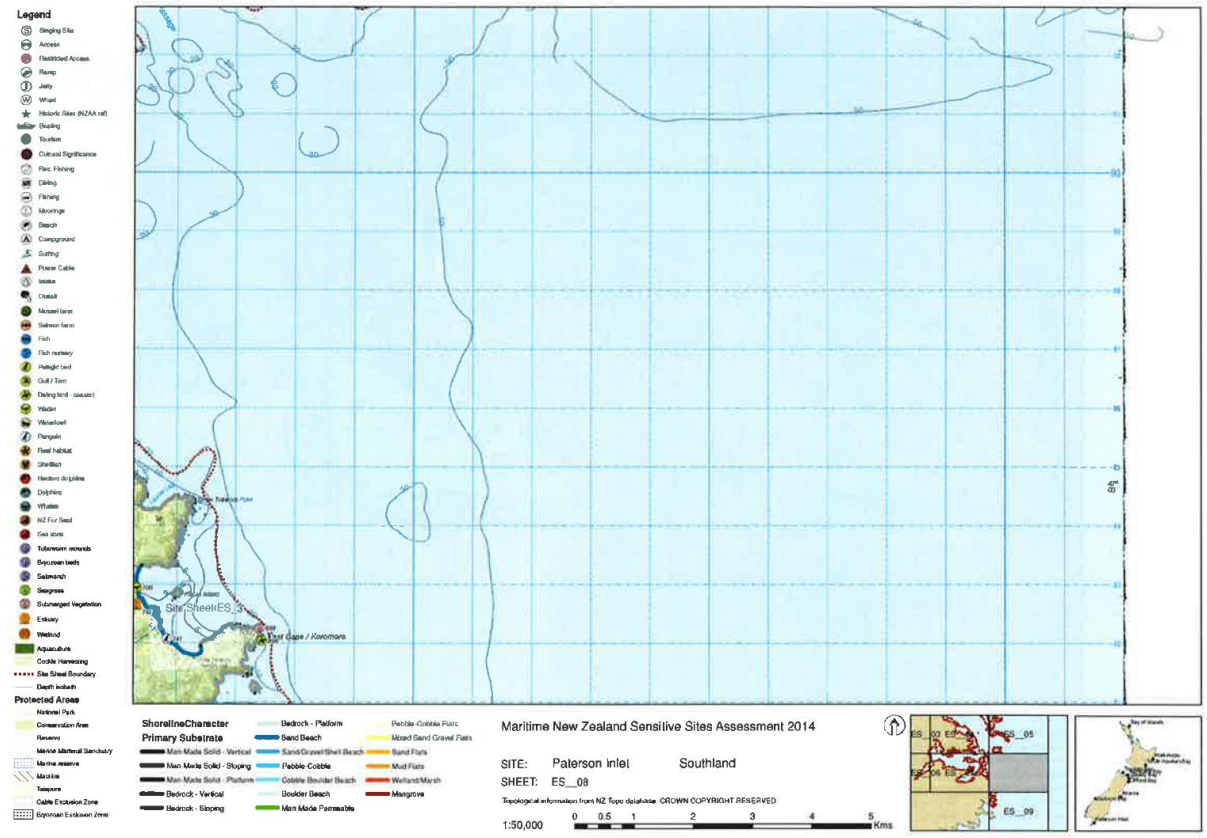


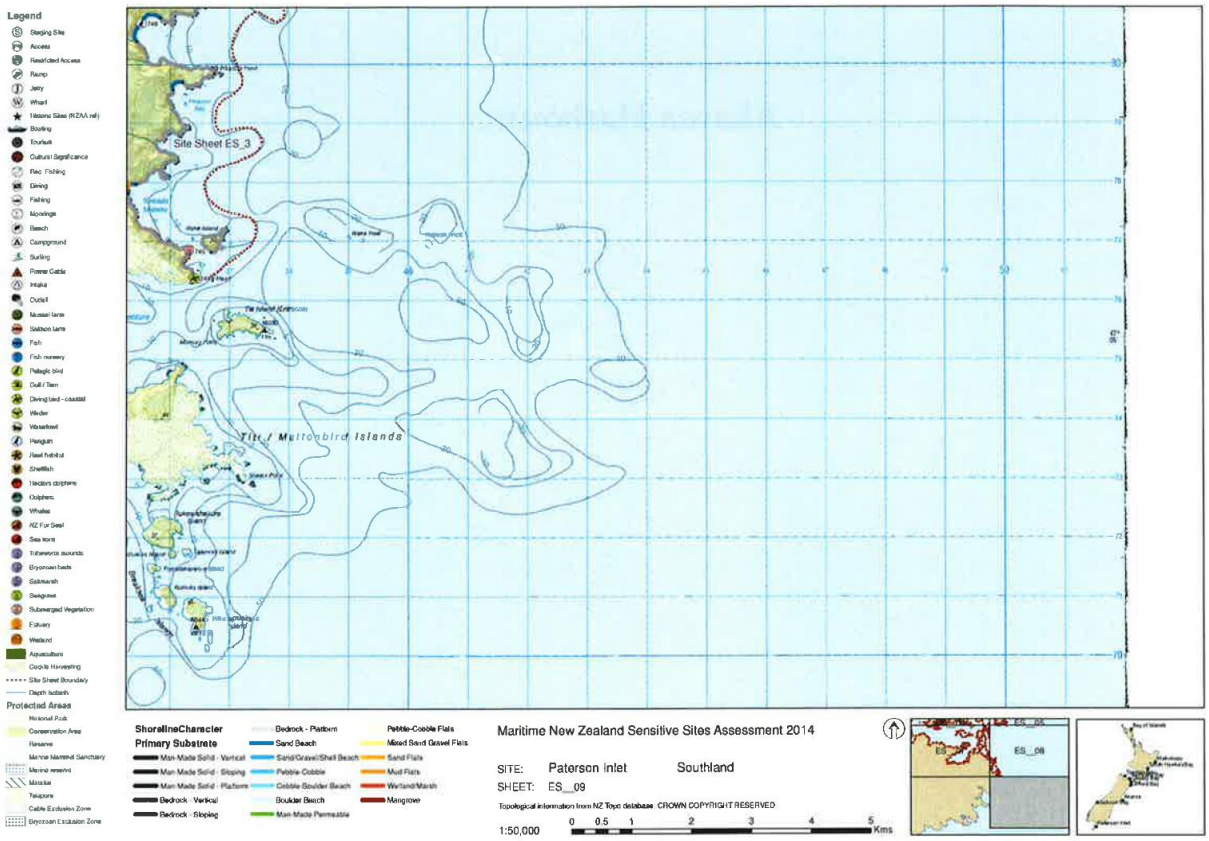
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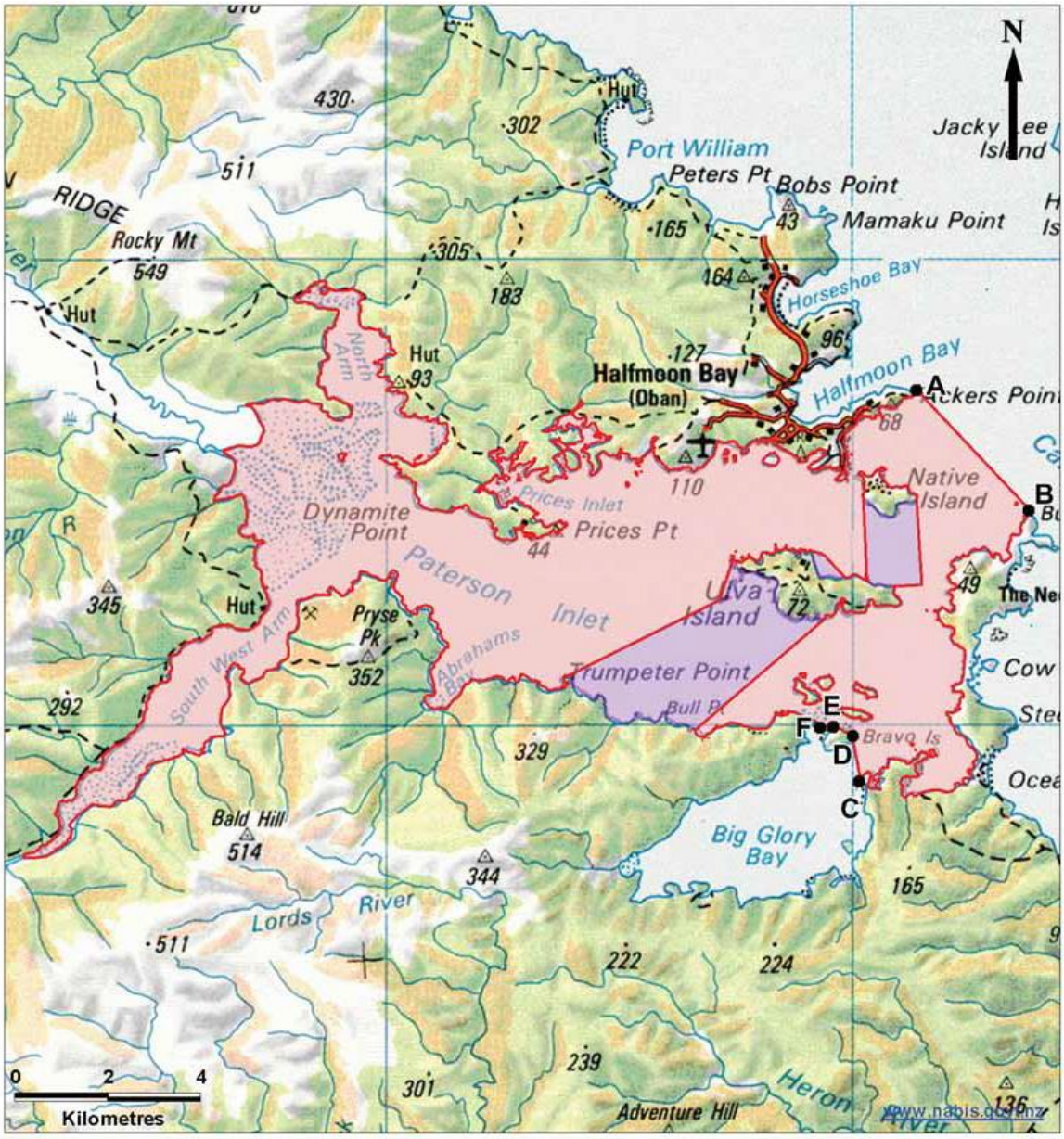


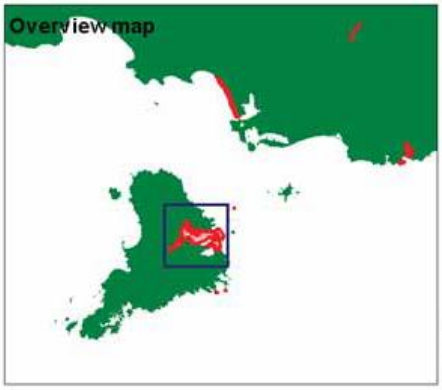
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Te Whaka a Te Wera Mātaitai Reserve





LEGEND

- Mātaitai Reserve Boundary
- Mātaitai Reserve Coordinate
- Marine Reserve Boundary

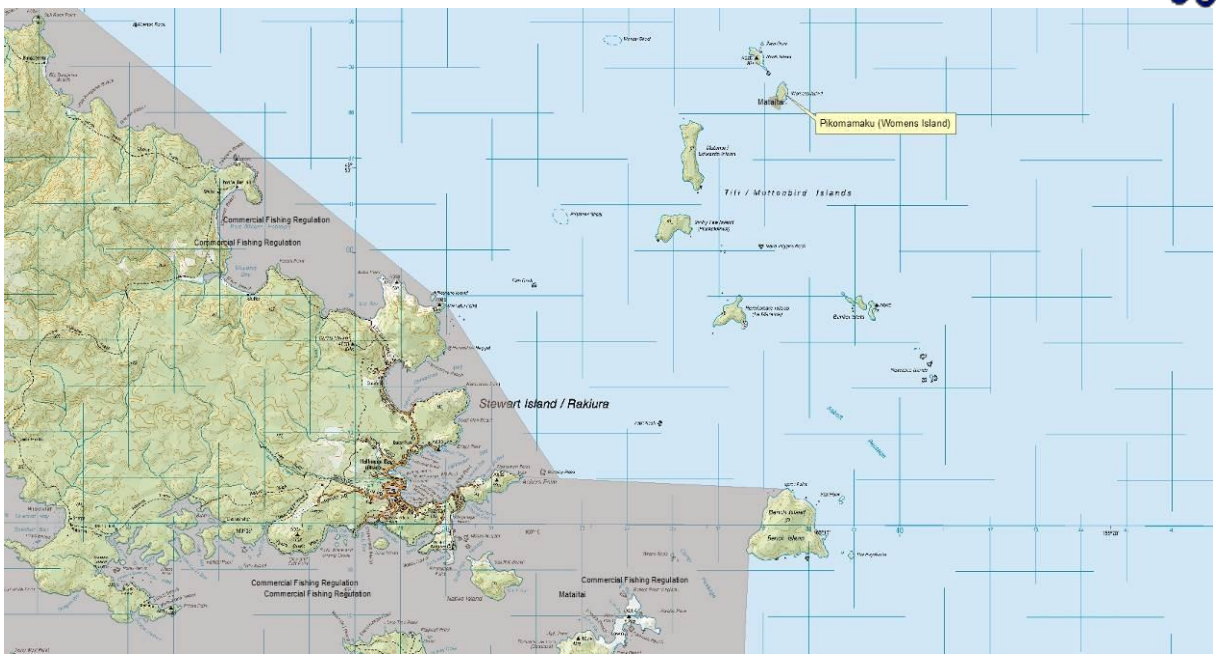
Ministry of Fisheries
Te Tautiaki i nga tini a Tangaroa

Coordinates

A: 46°53.74'S 168°09.86'E
B: 45°55.21'S 168°11.65'E
C: 46°58.23'S 168°08.51'E
D: 46°57.70'S 168°08.45'E
E: 46°57.58'S 168°08.13'E
F: 46°57.58'S 168°07.90'E

Ref: 110046
Projection: NZTM
Date: 8 March 2011
Produced by: Information Centre

This map is intended to be used as a guide only, in conjunction with other data sources and methods, and should only be used for the purpose for which it was developed. Although the information on this map has been prepared with care and in good faith, no guarantee is given that the information is complete, accurate or up-to-date.



Pikomamaku (Womens Island) Maitaitai See http://www.fish.govt.nz/NR/rdonlyres/E96A91A8-5013-4C9C-A964-9D252941FB15/0/PikomamakuMataitai2010.pdf for a more detailed map.



Horomamae (Owens Island) and Kaihuka Mataitai (See http://www.fish.govt.nz/NR/rdonlyres/76DD0D23-6379-4A9C-A506-20212F95CF72/0/HoromamaeMataitai2010.pdf & http://www.fish.govt.nz/NR/rdonlyres/9710F388-5342-413E-A5DF-FDF9C1D22AE5/0/KaihukaMataitai2010.pdf for more detailed maps.

Outcome of 2007 Tabletop Exercise
based on a 52 metre long fishing vessel grounding on Micrometer Rock, South Arm, Port Pegasus spilling some LFO and potentially spilling a lot more, plus some diesel.

QUIP – Noon 29/10

1. **Deploy Aircraft for Reconnaissance**

   - S I Flights;
   - Air Coastguard;
   - helicopter companies;
   - photographer and camera they are familiar with (Compliance?);
   - one other person observing and managing comms back to ICC. Need comms back to EOC to transfer info;
   - sampling capability if helicopter used.

2. **Activate IMT and Advisors and EOC**

   - ROSC;
   - Planning room;
   - contact lists;
   - Oil Spill Plan (trained personnel);
   - structure;
   - public information person.

3. **Open Equipment Store**

   - contact Port Maintenance and place them on standby/alert.

4. **Contact Spiller or Spiller's Rep (Agent)**

   - RCC/South Port/ MNZ for agent;
   - RCC to track where crew are;
   - Police for access to interpreters.

5. **Establish Contact with RCC/Police**

   - source of information;
   - potential to share recon flights, but independence preferred.

Outcome of 2007 Tabletop Exercise
based on a 52 metre long fishing vessel grounding on Micrometer Rock, South Arm, Port Pegasus spilling some LFO and potentially spilling a lot more, plus some diesel.

IAP – 1300 hrs 29/10

Aim – to put the NRT in the best position to respond.

1 Helicopter reconnaissance[1]/spill evaluation/info gathering/sampling flight/flights – ops compliance personnel:
- obtain samples of spilled oil for evidential and dispersant testing purposes;
- establish a forward base and get gear to it asap, including some dispersant.[2]

2 Helicopter flight with equipment for a quick first response, if time permits.

3 Prepare for an oiled wildlife response:
- Dotterel hazing in Cook Arm;
- investigate YEP behaviour to determine vulnerability;
- put oiled wildlife temporary rehabilitation centre on standby;
- move oiled wildlife kit/equipment to the forward base.

4 Source a person with local knowledge to act as an advisor:
- start with DOC and Bluff Fisherman's Radio.

5 Public info, community relations, e.g. fishermen, concessionaires
- identify key parties.

6 Salvage plans – are there any? Involvement of crew – where to take it if salvaged. Liaise with owner's representative (see QUIP 4) and MNZ (NOSC or Directors Advisory Team)
- salvage plans need approval.

7 Establish what vessels are present in the area that may be able to assist with dinghies, accommodation, etc..[3]

8 Send catamarans or *Southern Winds* down for accommodation and dinghy. If departing from Stewart Island, go to Bluff first to pick up bulk of equipment.

9 Establish a long term EOC for NRT:
- set up status boards.

---

[1] Secure helicopter quickly, i.e. before press/TC do.
[2] Old wharf in North Arm a potential site, but it is 7-8 km from spill site. Also need permission from private land owner.
[3] Marine VHF ch 61 & 65 and visual observation.

10 Deploy oil recovery vessels – liaise with MNZ – Hercules and/or road transport.

11 Mobilise Otago oil spill equipment - booms/dispersant, etc.

12 Prevent further spillage and minimise impact of spilled oil:
- determine oil trajectories, both short and long term;
- determine quantities on board vessel;
- identify sensitive areas;
- assess suitability of dispersants before and after high tide;
- think about "what ifs".

13 Health and Safety – accommodation:
- temp huts/bivys (DOC has some of these);
- *Southern Winds* (DOC boat);
- Patricia (Port Maintenance boat);
- Aurora Charters boat/s (Colin Hopkins).

Clothing (wet weather gear), PEP (gloves, footwear), comms (between parties and back to EOC), security, remoteness, insect repellent, sunhats.

DoC Huts at Port Pegasus (See DoC website for more info - http://www.doc.govt.nz/parks-and-recreation/hunting/where-to-hunt/southland/stewart-island-rakiura-hunting/places-to-stay/)

Dallas Bradley

From: DCHITTENDEN@doc.govt.nz
Sent: Wednesday, 13 June 2007 12:05 p.m.
To: Dallas Bradley
Subject: RE: Oil Spill Exercise

Hi

Norris asked me to pass this on.

Area	AssetName	AssetType	SleepingCap	Mapsheet	MetE	Me
Southern Islands Area	North Pegasus Hunter's Hut	Basic Hut/bivvy		8D49	2105721	532168
Southern Islands Area	South Pegasus Hunters Hut	Basic Hut/bivvy		8D49	2103498	532115

Give me a call (03) 2190012 if you need any further detail.

Dale

From: Roberts, Andy Southland CO
Sent: Friday, 8 June 2007 4:27 p.m.
To: Chittenden, Dale STEWART ISLAND FC
Subject: FW: Oil Spill Exercise

Hi Dale,

please e-mail Dallas with the grid refs of the hunter huts

regards
Andy Roberts

From: Dallas Bradley [mailto:dallas.bradley@es.govt.nz]
Sent: Friday, 8 June 2007 2:24 p.m.
To: aroberts@doc.govt.nz
Subject: Oil Spill Exercise

Hi Andy,

Can you give me some info on the wildlife in the area from Kelp Point to the east end of Pegasus Passage, especially Islet Cove.

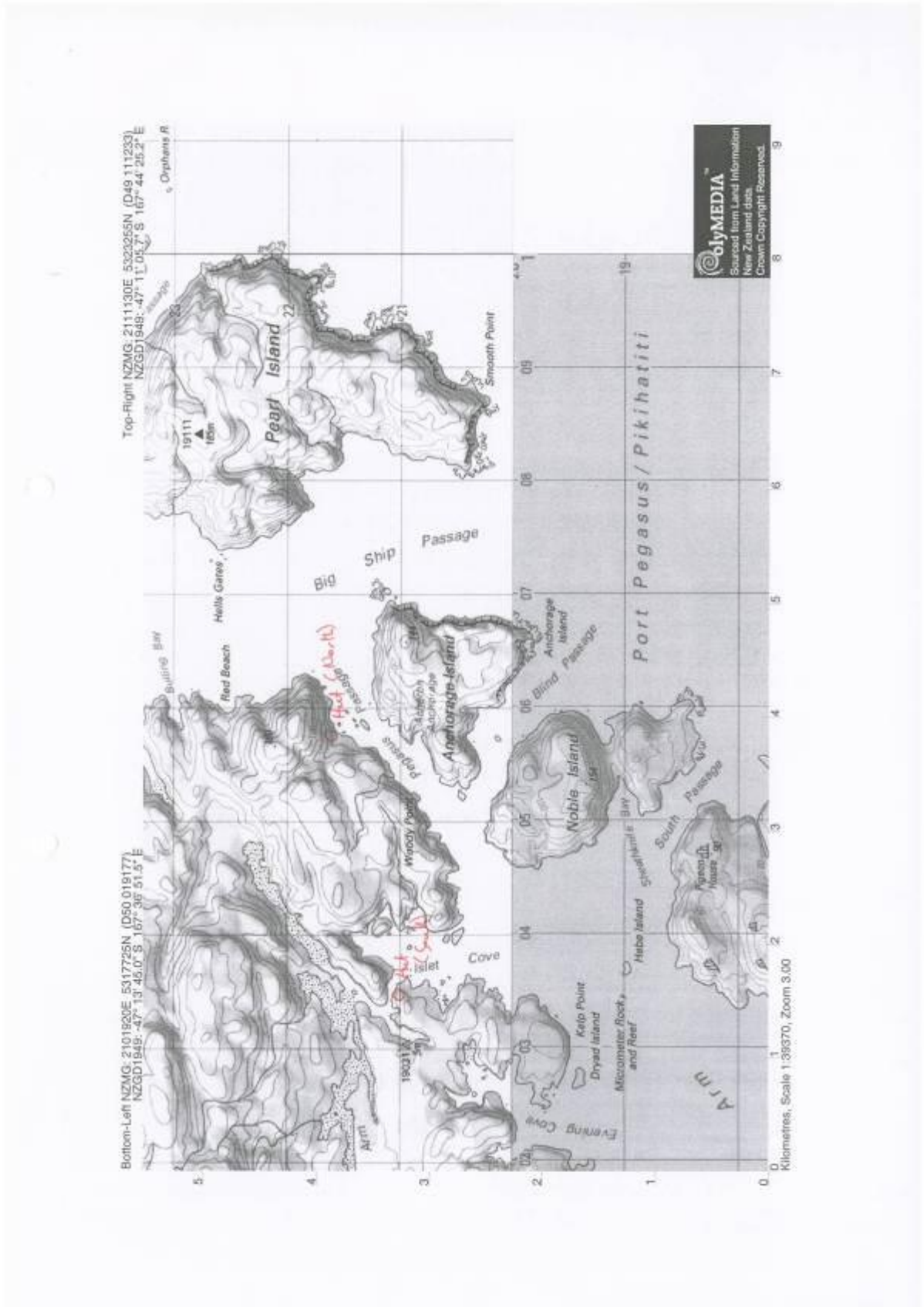
Also some info on the rest of South Arm, especially if there is any that is particularly significant.

The Scenario will be based on a Joint Venture fishing boat coming to grief on Micrometer Rock and Light Fuel Oil (sticky black stuff) escaping from a holed tank. In the first six hours or so the oil is most likely to head north east.

Could I also have the map refs for the hunters huts in the area.

Thanks,

13/06/2007


Top-Right NZMG: 2111130E 5323255N (D49 111233)
NZGD1949: -47° 11' 05.7" S 167° 44' 25.2" E
Bottom-Left NZMG: 2101920E 5317725N (D50 019177)
NZGD1949: -47° 13' 45.0" S 167° 36' 51.5" E
Pearl Island
Smooth Point
Hells Gates
Big
Ship
Passage
Red Beach
Anchorage Island
Anchorage Island
Blind Passage
Port Pegasus / Pikihatiti
Noble Island
South Passage
Woody Point
Cove
Islet
Kelp Point
Dryad Island
Hebe Island
Micrometer Rock and Reef
Evening Cove
Arm
Kilometres, Scale 1:39370, Zoom 3.00
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Incident Action Plan

Oil Spill Exercise, 17 June 2011: BOM666 spill, Ulva Island, Paterson Inlet

Incident

BOM666 – hit rocks, drifted to Sydney Cove, Ulva – 1,000 LFO lost initially.

Assessment

- NE wind, approx 20 kts
- oil could drift to entrance BGB – tide dependent – and also south side Ulva
- oil sources/places:
  - Bullers to Sydney Cove incl. NE shore of Ulva Is
  - Sydney Cove – spill could end up moving west up inlet
  - in vessel and on shore along Ulva (NW shore)

Impact

- marine reserve – in water (surface mainly)
- wildlife risks including NZ Dotterel toward head of inlet (Freshwater Flats)
- yellow eyed penguin (Neck/Bravo)
- potential feeding area/s for titi
- Mataitai area (kaimoana) Neck, Bravo – Phil Smith
- onshore valued for iwi
- effects on surface water – water taxis, BGB traffic
- seals on Bench Island ??? & Shags on Whero Rock
- BGB marine farms?
- Tourist Operators to Ulva Island

IAP

- activate response team
- put plane observer up
- predict oil movement by hand and get Maritime NZ to run the trajectory model.
- store (gear) on standby – move/stage to HM/Bay wharf or Golden Bay or leave on ferry
- involve Phil Smith (Mataitai committee Chairman)
- involve Rakiura Maori Land Inc
- involve the Stewart Island Community Board
- involve charter boat operators, especially those travelling to Ulva Island.
- comms requirement on Stewart Island – Ch. 65/cell phone
- **Note: Local vessels used for Search & Rescue purposes are listed in the Stewart Island LandSar Plan**

Treat Spill as three separate spills, those being as follows:

1. ***Bullers Pt – Sydney Cove options?***

- dispersant use? (use guidelines and Tier 2 Plan guidance) Consult DOC & Iwi – Dispersant use unlikely.
- await plane report for oil that has bypassed Ulva.
- Shoreline clean up for NE coast of Ulva.
- Oiled Wildlife recconaisance on affected coast within the Inlet (Plane will advise)

2. Sydney Cove (ongoing spillage)? & west thereof

- Prevent spreading – use booms (Ops personnel to determine the most effective deployment location). Options include placing booms around or on leaking side of the vessel or capture oil down tide of the vessel. Alongshore current is strongest between Flagstaff Point and Small Island 100 metres to the east.
- use DoC stabis/local dinghies/JR's landing craft
- Sydney Cove (northwest coast)– shoreline cleanup

3. Vessel (potential spill)

- prevent further spill from vessel – transfer fuel internally – could be up to two hours for 9,000 L
- anchors dragging – could go ashore. Secure/stabilise vessel to prevent it from going ashore – use Real Journeys, Sandfords or Rakiura Shipping vessels
- to to be deployed to secure vessel.
- responder to be put on board to liaise (Harbourmaster – via DOC boat/pilot ladder)
- interpreter needed on board
- expected current 2-3 kts/tide turn may beat boom installation

4. Freshwater flats protection required *(Most sensitive area from a wildlife perspective)*

- Monitor with aircraft
- Oiled wildlife reponse if required.

5. Available vessels (See Annex 1.7.4(a) of this Plan)

- Real Journeys + Rakiura Shipping + Sanfords – to stabilise/avoid grounding until tug on station
- tug to be deployed asap to secure vessel

6. Dive inspection for damage

- salvage assessment

7. Oiled wildlife

- Invercargill City Council facility at Donovan Park on standby.

LOCATION OF PRINCIPAL OYSTER BEDS
(See Map on next page). - for more info contact M. Fish Dunedin
Alan Frazer.

Frequency of fishing disturbance, 1975–1976

In 1975–1976, a dredge survey found that 91% of the total oyster population was concentrated in 50 or so small dense oyster beds (Allen and Cranfield, 1979; Doonan *et al.*, 1994). Although the oyster survey covered 374 km^2 of Foveaux Strait, these small dense oyster beds covered only 12 km^2 (3%) of the survey area (see Cranfield *et al.*, 1996). These individual dense oyster beds were the only part of the seafloor of Foveaux Strait commercially dredged in those years. Records from the fishery in 1976 show that the 23 vessel fleet dredged for 8584 h and caught 89 million oysters (Marine Department records). The mean length of each dredge tow in that year was 617 m, each vessel towed two 3.35 m wide dredges and made between four and five tows each hour (Stead, 1971a). Hence, during the 1976 oyster season, oyster vessels dredged between 142 km^2 and 178 km^2 of the seafloor. Because fishing was confined to the small dense oyster beds, each square metre of oyster bed could have been swept by dredges between 12 and 15 times. As fishing each season was confined to only a few of the 50 oyster beds, actual fishing pressure on these beds was likely to have been three to four times higher.

Effect of dredging on the distribution of epifaunal reefs and oysters from 1962

Epifaunal reef material was still caught widely on the Dog Island and Bird Island Beds in the 1950s, but reefs were reduced to small areas by the mid 1960s. Almost all epifaunal reefs disappeared from these beds shortly after 1968 (fishers' records).

From 1962, research surveys provide data that enable us to follow changes in the distribution of epifaunal reefs and oysters throughout Foveaux Strait. The distribution of oysters and epifaunal reef bycatch in Foveaux Strait in 1962 was charted from Survey 4 (Figure 6a). There were still no oysters in the area of the East Bed; however, they were widespread in many large, dense patches through much of the rest of Foveaux Strait but were less dense in the east than in the west. Oysters were found at low densities on the sites of the Halfmoon Bay and Port William Beds. Epifaunal reef material was also caught in the environs of these beds suggesting epifauna may be regenerating 75 years after disturbance from fishing ceased. The distribution of epifaunal bycatch throughout Foveaux Strait indicates that by 1962 epifaunal reefs were rare in the east, but were common throughout western Foveaux Strait.

Between 1965 and 1971, oyster fishing concentrated on beds in the western side of Foveaux Strait and, during this time, the mean density of oysters in the west became reduced to the same low densities recorded earlier in the east (Survey 6, Table 1). The distribution of oysters and epifaunal reef bycatch in Foveaux Strait in 1976 (Figure 6b) was charted from dredge Survey 6 that covered the area of Foveaux Strait then fished commercially. Due to differences in the dredges used in 1962 and 1975 and the density of stations in the areas sampled, we have not been able to scale the density maps from these surveys quantitatively. A comparison of Figures 6a and 6b, however, shows the density of oysters in eastern Foveaux Strait has been considerably reduced from 1962. The distribution of epifaunal reef bycatch indicated that epifaunal reefs had also been reduced. Reefs were confined to the central and western Foveaux Strait around the edges of the area exploited in those years. From 1972 to 1986, the western side of Foveaux Strait was trawled extensively during the closed oyster season and so the seafloor was subjected to further disturbance over this period. There are no records of the intensity or scale of this disturbance.

In 1978, the fleet focused fishing on a newly exploited medium sized oyster bed south of Bluff Hill that became termed 'D Street'. Fishers found that this bed consisted of alternating strips of epifauna with dense oysters and strips without oysters. A side-scan sonar traverse of part of this bed in 1978, before this local heavy exploitation began, found that the seafloor consisted of alternating strips of epifaunal reefs that ranged from 80 to 100 m in width and strips of sandy substrata that ranged from 80 to 500 m in width (authors' unpublished records). In the following 5 years most of the 23^3 vessels regularly concentrated exploiting this area, first removing most of the epifaunal reefs and then most of the oysters

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from this bed (fishers' observations). The oyster catch from this bed can be isolated from catch statistics and shows the progressive increase in oyster catch during this process followed by the commercial extinction of oysters in this area by 1983 (Figure 4).

In the early 1980s, epifaunal reefs were present only on the periphery of the oyster beds in southern and western Foveaux Strait. From that time, these beds were fished more heavily as mortality from fishing

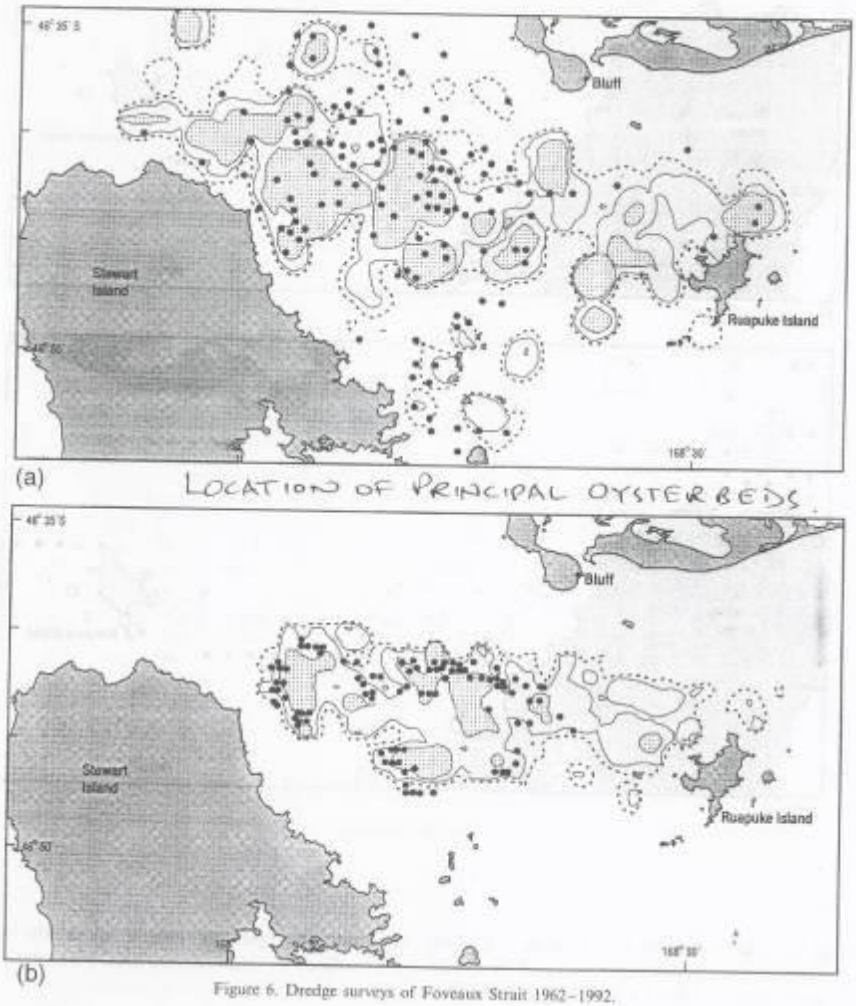


Figure 6. Dredge surveys of Foveaux Strait 1962–1992.

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Aquatic Conserv: Mar. Freshw. Ecosyst. 9: 461–483 (1999)

See Keith Hamill for a copy of the entire paper.

See the ES Coastal Scientist for a full copy of the above paper.


Codfish Island
Ruapuke Island
Ernest Islands
Muttonbird Islands
Big South Cape Island
Pearl Island
Department of Survey and Land Information Map
Licence 1988/144: Crown Copyright Reserved.
AREA MAP 10: STEWART ISLAND, RUAPUKE ISLAND, CODFISH ISLAND A
MUTTONBIRD (TITI) ISLANDS AND ASSOCIATED ISLANDS

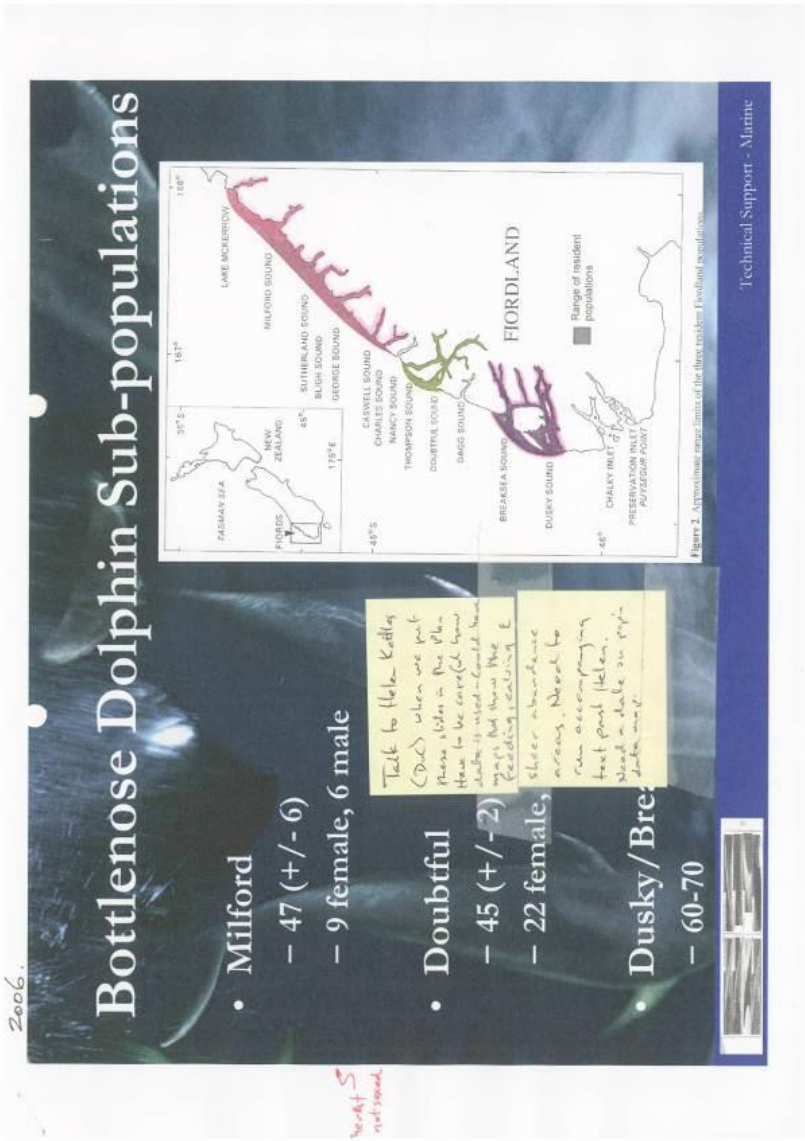
4.14 Significant Habitats of NZ Fur Seal, Hookers Sea Lion, Bottle Nosed, Dusky and Hectors Dolphins, Fiordland Crested Penguins, Yellow Eyed Penguins and Sea Bird Colonies (including Titi)

Firstly, refer to Annex 4.1 for region wide information sources that may contain quite particular information on the area covered by this part of Annex 4.

Te Tangi a Tauira, an Iwi Management Plan recognised by Te Runanga o Ngai Tahu contains maps identifying areas of particular importance to Ngai Tahu ki Murihiku. While these maps are a starting point for identifying places that may be affected by oil spills but they do not replace the need for direct communication and dialogue with Ngai Tahu ki Murihiku. Initially at least, such communication should occur through the Iwi Advisor. Section 3.7 of Te Tangi a Tauira specifically addresses offshore Islands.

Ros Cole from DoC in Invercargill is the Department's local expert in marine mammals.

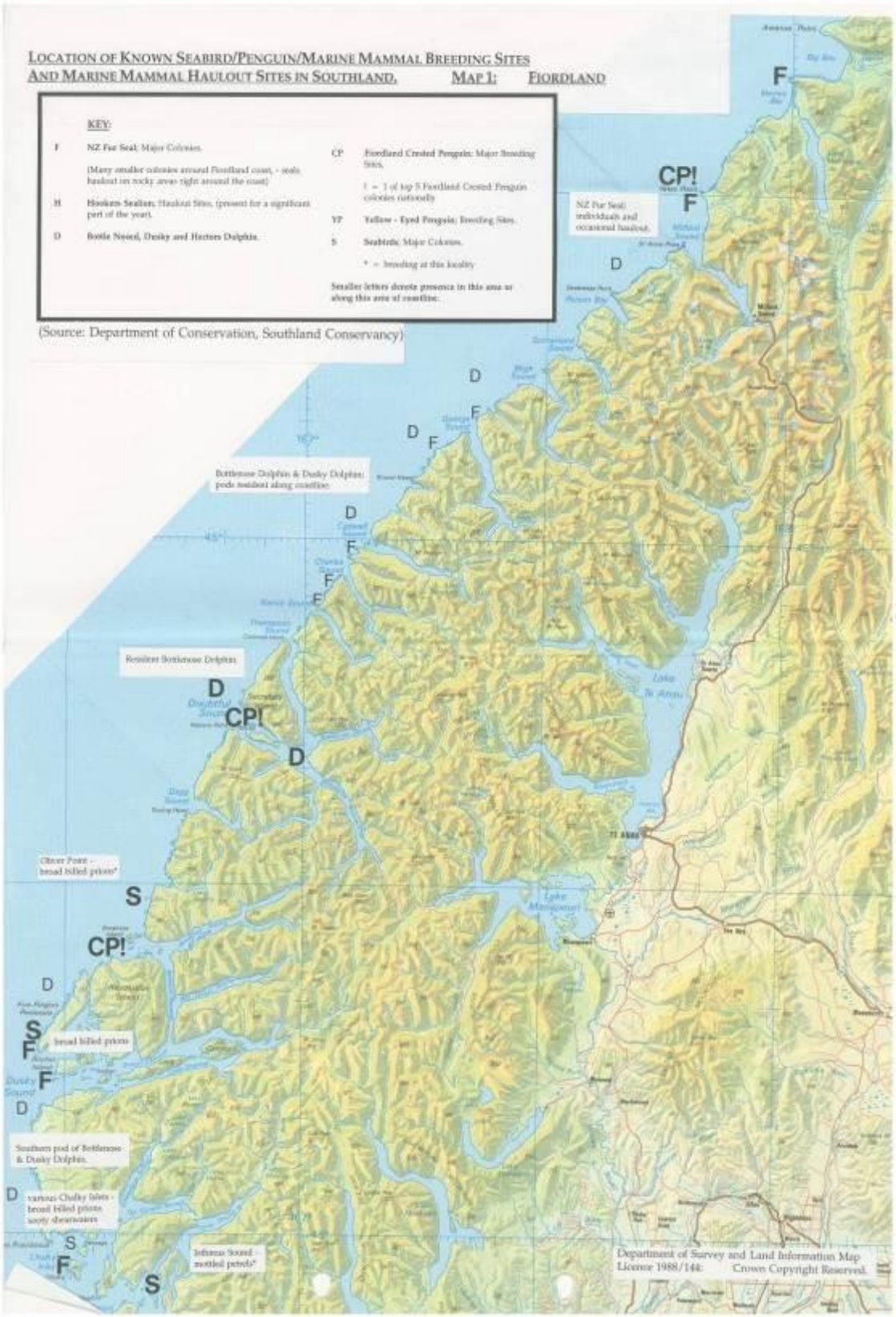
The following maps contain information on the general location of the above wildlife in Fiordland and more specific information on the location of bottle nosed dolphins. See also the reference to the Doubtful Sound Dolphin Protection Zones in Section 4.12.

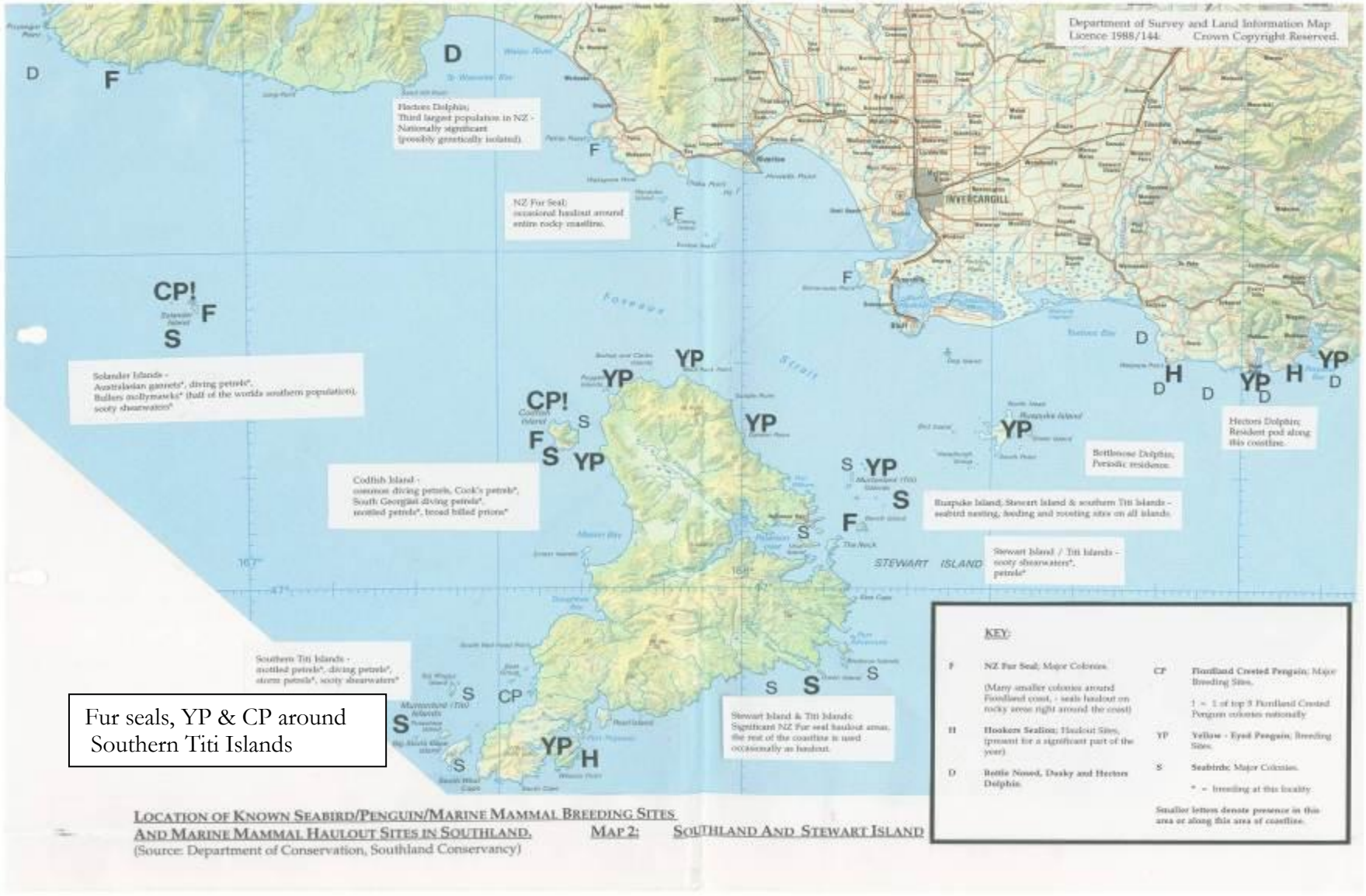


Significant Habitat Areas - Milford Sound
1999-2002
Signficant Habitat - observational
Technical Support - Marine

Signficant Habitat Areas
Doubtful Sound
1999-2002
Critical Habitat
Important Habitat
Technical Support - Marine

Significant Habitat Areas
Doubtful Sound
Resting
Socialising
Technical Support - Marine


LOCATION OF KNOWN SEABIRD/PENGUIN/MARINE MAMMAL BREEDING SITES
AND MARINE MAMMAL HAULOUT SITES IN SOUTHLAND. MAP 1: FIORDLAND
KEY:
F NZ Fur Seal: Major Colonies.
(Many smaller colonies around Fiordland coast, - seals haulout on rocky areas right around the coast)
H Hookers Sealion: Haulout Sites, (present for a significant part of the year).
D Bottle Nosed, Dusky and Hectors Dolphin.
CP Fiordland Crested Penguin: Major Breeding Sites.
1 = 1 of top 5 Fiordland Crested Penguin colonies nationally
YP Yellow - Eyed Penguin: Breeding Sites.
S Seabirds: Major Colonies.
* = breeding at this locality
Smaller letters denote presence in this area or along this area of coastline.
(Source: Department of Conservation, Southland Conservancy)
NZ Fur Seal: individuals and occasional haulout.
Bottlenose Dolphin & Dusky Dolphin: pods resident along coastline.
Resident Bottlenose Dolphins
Otter Point - broad billed prion*
broad billed prion
Southern pod of Bottlenose & Dusky Dolphin.
various Chalky Inlets - broad billed prions sooty shearwaters
Infirmus Sound - mottled petrels*
Department of Survey and Land Information Map
License 1988/144: Crown Copyright Reserved.



Fur seals, YP & CP around Southern Titi Islands

LOCATION OF KNOWN SEABIRD/PENGUIN/MARINE MAMMAL BREEDING SITES AND MARINE MAMMAL HAULOUT SITES IN SOUTHLAND. MAP 2: SOUTHLAND AND STEWART ISLAND
(Source: Department of Conservation, Southland Conservancy)

4.15 Bird Species and Rehabilitation Priorities

4.15.1 *Southland Wildlife Rehabilitation Priority Rankings*

In some circumstances (e.g. where there are a large number of species impacted by an oil spill) it may be necessary for the Wildlife Co-ordinator to establish priorities for deterrence, rescue and rehabilitation of wildlife. The following web link http://www.doc.govt.nz/Documents/science-and-technical/nztcs4entire.pdf and the following categories[2] will provide some assistance with assigning priority rankings. The web link is to a 2012 DoC publication that describes the conservation status of NZ birds

Category 1: First priority for deterrence, rescue and rehabilitation

Genus	**Species**	**Name** (Heather&Robertson)	**Maori name**	**SRC Category**
Morus	*serrator*	Australasian gannet	Takapu	1
Limosa	*lapponica*	Bar-tailed godwit	Kuaka	1
Diomedea	*melanophrys*	Black-browed mollymawk		1
Sterna	*albostriata*	Black-fronted tern	Tarapiroe	1
Eudyptula	*minor*	Blue penguin	Korora	1
Diomedea	*bulleri*	Buller's mollymawk		1
Puffinus	*bulleri*	Buller's shearwater		1
		Campbell Island Teal		1
Pterodroma	*cookii*	Cook's petrel	Titi	1
Eudyptes	*sclateri*	Erect-crested penguin		1
Eudyptes	*pachyrhynchus*	Fiordland crested penguin	Tawaki	1
Puffinus	*carneipes*	Flesh-footed shearwater		1
Diomedea	*chrysostoma*	Grey-headed mollymawk		1
Halcyon	*sancta*	Kingfisher	Kotare	1
Phoebetria	*palpebrata*	Light-mantled sooty albatross		1
Pterodroma	*inexpectata*	Mottled petrel	Korure	1
Charadrius	*obscurus*	New Zealand dotterel	Tuturiwhatu	1
Eudyptes	*chrysocome*	Rockhopper penguin		1
Diomedea	*epomophora*	Royal albatross	Toroa	1
Puffinus		Short-tailed shearwater		1
Diomedea	*cauta*	Shy mollymawk		1
Puffinus	*griseus*	Sooty shearwater	Titi	1
Leucocarbo	*chalconotus*	Stewart Island Shag		1
Diomedea	*exulans*	Wandering albatross		1
Puffinus	*pacificus*	Wedge-tailed shearwater		1
Egretta	*Alba*	White heron	Kotuku	1
Megadyptes	*antipodes*	Yellow-eyed penguin	Hoiho	1

[2] The list is based upon Malloy and Davis categories A,B,C and O. However, the list has been varied in order to take into account regional characteristics, and regional species variations, according to the results of a meeting between Southland Regional Council, Department of Conservation and Te Ao Marama Incorporated.

Category 2: Second priority for deterrence, rescue and rehabilitation

Pachyptila	*desolata*	Antarctic prion		2
Sterna	*vittata*	Antarctic tern		2
Procellaria	*parkinsoni*	Black petrel	Taiko	2
Cygnus	*atratus*	Black swan		2
Larus	*bulleri*	Black-billed gull		2
Pachyptila	*vittata*	Broad-billed prion	Parara	2
Catharacta	*Skua*	Brown skua	Hakoakoa	2
Sterna	*caspia*	Caspian tern	Taranui	2
Pelecanoides	*urinatrix*	Common diving petrel	Kuaka	2
Numenius	*madagascariensis*	Eastern curlew		2
Pachyptila	*turtur*	Fairy prion	Titi Wainui	2
Tringa	*nebularia*	Greenshank		2
Anas	*gracilis*	Grey teal	Tete	2
Tringa	*incana*	Wandering tattler		2
Procellaria	*westlandica*	Westland petrel		2
Numenius	*phaeopus*	Whimbrel		2
Pelagodroma	*marina*	White-faced storm petrel	Takahikare-moana	2
Sterna	*striata*	White-fronted tern	Tara	2

Category 3: Third priority for deterrence, rescue and rehabilitation

Fulmarus	*glacialoides*	Antarctic fulmar		3
Stercorarius	*parasiticus*	Arctic skua		3
Anas	*rhynchotis*	Australasian shoveler	Kuruwhengi	3
Charadrius	*bicinctus*	Banded dotterel	Tuturiwhatu	3
Phalacrocorax	*carbo*	Black shag	Kawau	3
Larus	*dominicanus*	Black-backed gull	Karoro	3
		Canada Goose		3
Daption	*capense*	Cape pigeon		3
Calidris	*ferruginea*	Curlew sandpiper		3
Pachyptila	*crassirostris*	Fulmar prion		3
Procellaria	*cinerea*	Grey petrel		3
Calidris	*canutus*	Lesser knot	Huahou	2
Phalacrocorax	*melanoleucos*	Little shag	Kawaupaka	3
Macronectes	*Halli*	Northern giant petrel		3
Pluvialis	*Fulva*	Pacific golden plover		3
		Paradise Shelduck		3
Calidris	*melanotos*	Pectoral sandpiper		3
Haematopus	*ostralegus*	Pied oystercatcher	Torea	3
Phalacrocorax	*varius*	Pied shag	Karuhiruhi	3
Himantopus	*himantopus*	Pied stilt	Poaka	3
Stercorarius	*pomarinus*	Pomarine skua		3
Larus	*novaehollandiae*	Red-billed gull	Tarapunga	3
Calidris	*ruficollis*	Red-necked stint		3
Egretta	*Sacra*	Reef heron		3
Platalea	*Regia*	Royal spoonbill		3
Pachyptila	*salvini*	Salvin's prion		3
Calidris	*Alba*	Sanderling		3
Calidris	*acuminata*	Sharp-tailed sandpiper		3
Tringa	*brevipes*	Siberian tattler		3
Pelecanoides	*georgicus*	South Georgian diving petrel		3
Macronectes	*giganteus*	Southern giant petrel		3
Stictocarbo	*punctatus*	Spotted shag	Parekareka	3
Pachyptila	*belcheri*	Thin-billed prion		3

Arenaria	*interpres*	Turnstone		3
Haematopus	*unicolor*	Variable oystercatcher	Torea; Toreapango	3
Procellaria	*aequinoctialis*	White-chinned petrel		3
Ardea	*novaehollandiae*	White-faced heron		3
Chlidonias	*leucopterus*	White-winged black tern		3

Category 4: Fourth priority for deterrence, rescue and rehabilitation

Anser	*anser*	Feral goose		4
Anas	*superciliosa*	Grey duck	Parera	4
Anas	*platyrhynchos*	Mallard		4
Vanellus	*Miles*	Spur-winged plover		4

Reptiles - littoral and marine				
Dermochelys	*Coriacea*	Leathery turtle		1
Chelonia	*Mydas*	Green turtle		1
Hoplodactylus	*Maculates*	Common gecko		3
Oligosoma	*Acrinasum*	Fiordland skink		3

Annex 5

Prediction of Oil Movement and Behaviour (Background Information)

Note: Use in conjunction with the Marine Oil Spill Assessment, in particular the real time Oilmap oil spill trajectory model prediction that is available on request from the Oil Spill Duty Officer (04 473 6369). This modelling is more suited to open waters rather than internal waters and harbours.

5.1 Tide

5.1.1 Tidetables – LINZ Website
5.1.2 NZ Nautical Almanac
5.1.3 Secondary Ports Table for Stead Street, Ferry Road, Masons Bay and Milford Sound in relation to Bluff
5.1.4 Secondary Ports Table for Bluff and Westport (covers Stewart Island, Southland and Fiordland coasts)
5.1.5 Tide at South Port, Bluff (real time web page)

5.2 Currents

5.2.1 Surface Circulation and Water Masses
5.2.2 Tidal Stream Atlas – Southland Coast
5.2.3 Tidal Stream Model (NIWA) for Foveaux Strait and Stewart Island
5.2.4 Tidal Currents in Bluff Harbour
5.2.5 Tidal Streams out of Deep Water Basin, Milford Sound.

5.3 Water Temperature

5.3.1 Mean Sea Surface Temperature for August (1993-1997)
5.3.2 Mean Sea Surface Temperature for February (1993-1997)
5.3.3 Sea Surface temperature & Significant Wave height Forecasts

5.4 Weather

5.4.1 45^0 South Weather Services Contact Information (Invercargill-based forecaster)
5.4.2 Met Connect
5.4.3 Victoria University Weather Web Page
5.4.4 Real time marine weather (Coastguard NowCasting Service, Mar VHF Channel 23)
5.4.5 Wind at South Port, Bluff (see 5.1.5 above)
5.4.6 Regional Wind

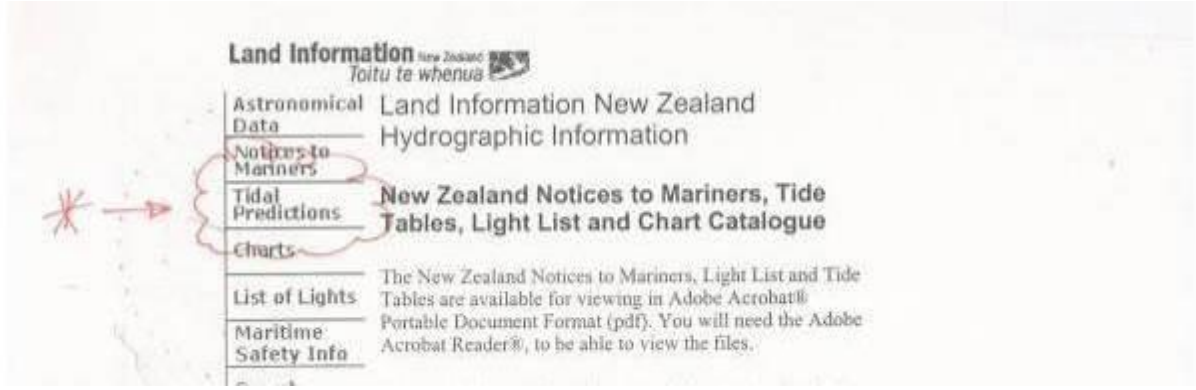
5.5 Water Composition

5.5.1 Low Salinity Layer in Doubtful Sound
5.5.2 Elements of Seawater
5.5.3 Phytoplankton Bloom at Oreti Beach

5.6 Viscosities of various oils in Southland

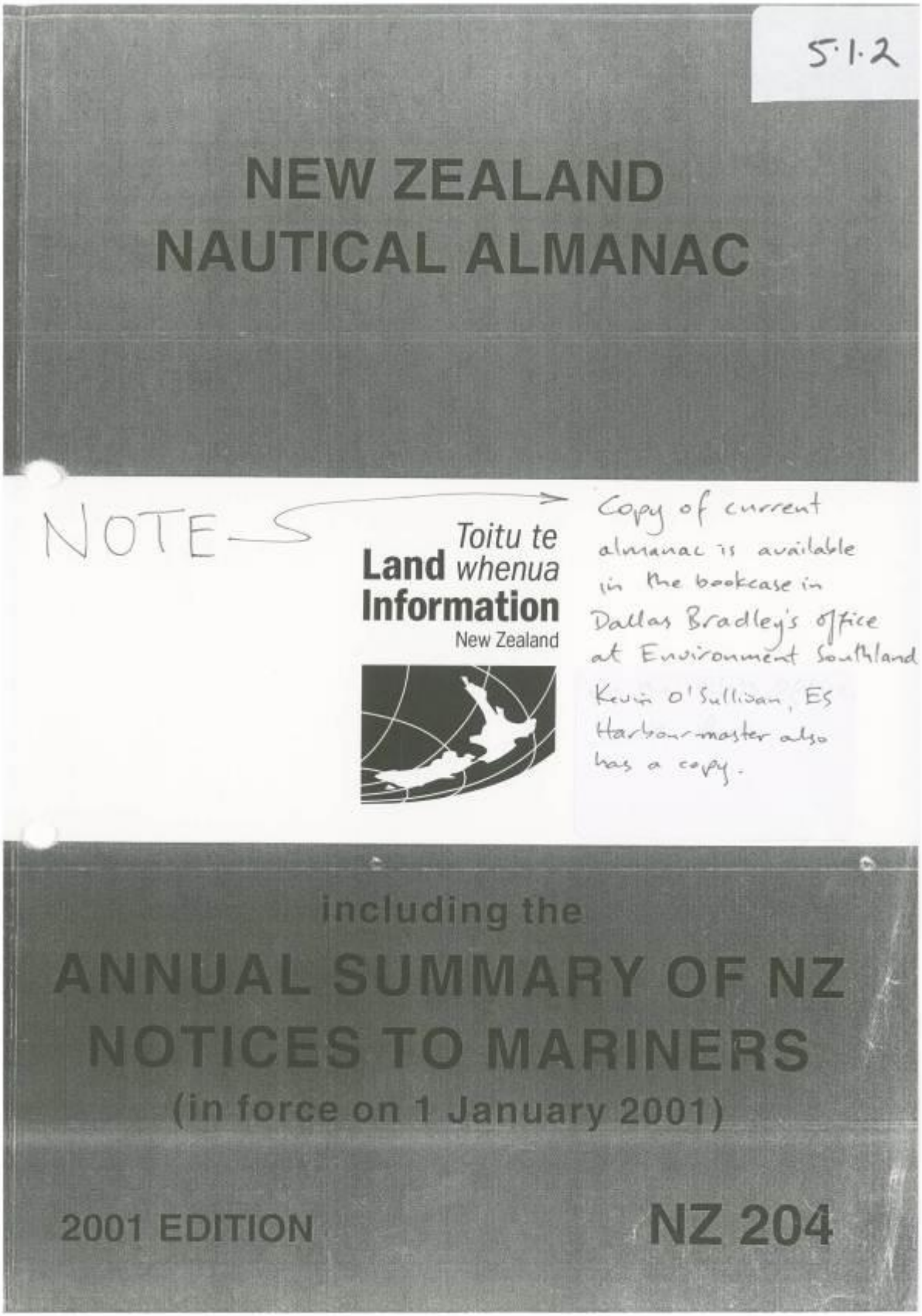
5.1	Tide

Annex 5.1.1

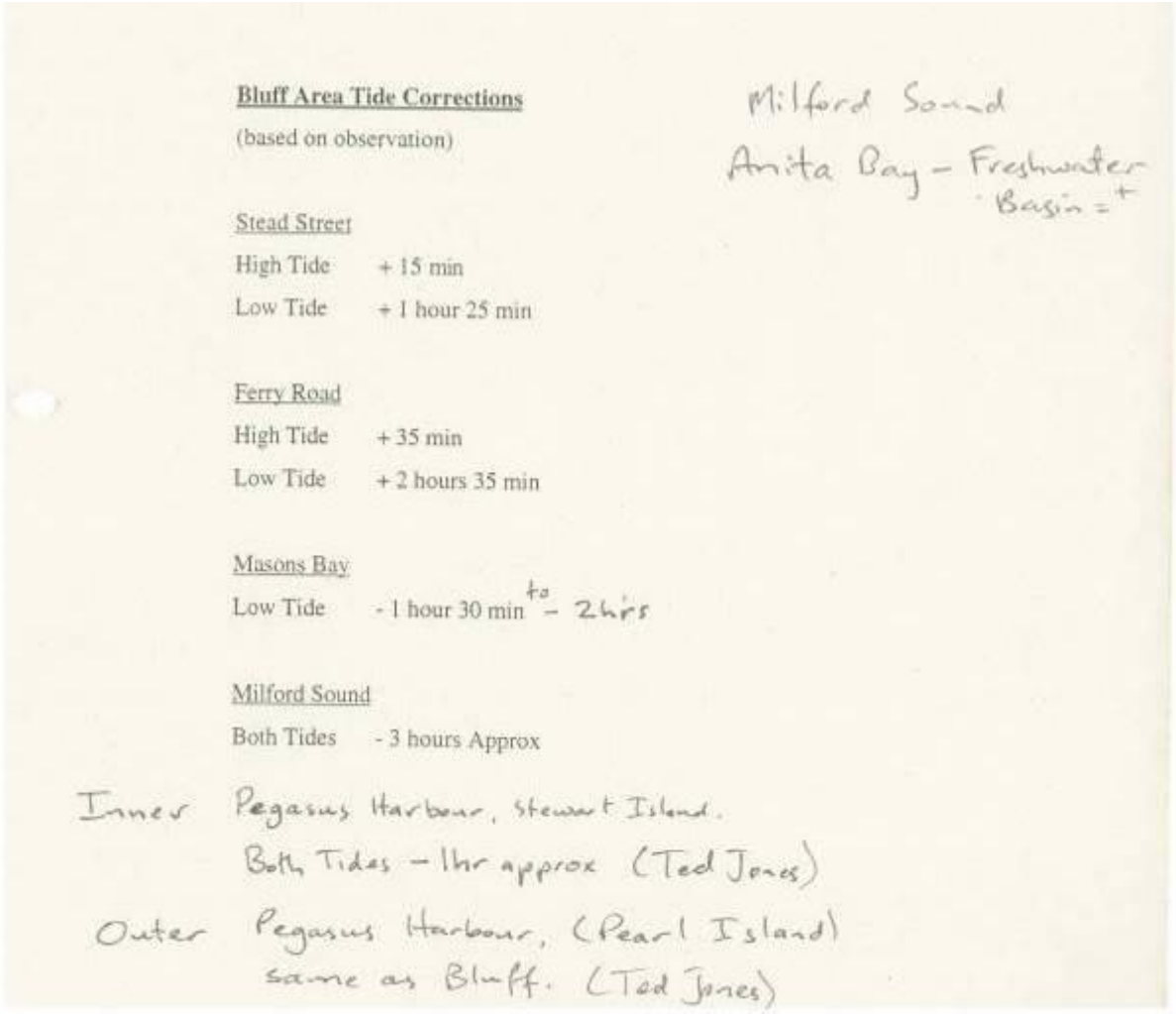


http://www.linz.govt.nz/hydro/tidal-info/tide-tables

Annex 5.1.2



Annex 5.1.3



Bluff Area Tide Corrections

(based on observation)

Milford Sound

Anita Bay – Freshwater Basin = +

Stead Street

High Tide + 15 min

Low Tide + 1 hour 25 min

Ferry Road

High Tide + 35 min

Low Tide + 2 hours 35 min

Masons Bay

Low Tide - 1 hour 30 min to – 2hrs

Milford Sound

Both Tides - 3 hours Approx

Inner Pegasus Harbour, Stewart Island.
Both Tides – 1hr approx (Ted Jones)

Outer Pegasus Harbour, (Pearl Island)
same as Bluff. (Ted Jones)

Dunns Road bridge, Oreti River – High Tide = Bluff -9 minutes but varies with river flow and size of tide.

◀

Secondary Port Table for: BLUFF.

Click on the browser "Back" button to return from the pdf Port Table

Place	Lat. S. ° ′	Long E. ° ′	Time Differences M.H.W	M.L.W	Mean Spring, Neap And Sea Level Heights M.H.W.S	M.H.W.N	M.L.W.N	M.L.W.S	M.S.L
BLUFF	**46 36**	**168 21**	**h.m.**	**h.m.**	**2.7**	**2.3**	**0.9**	**0.6**	**1.61**
Kawakaputa Bay	46 23	167 49	-0121	-0117	2.7	2.3	0.9	0.6	1.6
Port Craig	46 37	168 22	-0139	-0140	3.0	2.6	1.3	0.8	1.9
Nugget Point	46 27	169 49	+0100	+0100	2.3	2.1	0.8	0.6	1.5
Waipapa Point	46 39	168 51	+0017	+0016	2.7	2.5	0.9	0.6	1.7
Waikawa Harbour	46 39	169 10	+0017	+0021	2.3	2.0	0.9	0.6	1.5
New River Entrance	46 32	168 15	-0022	-0022	2.8	2.5	0.7	0.4	1.6
Colac Bay	46 22	167 54	-0044	-0039	2.4	2.0	0.7	0.3	1.3
Ruapuke Island	46 47	168 30	⊘	⊘	2.6	2.3	1.0	0.7	1.7
Stewart Island									
Yankee River	46 41	167 53	-0046	-0055	2.2	2.0	0.9	0.7	1.4
Oban	46 54	168 08	-0005	-0002	2.3	2.1	0.9	0.7	1.5
Paterson Inlet	46 54	168 07	-0030	-0030	2.6	2.3	0.9	0.6	1.6
Port Adventure	47 05	168 11	-0017	-0017	2.8	2.5	1.1	0.8	1.8
Easy Harbour	47 09	167 34	-0207	-0207	2.5	2.2	1.0	0.6	1.6
Flour Cask Bay	47 17	167 29	-0136	-0136	2.8	2.4	1.1	0.7	1.7
Small Craft Retreat	47 15	167 39	-0108	-0108	2.8	2.5	1.1	0.7	1.8
Ernest Island	47 58	167 41	-0139	-0138	2.1	1.8	0.7	0.3	1.2
South Offshore Islands									
*Campbell Island (Perseverance Harbour)	52 33	169 13	+0013	+0020	1.2	1.0	0.4	0.2	0.7
Auckland Island (Carnley Harbour)	50 52	165 05	-0036	-0043	1.1	0.8	0.3	0.1	0.6
*Antipodes Island	49 50	178 50	+0210	⊘	1.8	⊘	⊘	⊘	1.1
*Snares Island	48 01	166 35	⊘	⊘	⊘	⊘	⊘	⊘	⊘

*Data Approximate ⊘ No Data

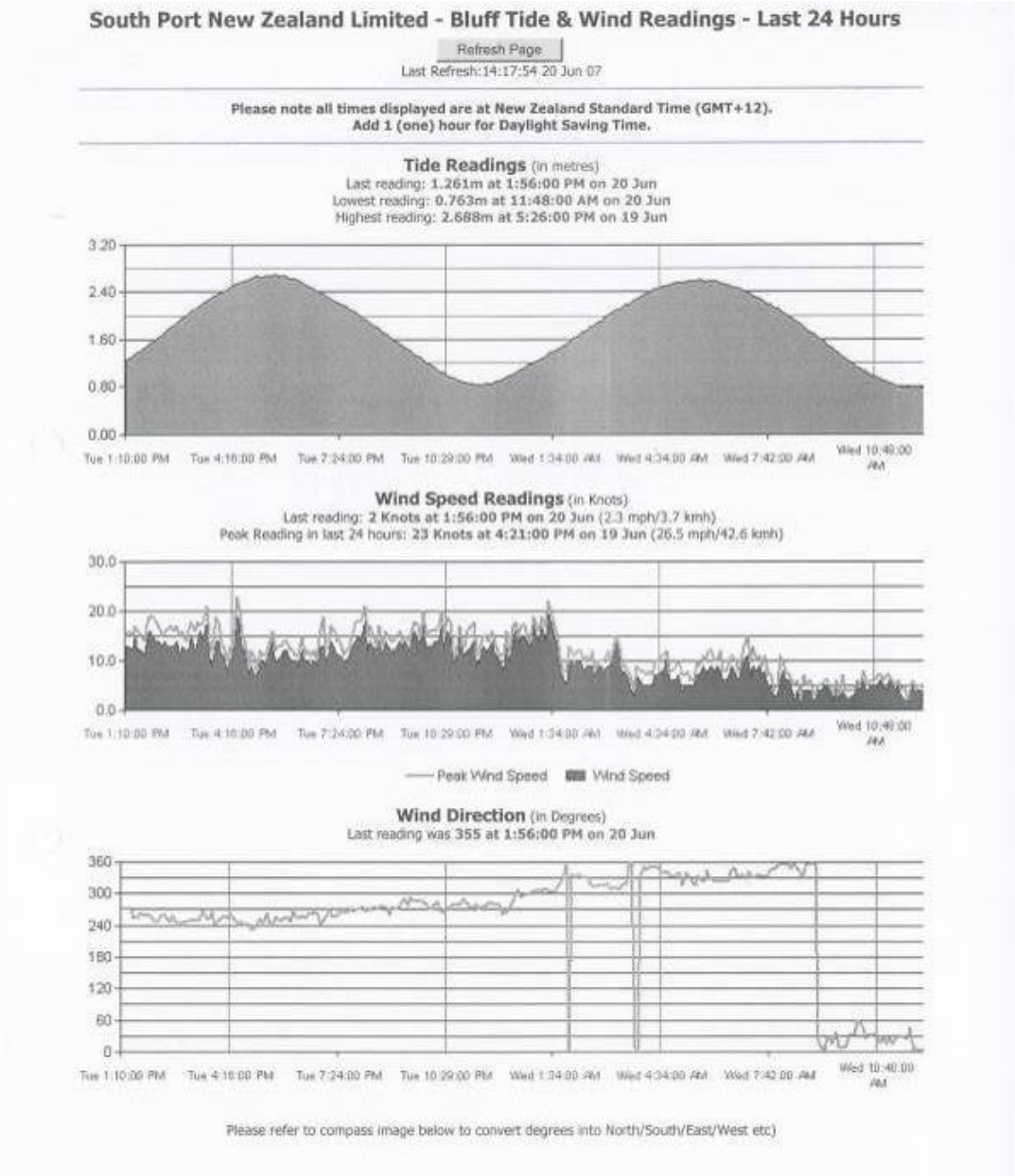
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Secondary Port Table for: WESTPORT.

Click on the browser "Back" button to return from the pdf Port Table

Place	Lat. S. ° ′	Long E. ° ′	Time Differences M.H.W	M.L.W	Mean Spring, Neap And Sea Level Heights M.H.W.S	M.H.W.N	M.L.W.N	M.L.W.S	M.S.L
WESTPORT	**41 45**	**171 36**	**h.m.**	**h.m.**	**3.2**	**2.6**	**0.9**	**0.3**	**1.76**
South Island, West Coast									
Fiordland Sounds									
*Preservation Inlet	46 04	166 41	+0130	+0130	2.3	1.8	0.5	0.2	1.2
Small Craft Harbour	45 58	166 40	+0105	+0058	2.4	1.9	0.8	0.3	1.3
Sealers Bay	46 03	166 33	+0046	+0052	2.4	1.9	0.8	0.3	1.4
*Fishing Bay	46 06	166 39	+0100	+0100	2.2	1.8	0.8	0.3	1.3
Milford Sound									
Anita Bay	44 35	167 48	+0030	+0030	2.4	2.0	0.8	0.4	1.4
George Sound	44 52	167 22	+0034	+0034	2.5	2.1	0.9	0.5	1.5
Charles Sound	45 05	167 06	+0046	+0042	3.1	2.5	1.1	0.6	1.8
Doubtful Sound									
Blanket Bay	45 18	166 59	+0117	+0108	2.4	2.0	0.9	0.4	1.4
Deep Cove	45 28	167 09	+0112	+0110	2.3	1.8	0.8	0.3	1.3
Breaksea Sound									
Gilbert Islands	45 36	166 41	+0050	+0050	2.2	1.8	0.7	0.3	1.3
Dusky Sound									
Front Island	45 42	166 44	+0045	+0045	2.2	1.7	0.6	0.2	1.2
Many Islands	45 46	166 31	+0049	+0050	2.6	2.2	0.9	0.5	1.6
*Bligh Sound	44 53	167 32	+0100	+0100	2.1	1.8	0.8	0.3	1.2
Westland									
*Jackson Bay	43 59	168 37	+0040	+0040	2.1	1.8	0.6	0.3	1.2
*Haast River Entrance	43 50	169 03	+0030	+0030	2.2	1.8	0.6	0.2	1.2
*Bruce Bay	43 35	169 36	+0020	+0020	2.2	1.8	0.6	0.2	1.2
*Okarito	43 13	170 11	+0015	+0015	2.3	1.8	0.6	0.2	1.2
*Hokitika River Bar	42 43	170 58	+0010	+0010	2.3	1.8	0.6	0.2	1.2
Greymouth	42 26	171 13	+0005	+0005	3.4	2.7	1.5	0.7	2.0
Buller Coast									
*Karamea River Entrance	41 15	172 06	-0035	⊘	⊘	⊘	⊘	⊘	⊘
*Whanganui Inlet	40 35	172 35	-0105	-0105	2.9	2.3	0.8	0.0	1.4

*Data Approximate ⊘ No Data



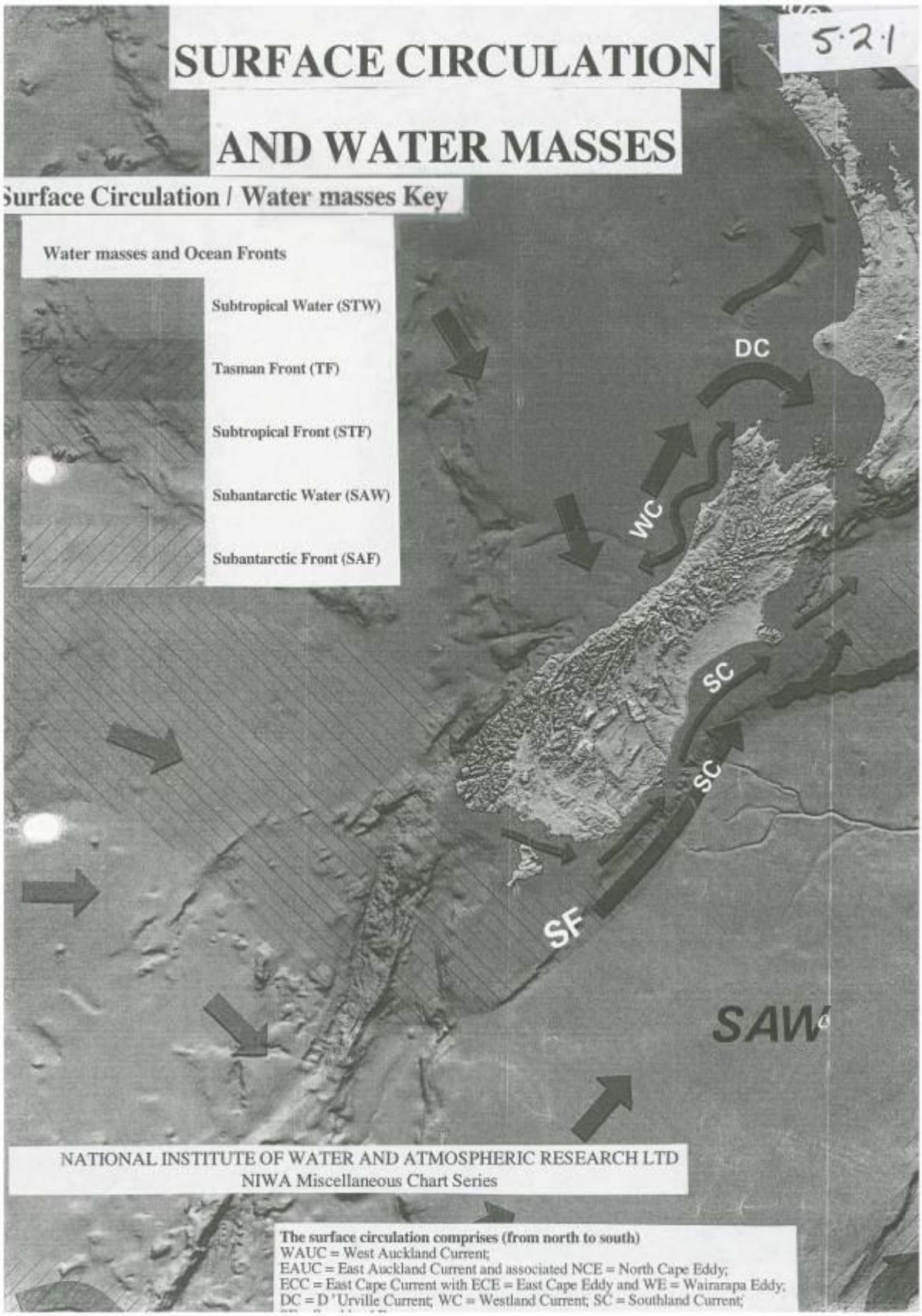
http://www.southport.co.nz/facilities-and-services/marine-services/wind-and-tide-conditions

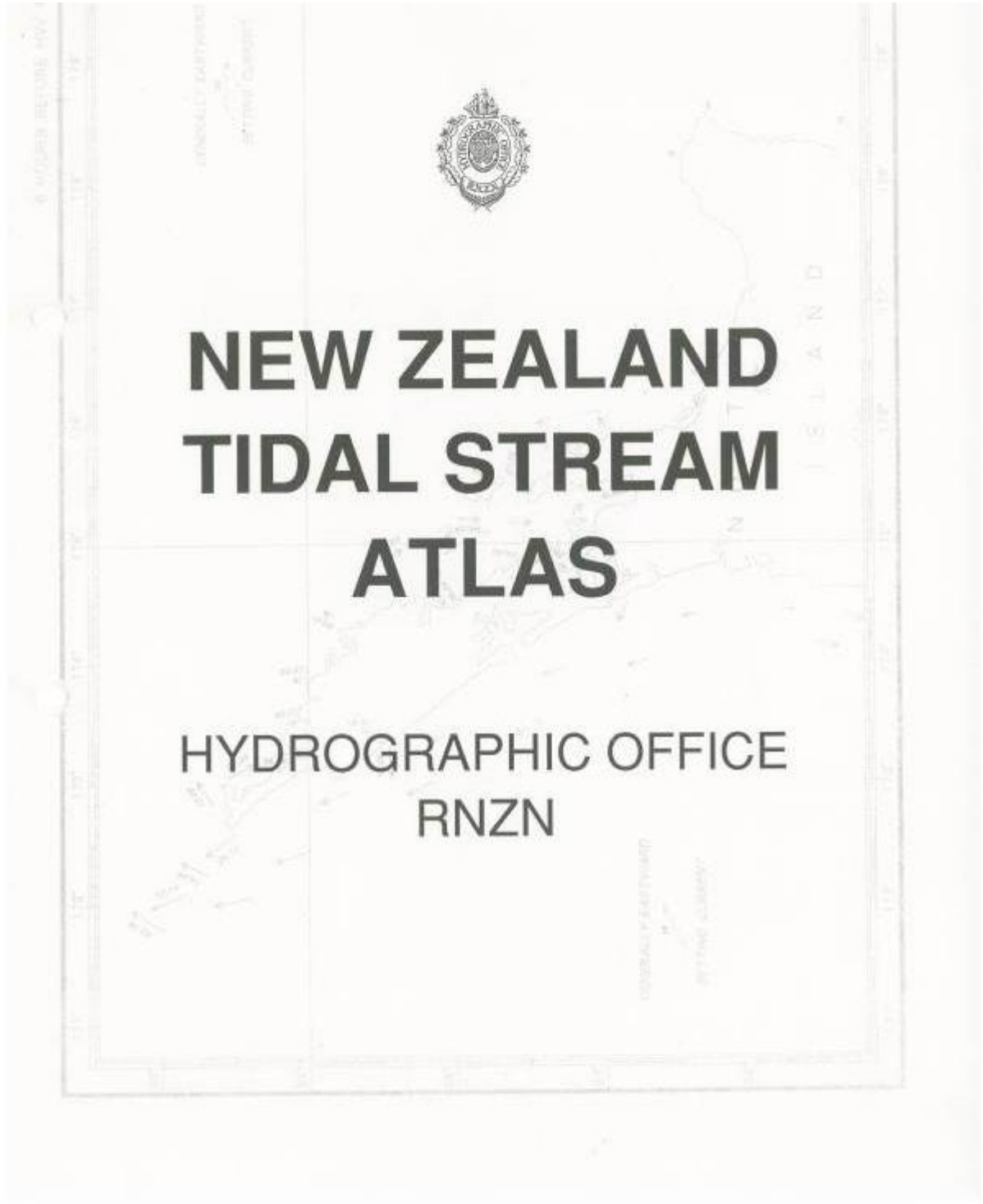
Access is also available to South Ports real time wind, sea level, water temperature and current data network http://neon.niwa.co.nz/logon.aspx?logoff=1 (log on and password protected) via the Regional Harbourmaster or his deputy.

5.2 Currents

NB:
1 knot is approximately equal to 0.5 metres/sec
1 metre/sec is approximately equal to 2 knots
1 knot = 1 nautical mile/hr
= 6080 ft/hr

1 km/hr = 0.28 m/sec = 0.91 ft/sec = 32808 ft/hr = 0.54 knots
km/hr divided by 1.853 = Knots


SURFACE CIRCULATION
AND WATER MASSES
5.2.1
Surface Circulation / Water masses Key
Water masses and Ocean Fronts
Subtropical Water (STW)
Tasman Front (TF)
Subtropical Front (STF)
Subantarctic Water (SAW)
Subantarctic Front (SAF)
DC
WC
SC
SC
SF
SAW
NATIONAL INSTITUTE OF WATER AND ATMOSPHERIC RESEARCH LTD
NIWA Miscellaneous Chart Series
The surface circulation comprises (from north to south)
WAUC = West Auckland Current;
EAUC = East Auckland Current and associated NCE = North Cape Eddy;
ECC = East Cape Current with ECE = East Cape Eddy and WE = Wairarapa Eddy;
DC = D 'Urville Current; WC = Westland Current; SC = Southland Current;


NEW ZEALAND
TIDAL STREAM
ATLAS
HYDROGRAPHIC OFFICE
RNZN

Tidal Stream Atlas
New Zealand

Published by the Hydrographic Office, Royal New Zealand Navy, under the Superintendence of Commander W.D. Frisken, RN, Hydrographer. In association with GP Publications Ltd, Wellington

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The Charts

This atlas contains 3 sets of 13 charts showing tidal streams at hourly intervals commencing 6 hours before HW and ending 6 hours after HW, based on the times of HW at Auckland, Wellington and Bluff respectively.

The times of the HW should be obtained from the New Zealand Nautical Almanac, published by the Hydrographic Office RNZN.

On the charts the directions of the tidal streams are shown by arrows which are graded in 4 different lengths to indicate the approximate strength of the tidal stream as follows:

→ less 0.25 knot
→ 0.25 to 0.75 knot
⟶ 0.75 to 1.5 knot
⟶ over 1.5 knot

The figures against the arrows give a mean spring and neap rate in tenths of a knot, thus 16,07 indicates a mean spring rate of 1.6 knots and a mean neap rate of 0.7 knots. Where one figure only is given, such as 04, this indicates an average rate of 0.4 knots.

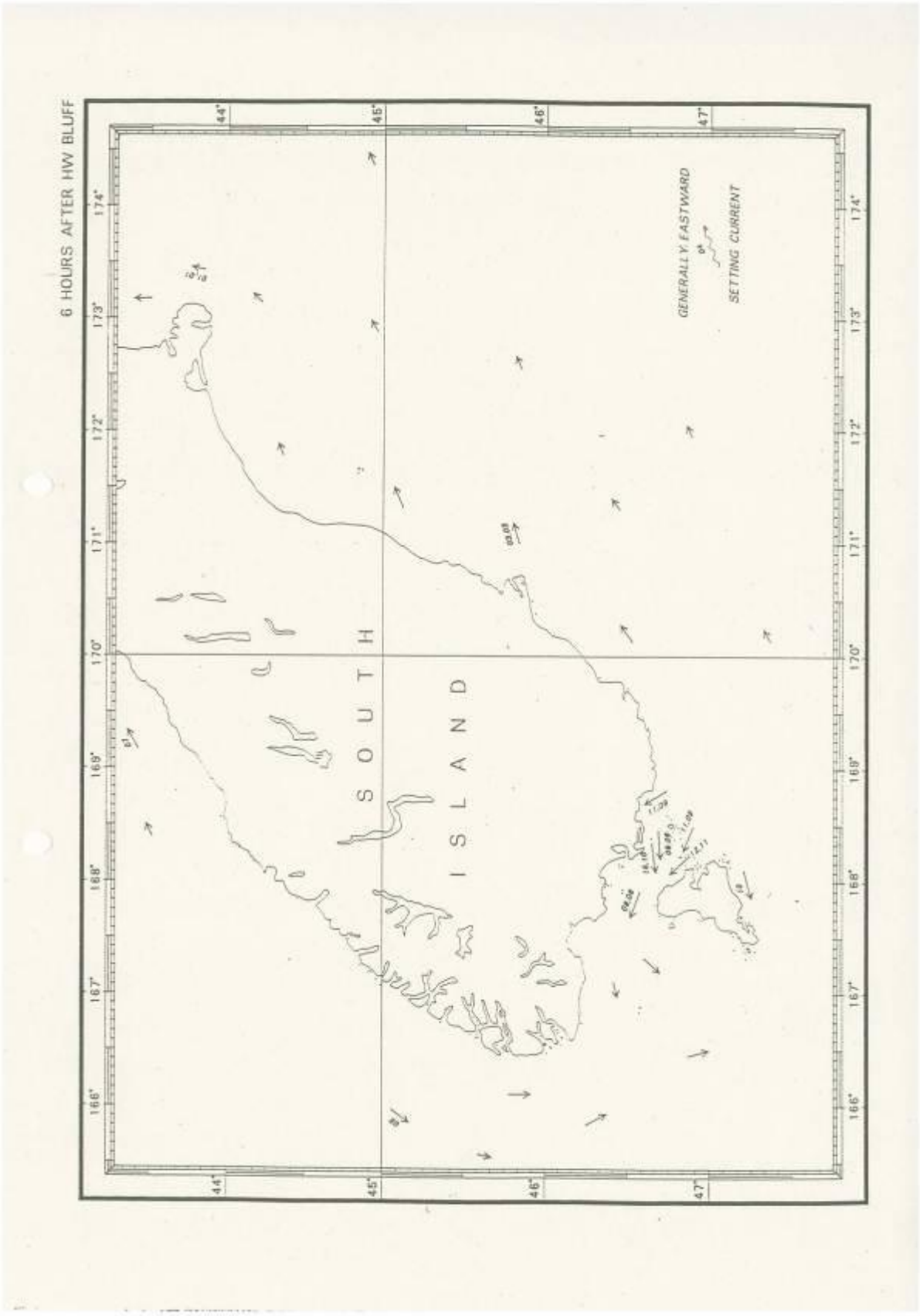
Offshore currents are shown by a wavy arrow, together with the average rate in tenths of a knot. Nearshore currents are incorporated in the tidal stream arrows.

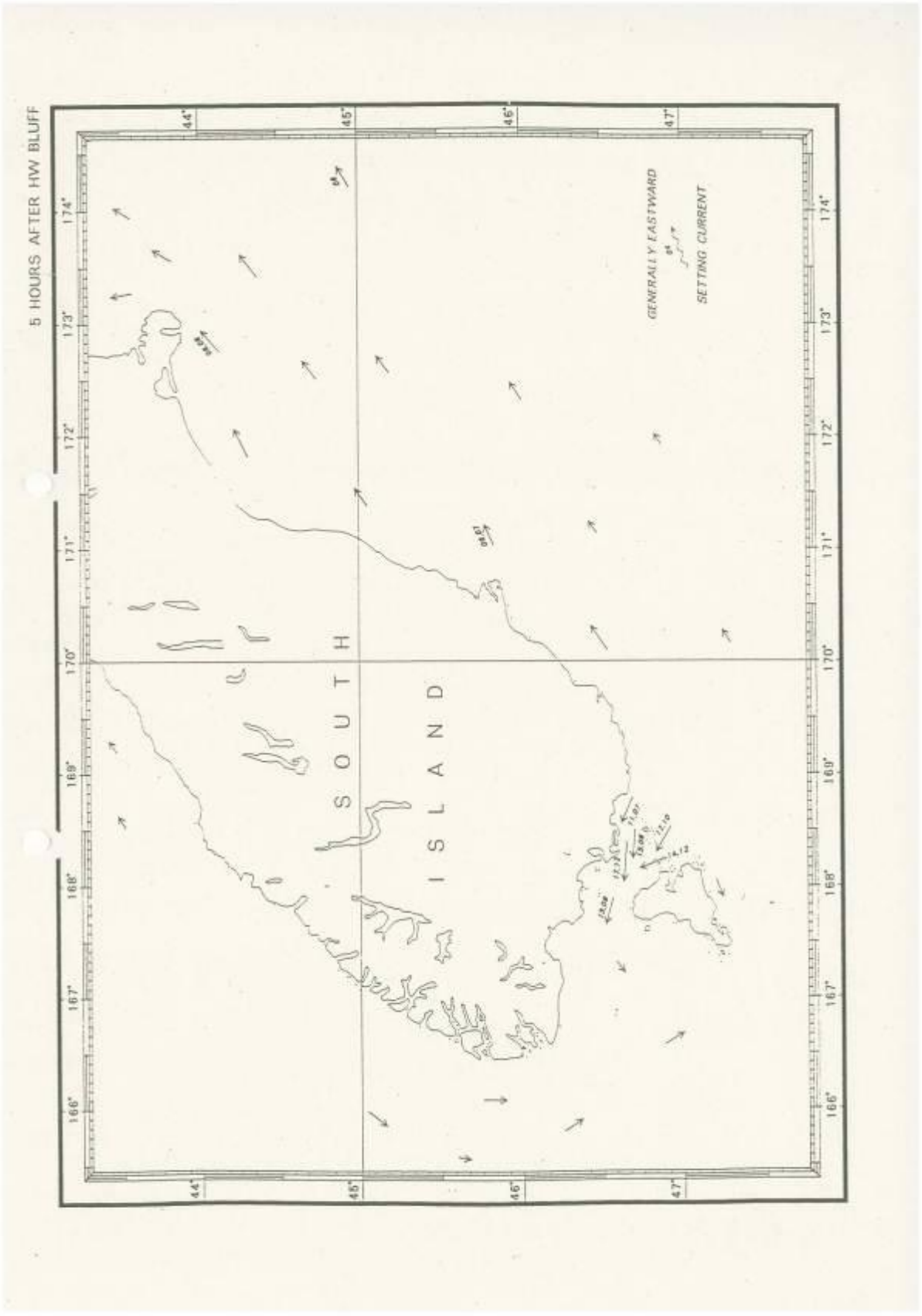
Tidal streams and currents in New Zealand waters are much influenced by wind conditions and both strength and direction may vary appreciably.

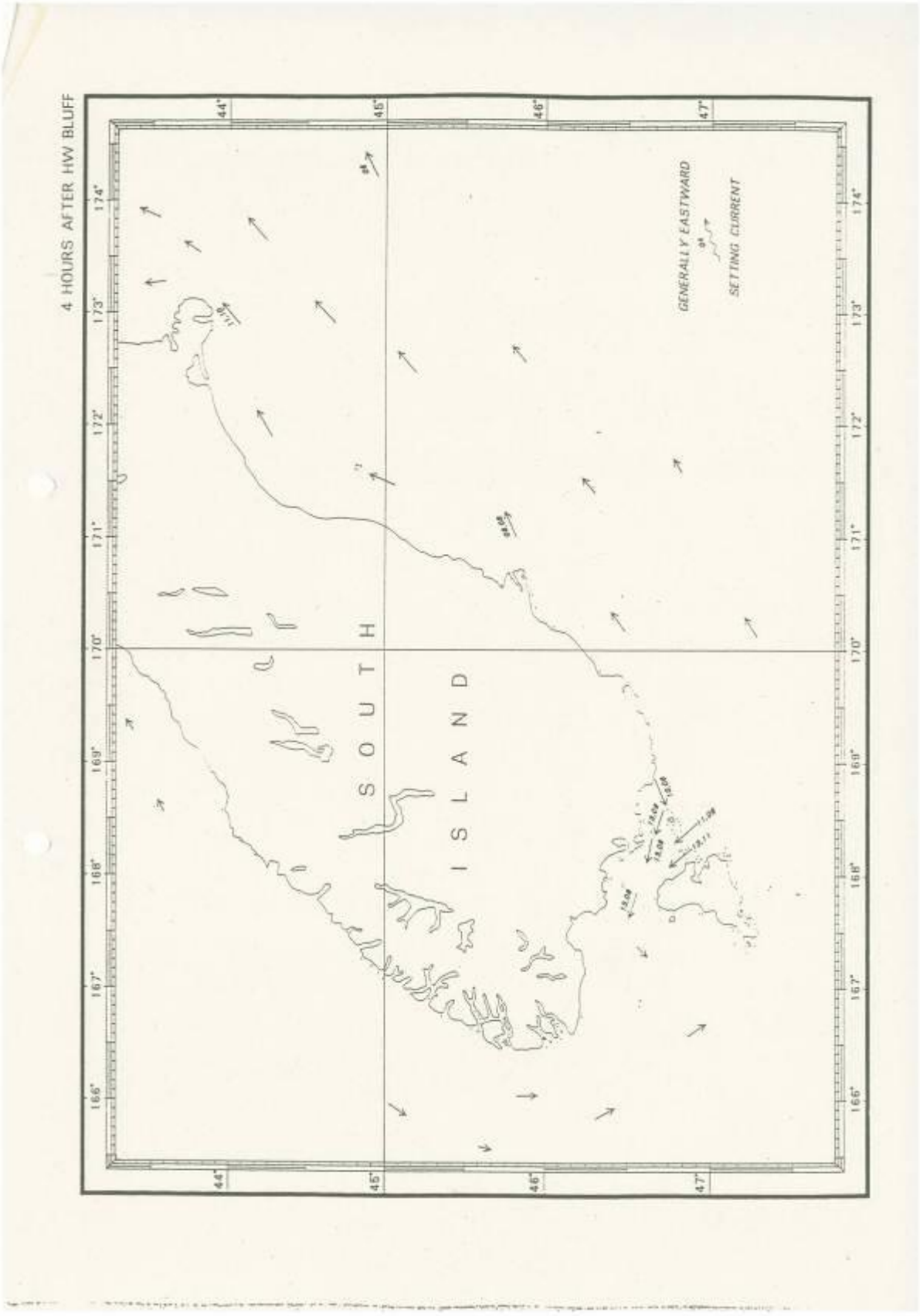
Local tide rips and eddies are not shown. For details see official RNZN Charts and Admiralty Sailing Directions.

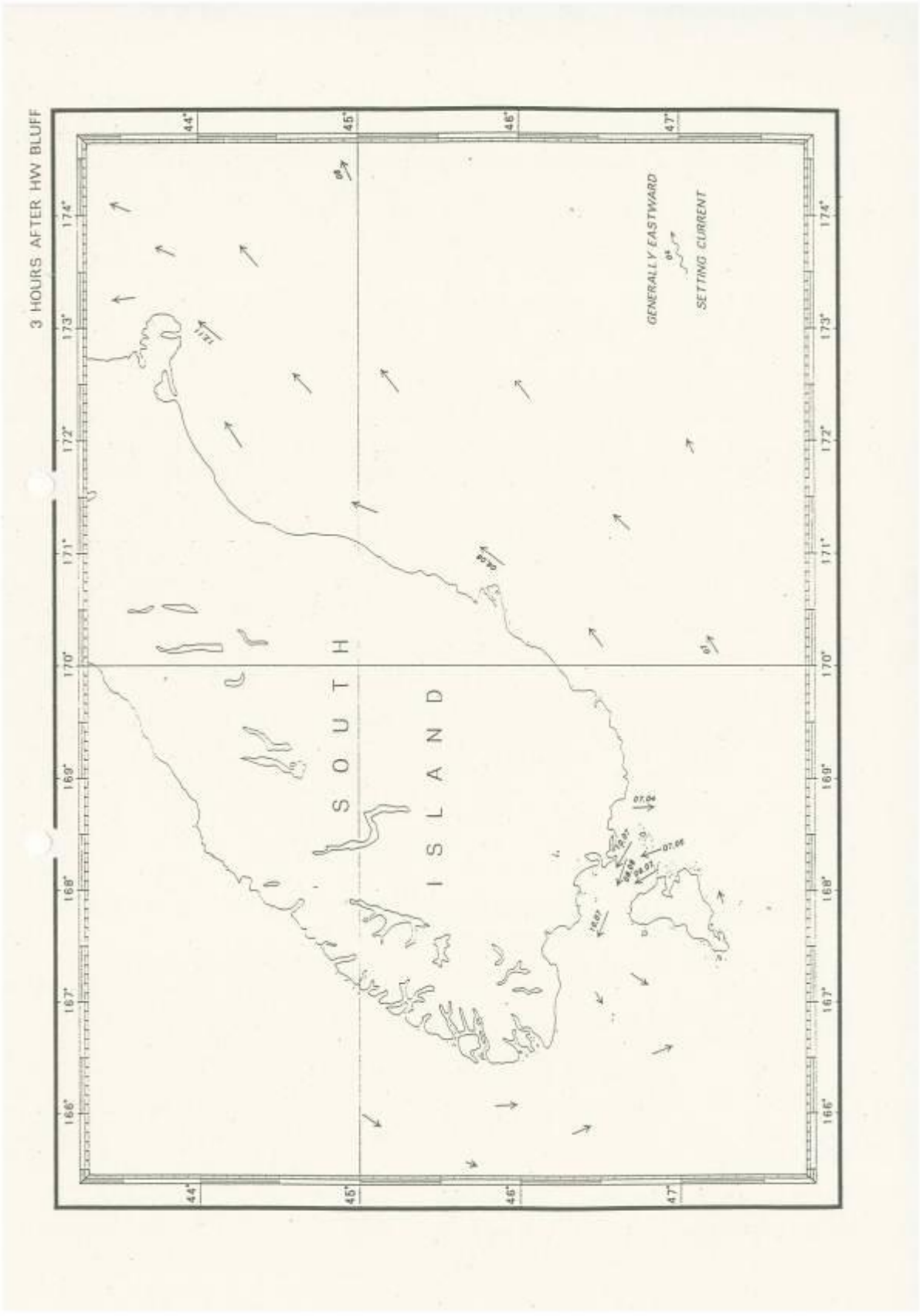
In the interests of improving the accuracy of this publication for use during search and rescue operations and to mobilize pollution control equipment at the most appropriate location in the event of an oilspill or other pollutant accident, additional information is always welcome. Information or queries should be sent to:

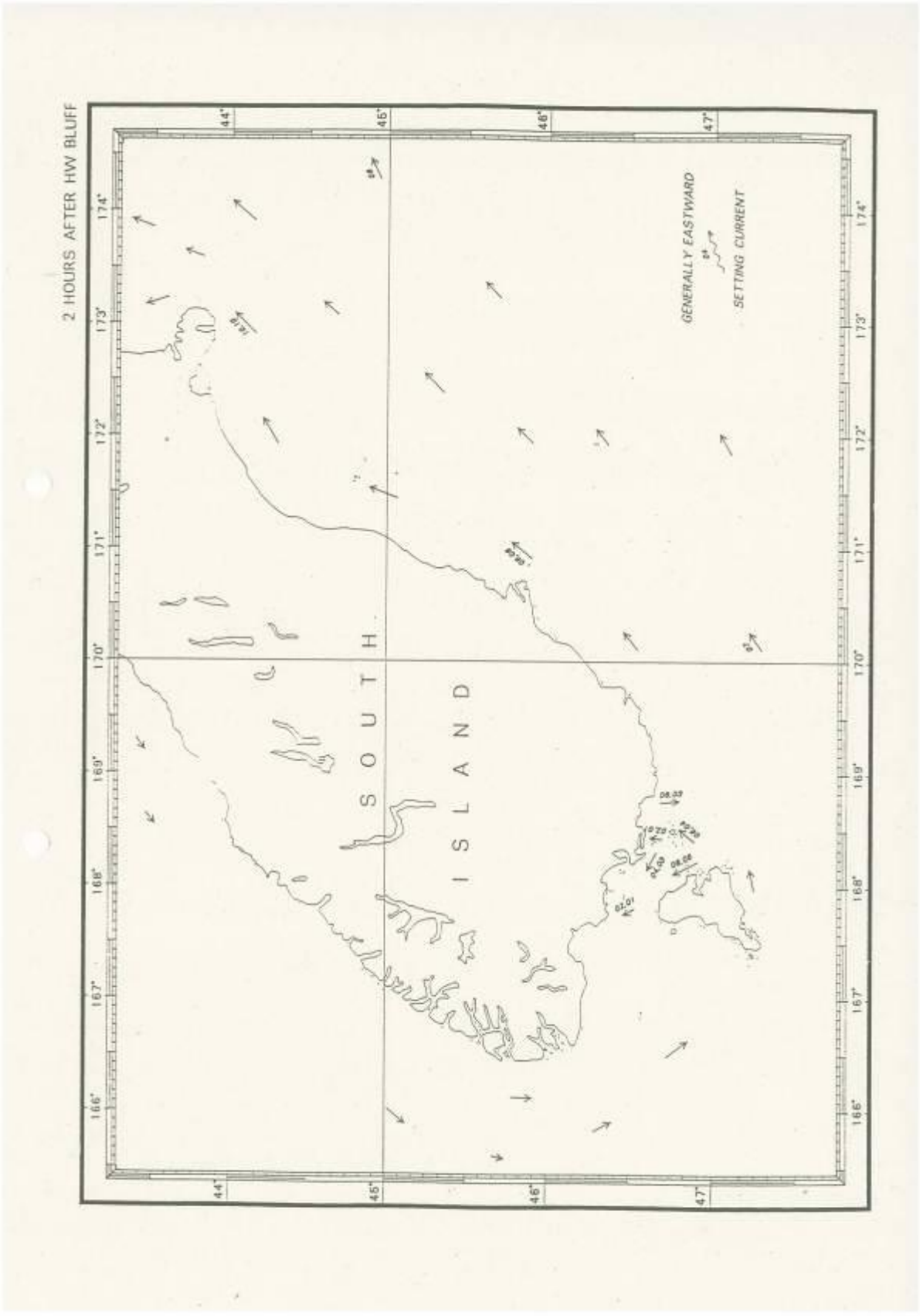
Hydrographer RNZN
19 Burns Avenue
PO Box 33-341
Takapuna
Auckland 9
Tel (09) 489 7227

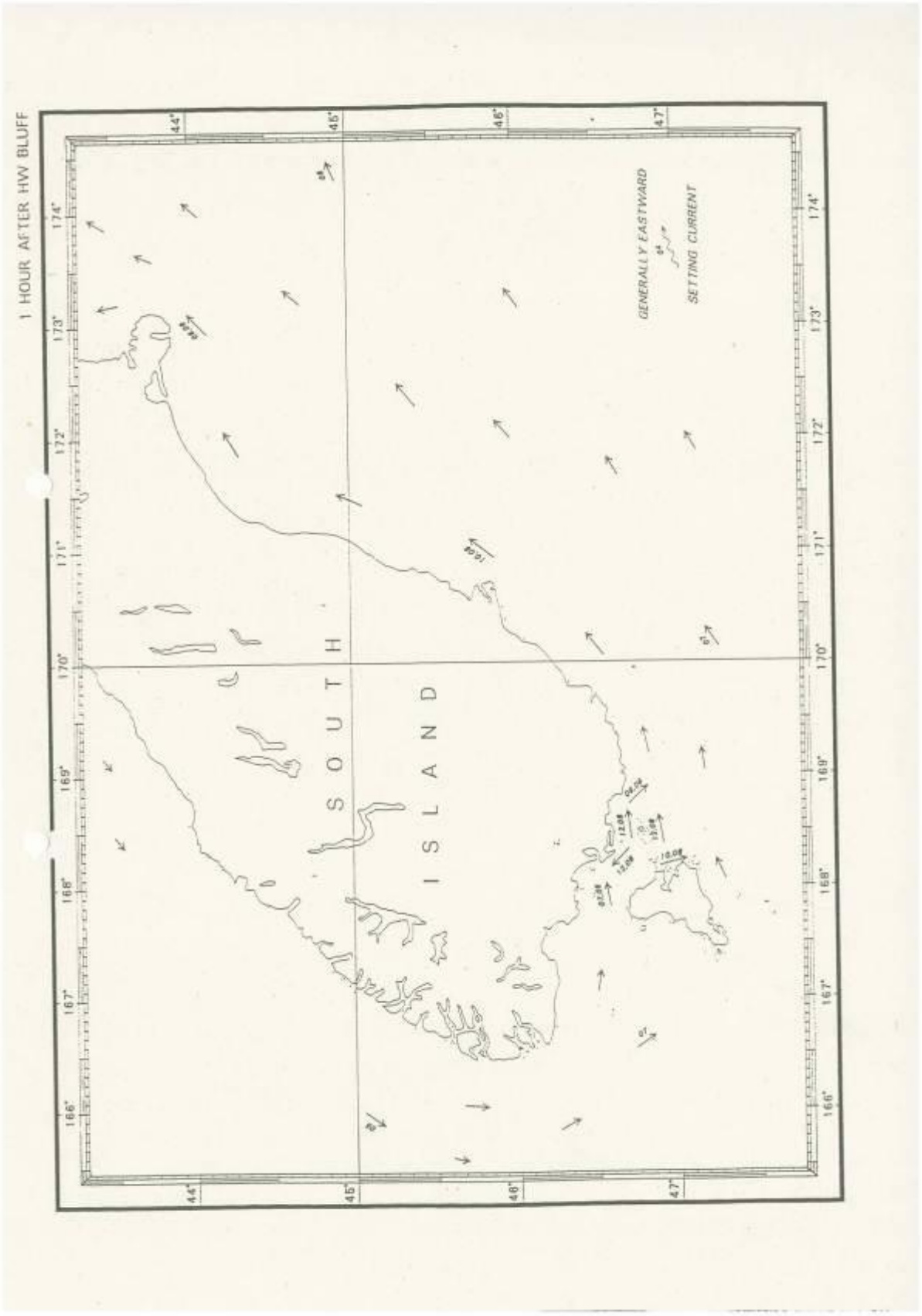

6 HOURS AFTER HW BLUFF
SOUTH ISLAND
GENERALLY EASTWARD SETTING CURRENT
44°
45°
46°
47°
166°
167°
168°
169°
170°
171°
172°
173°
174°

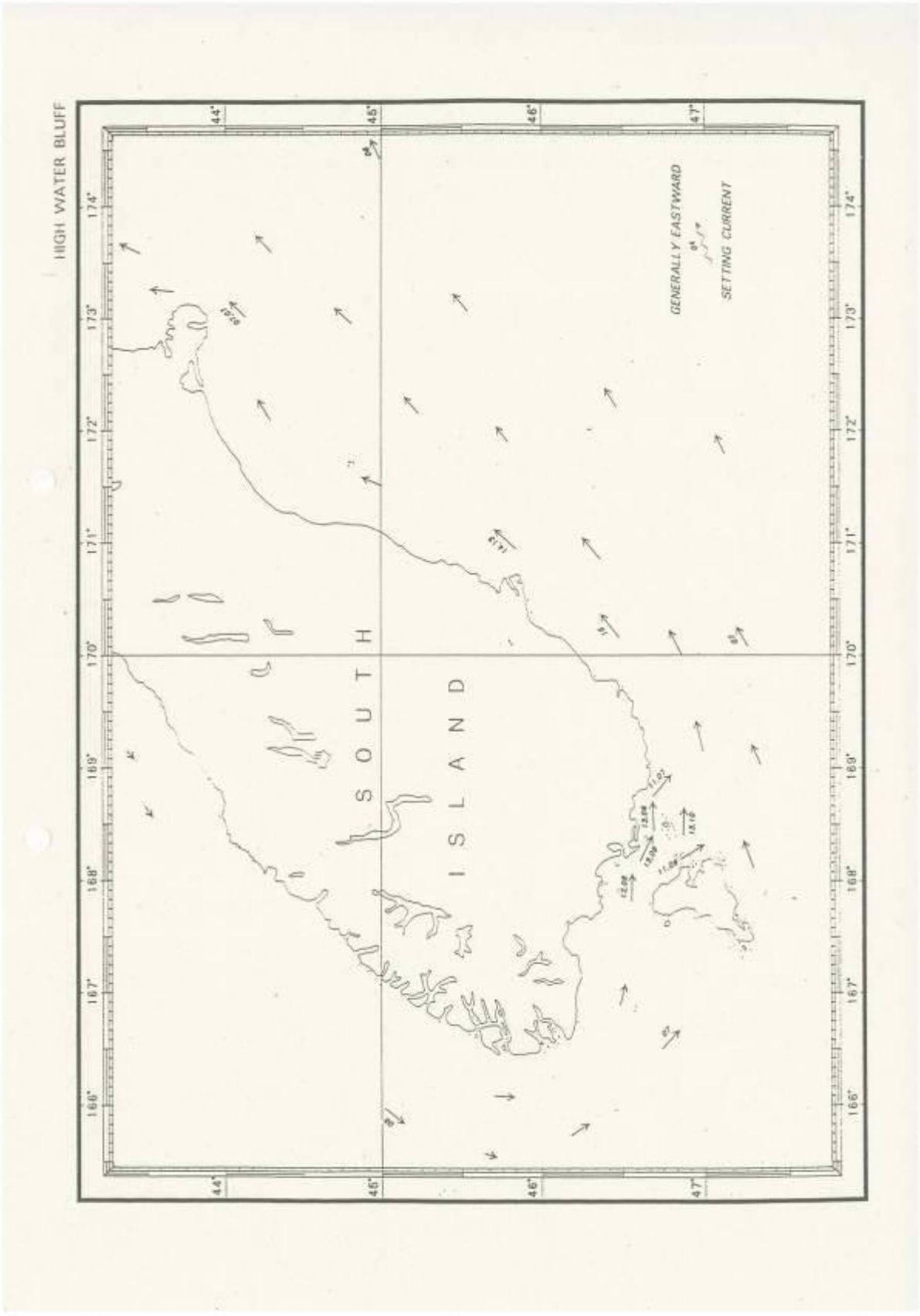

5 HOURS AFTER HW BLUFF
GENERALLY EASTWARD
SETTING CURRENT
SOUTH
ISLAND
44°
45°
46°
47°
166°
167°
168°
169°
170°
171°
172°
173°
174°

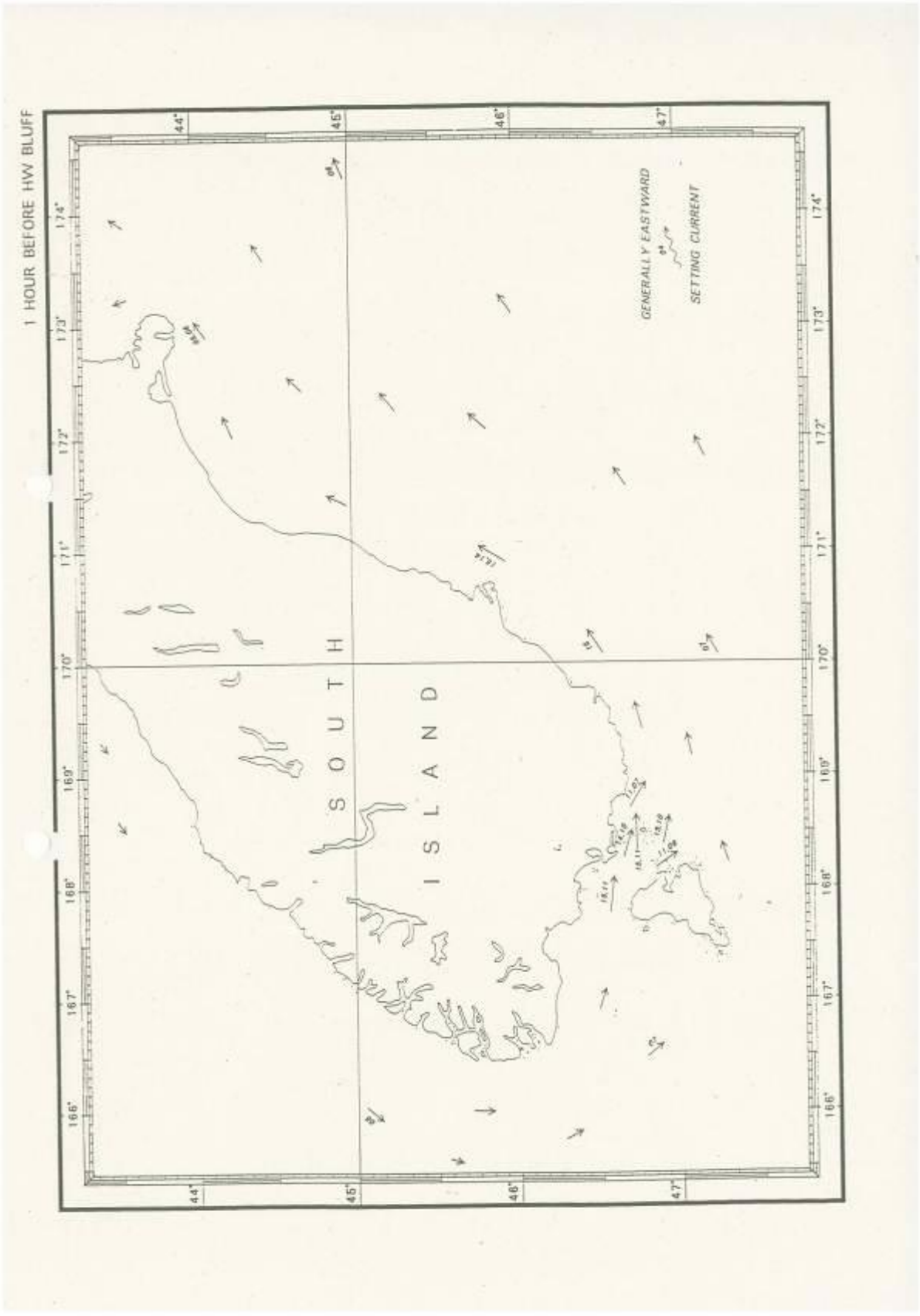

4 HOURS AFTER HW BLUFF
SOUTH ISLAND
GENERALLY EASTWARD SETTING CURRENT
166°
167°
168°
169°
170°
171°
172°
173°
174°
44°
45°
46°
47°

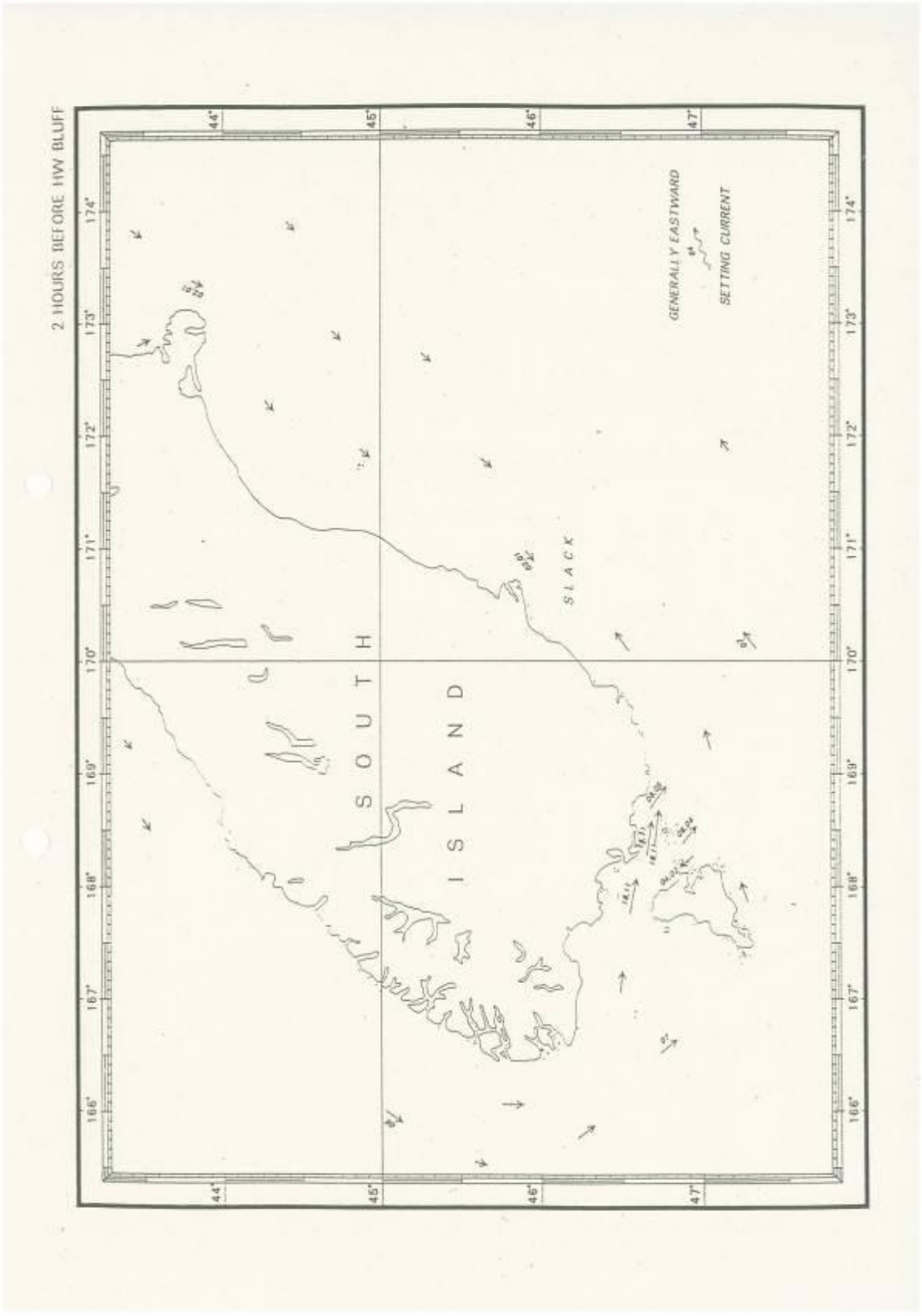

3 HOURS AFTER HW BLUFF
SOUTH
ISLAND
GENERALLY EASTWARD
SETTING CURRENT

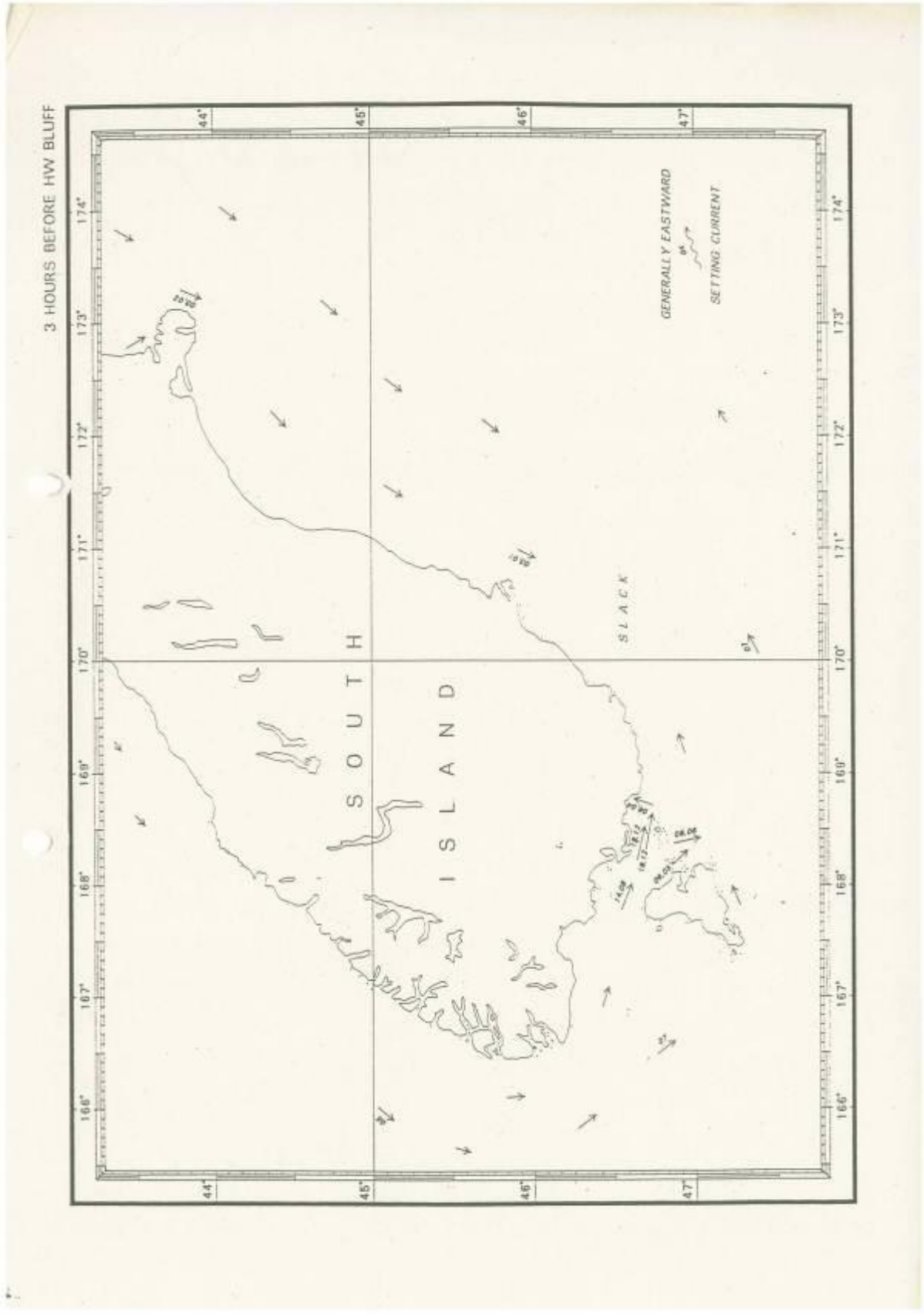

2 HOURS AFTER HW BLUFF
SOUTH ISLAND
GENERALLY EASTWARD SETTING CURRENT
44°
45°
46°
47°
166°
167°
168°
169°
170°
171°
172°
173°
174°

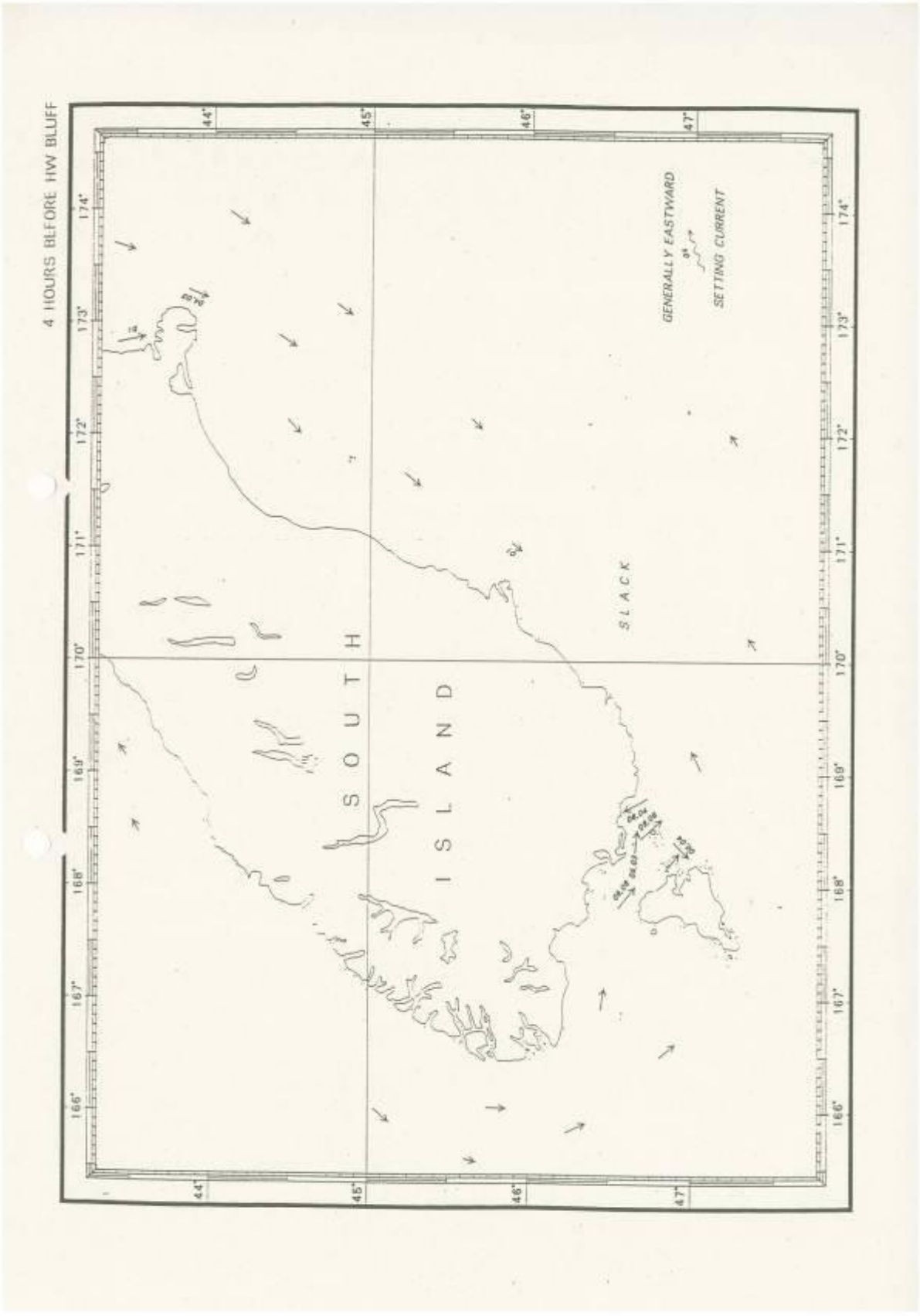

1 HOUR AFTER HW BLUFF
GENERALLY EASTWARD
SETTING CURRENT
SOUTH
ISLAND

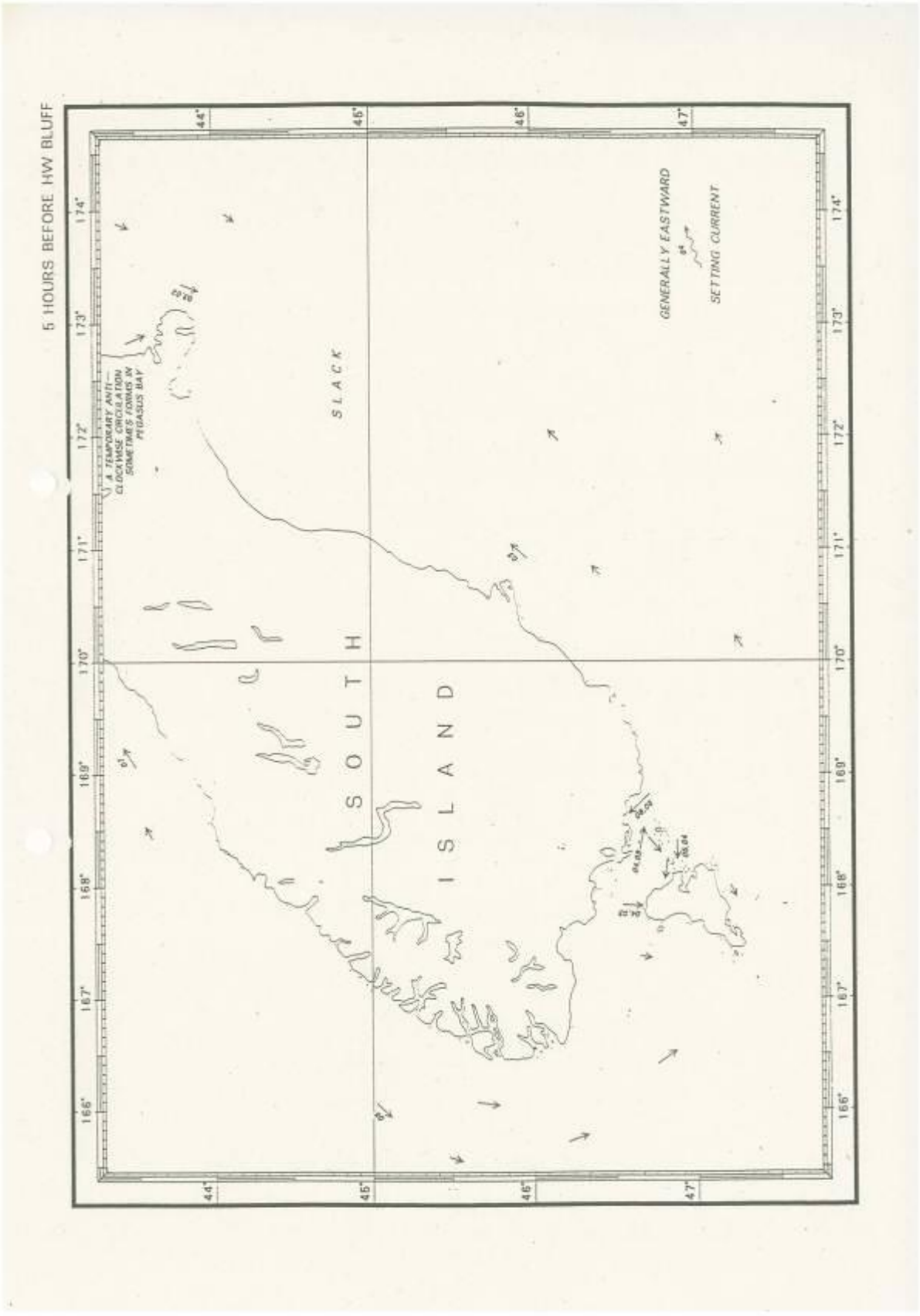

HIGH WATER BLUFF
SOUTH
ISLAND
GENERALLY EASTWARD
SETTING CURRENT
44°
45°
46°
47°
166°
167°
168°
169°
170°
171°
172°
173°
174°

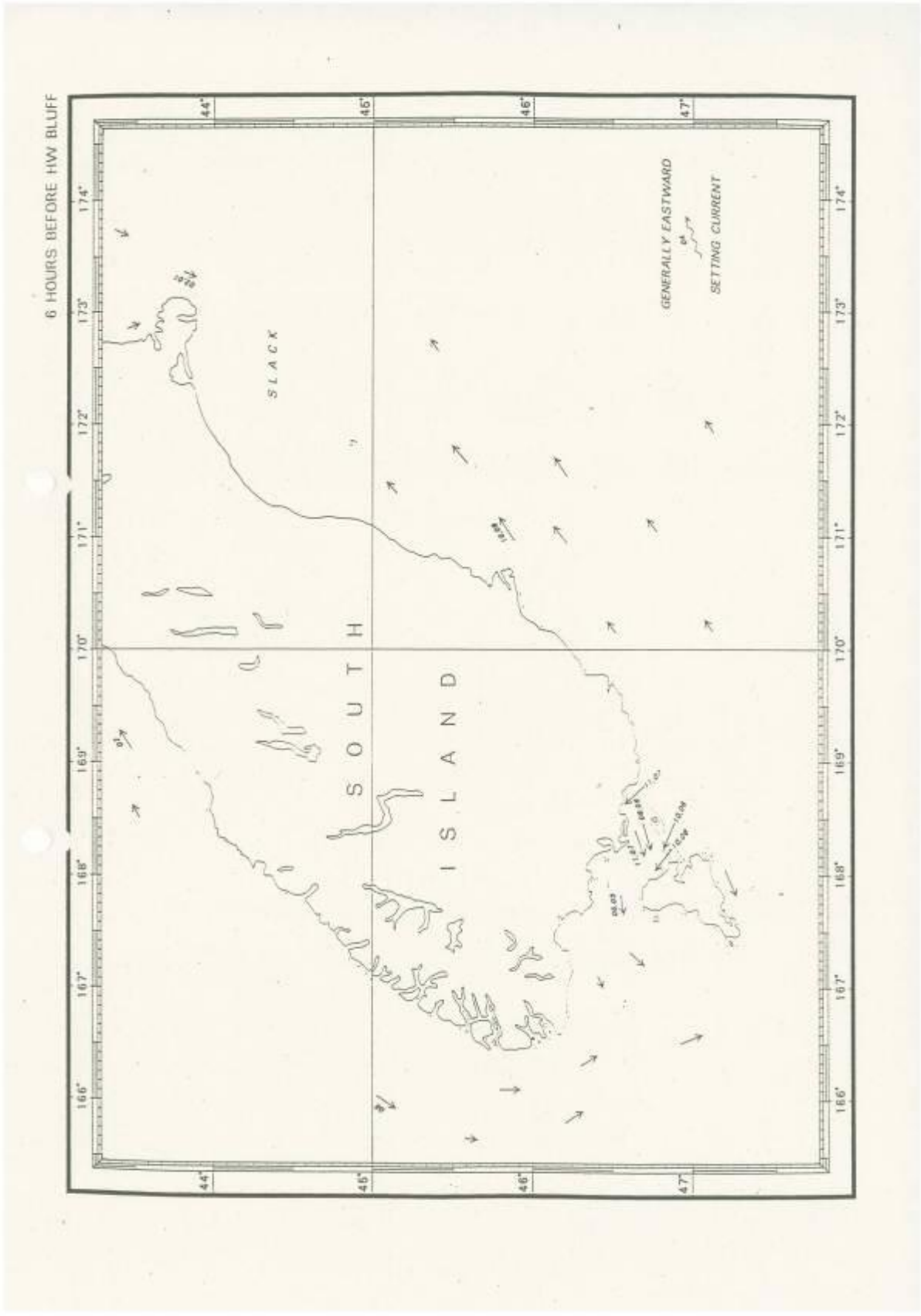

1 HOUR BEFORE HW BLUFF
GENERALLY EASTWARD SETTING CURRENT
SOUTH ISLAND
44°
45°
46°
47°
166°
167°
168°
169°
170°
171°
172°
173°
174°


2 HOURS BEFORE HW BLUFF
GENERALLY EASTWARD
SETTING CURRENT
SLACK
SOUTH
ISLAND
44°
45°
46°
47°
166°
167°
168°
169°
170°
171°
172°
173°
174°

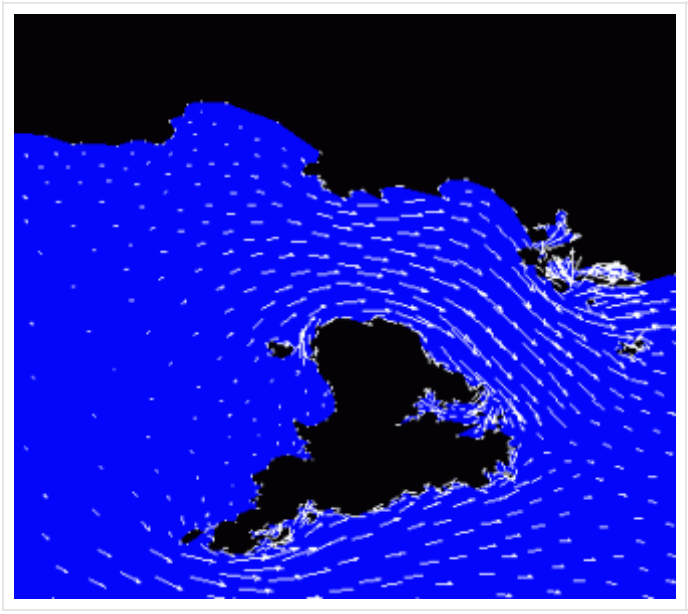

3 HOURS BEFORE HW BLUFF
GENERALLY EASTWARD
SETTING CURRENT
SLACK
SOUTH
ISLAND
44°
45°
46°
47°
166°
167°
168°
169°
170°
171°
172°
173°
174°


4 HOURS BEFORE HW BLUFF
SOUTH ISLAND
SLACK
GENERALLY EASTWARD
SETTING CURRENT
44°
45°
46°
47°
166°
167°
168°
169°
170°
171°
172°
173°
174°


5 HOURS BEFORE HW BLUFF
SLACK
GENERALLY EASTWARD
SETTING CURRENT
SOUTH
ISLAND


6 HOURS BEFORE HW BLUFF
SLACK
GENERALLY EASTWARD
SETTING CURRENT
SOUTH
ISLAND
44°
45°
46°
47°
166°
167°
168°
169°
170°
171°
172°
173°
174°

Foveaux Strait M2 Tidal Component



This animation shows the chief tidal current in Foveaux Strait. Tidal currents on the west coast of Stewart Island are small, but around the northern and southern coasts of the island and in Bluff Harbour and Oreti Estuary there are strong tidal currents. Overall currents (not shown here) in Foveaux Strait however, are strongly wind-driven with the prevailing wind being from the west. The Southland current, which carries water from the subtropical convergence west of New Zealand, flows through Foveaux Strait.

http://www.niwa.co.nz/our-science/coasts/research-projects/all/physical-hazards-affecting-coastal-margins-and-the-continental-shelf/news/fovmov

On the website this is a dynamic model for all stages of the tide.

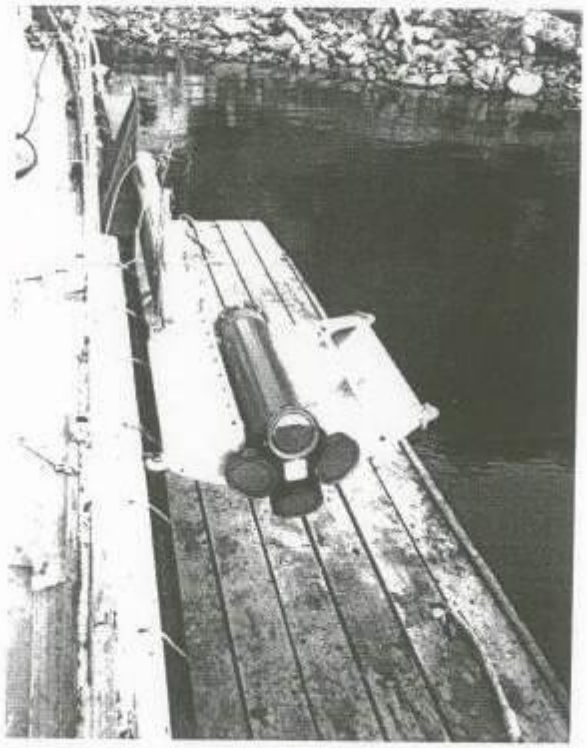
Acoustic Doppler Current Profiler

Measurements of Tidal Currents in

Bluff Harbour

Initial Draft Report

SOUTHLAND REGIONAL COUNCIL
13 OCT 1999
File 2e%/13

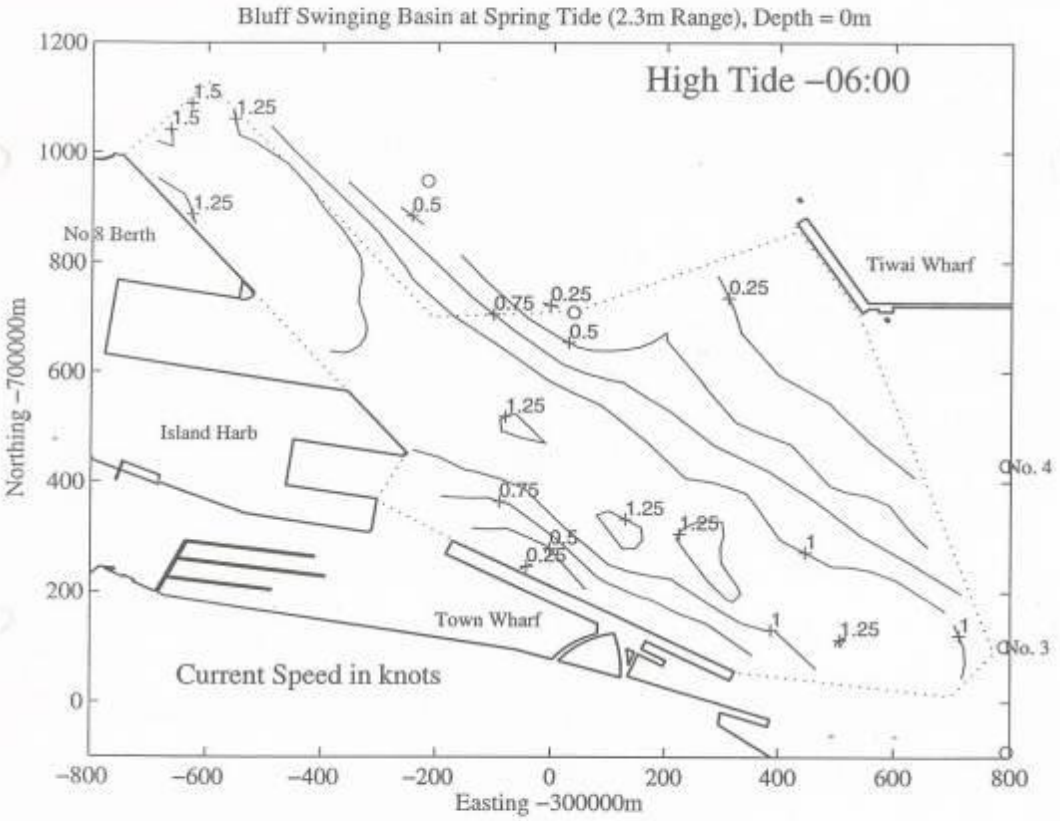


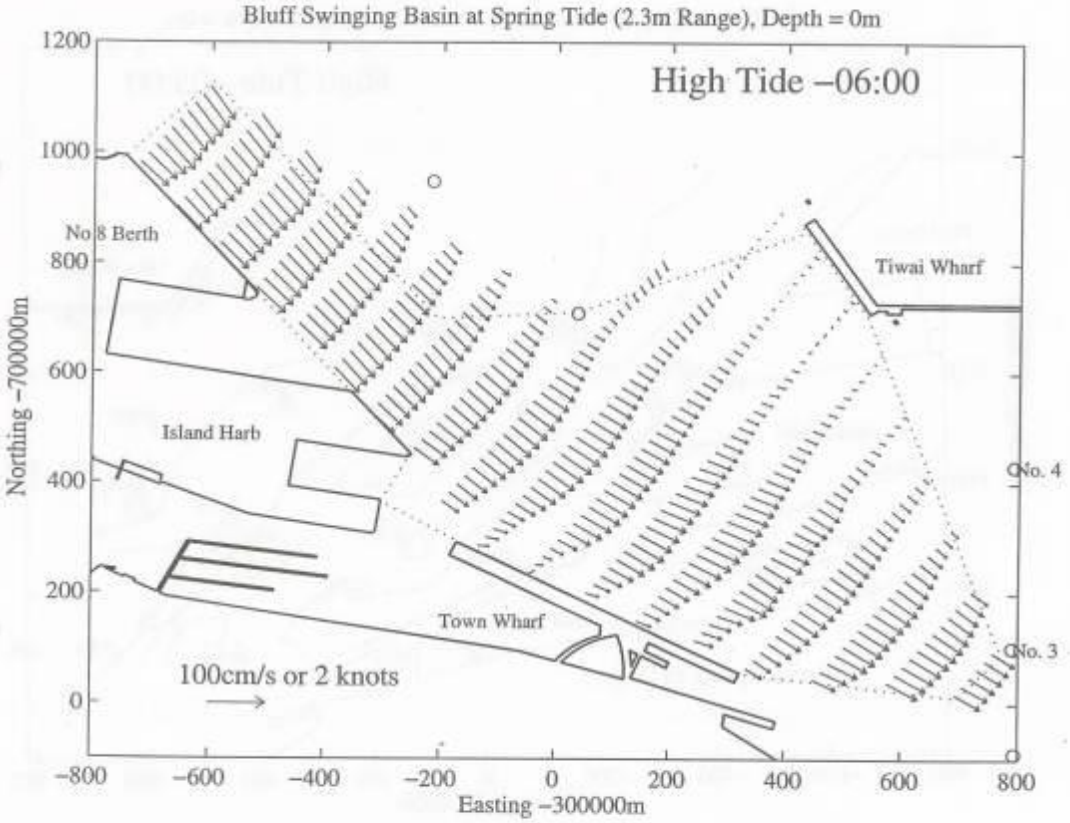
For currents at the Tiwai Bridge, Awarua Bay, see Annex 4.6

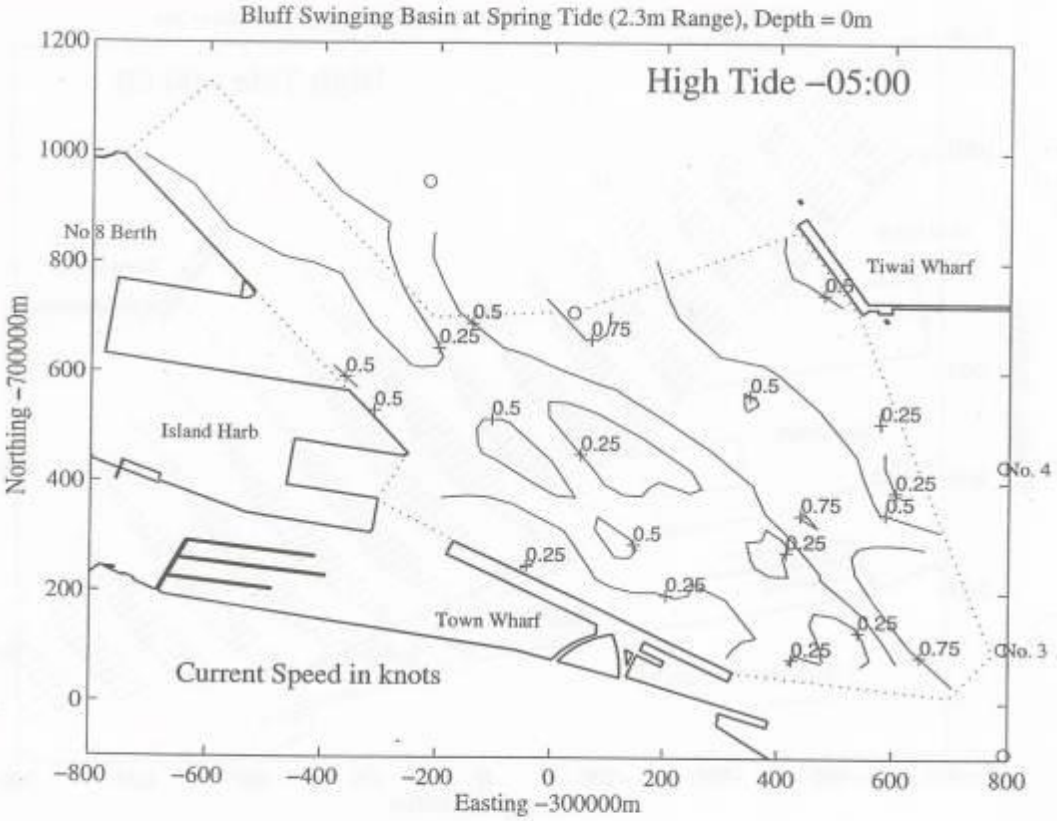
Prepared for Southport NZ Ltd June 1998, by

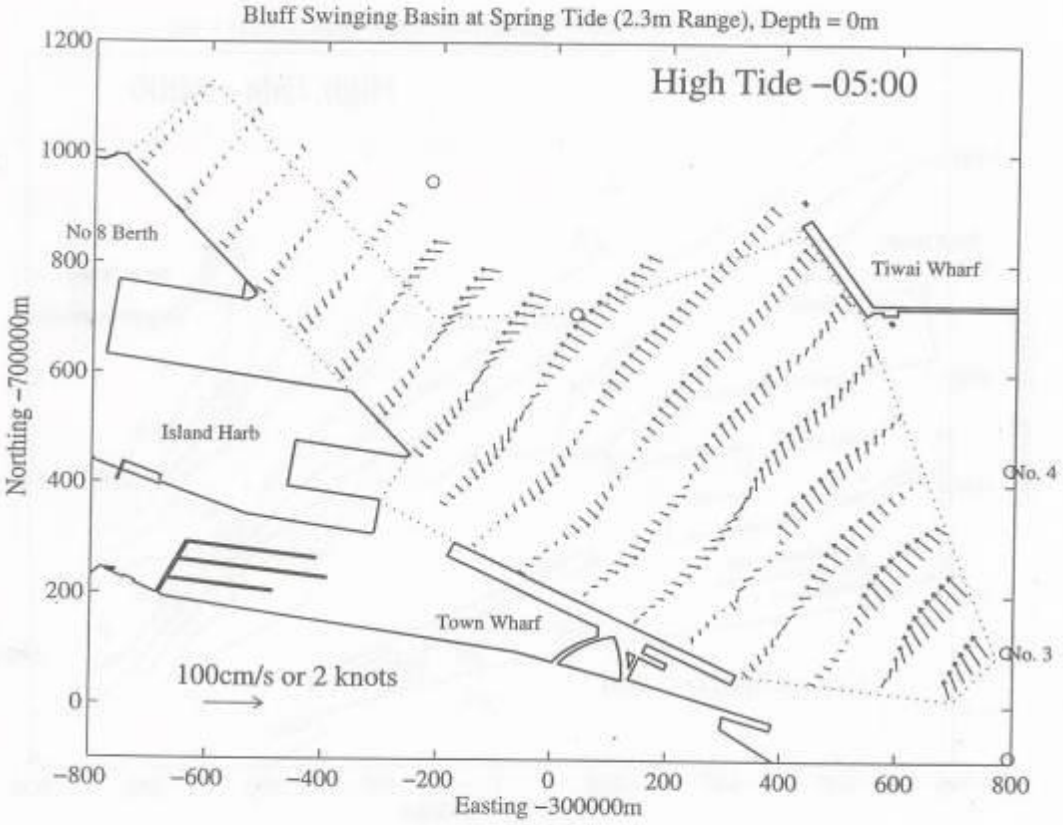
Ross Vennell
Dept. Marine Science
University Of Otago
Dunedin, New Zealand

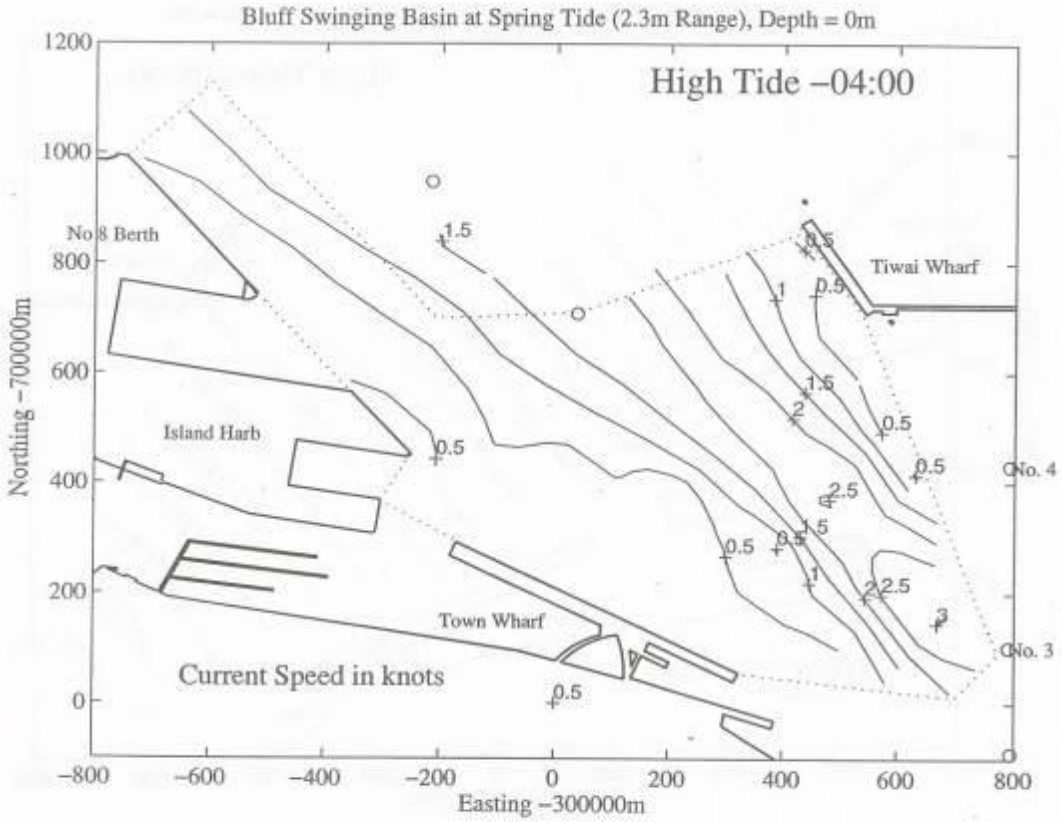
Phone 64-3-479 8307
Fax 64-3-479 8336
Email : vennell@otago.ac.nz

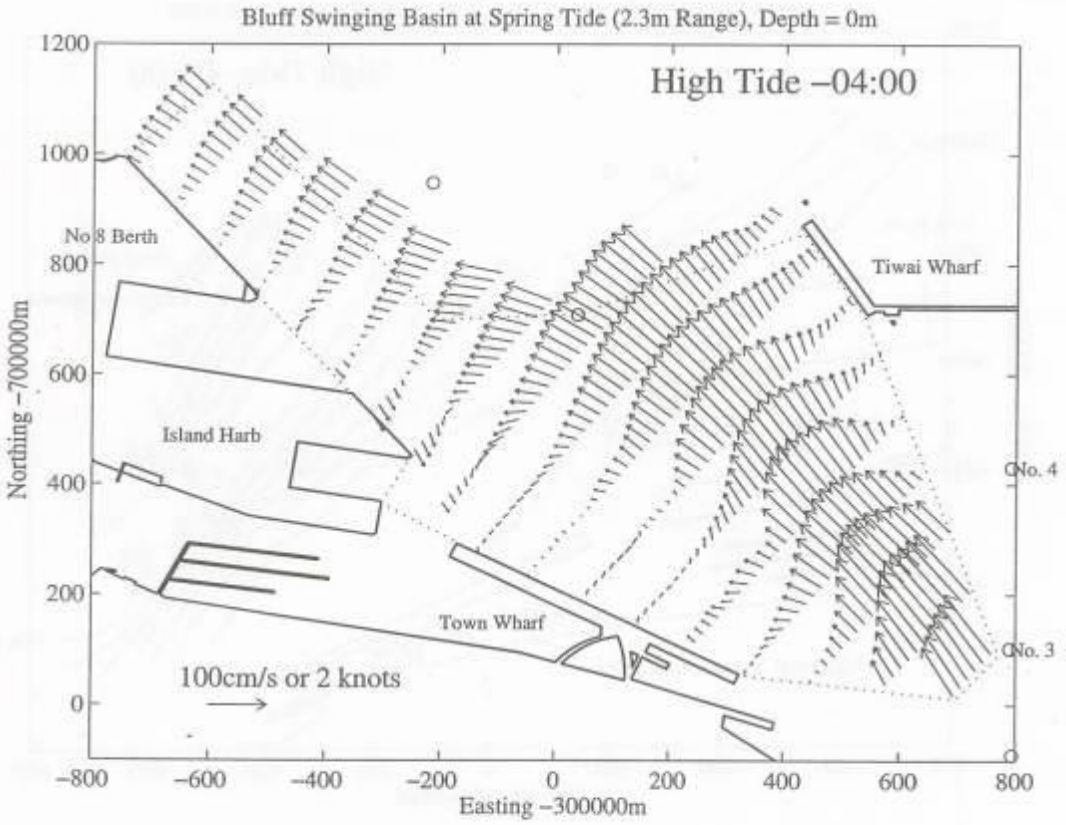

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –06:00
No 8 Berth
Island Harb
Town Wharf
Tiwai Wharf
No. 4
No. 3
Current Speed in knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800
1.5
1.25
0.5
0.75
0.25
1
1.25

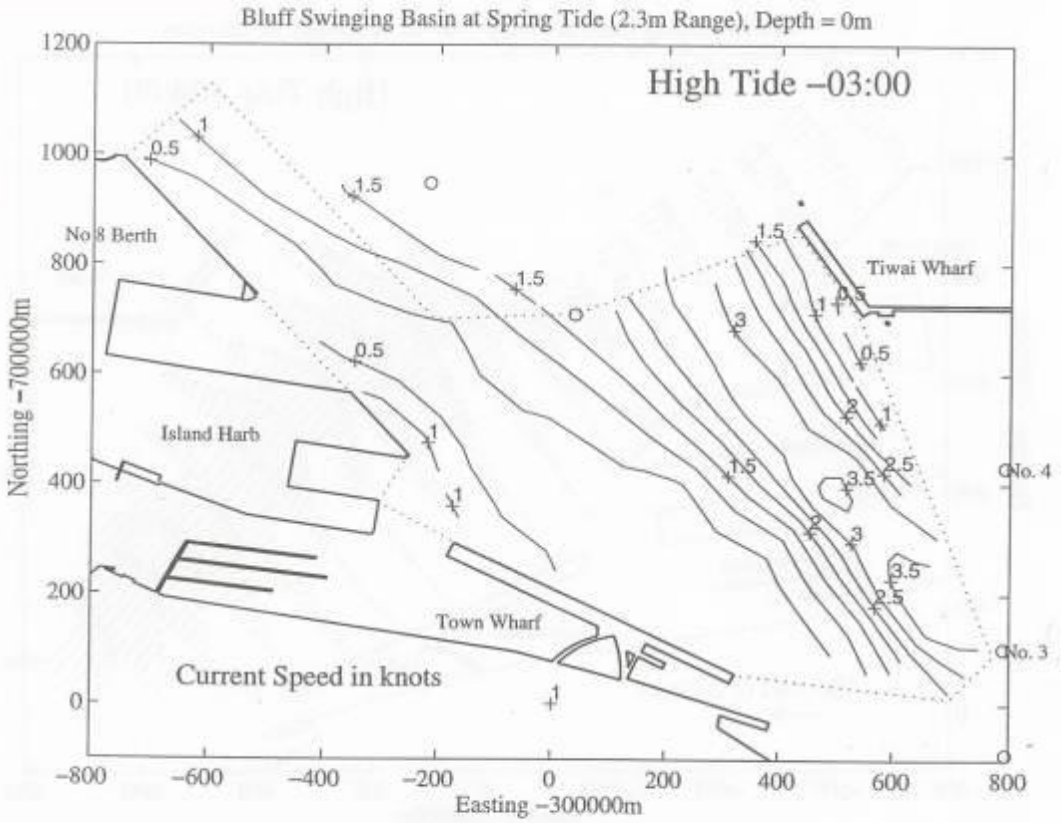

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –06:00
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800

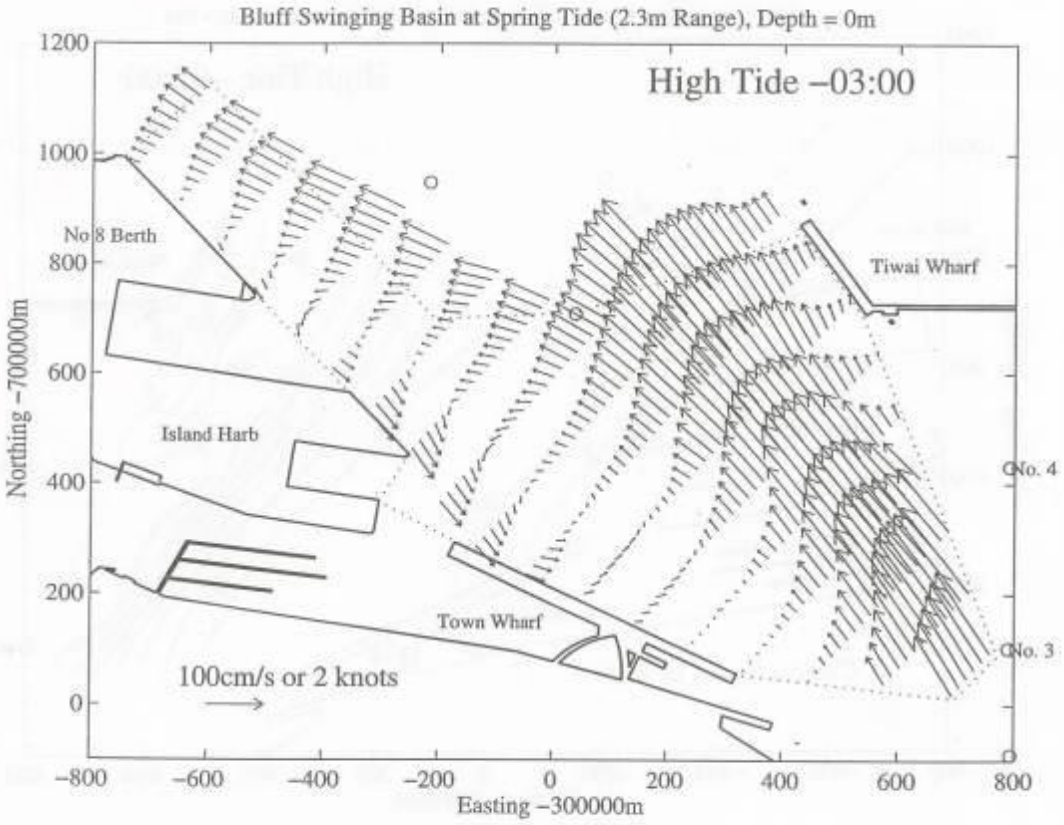

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –05:00
No 8 Berth
Island Harb
Tiwai Wharf
Town Wharf
No. 4
No. 3
Current Speed in knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800
0.5
0.25
0.75

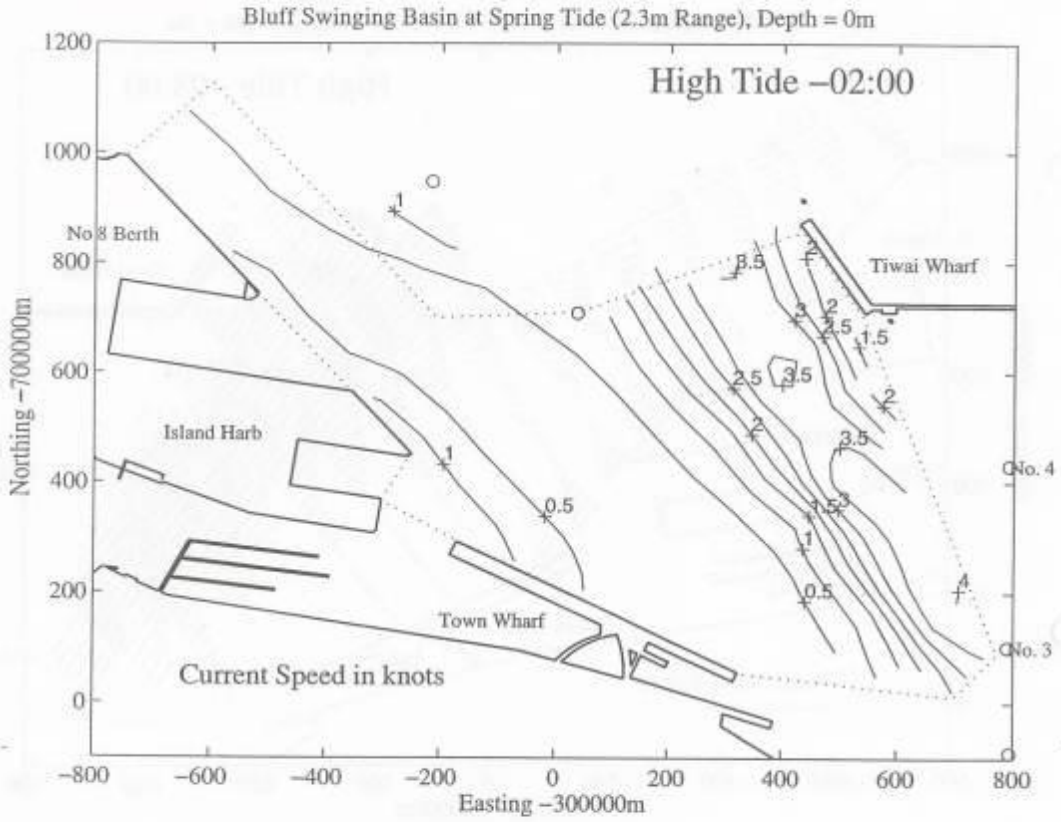

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –05:00
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800

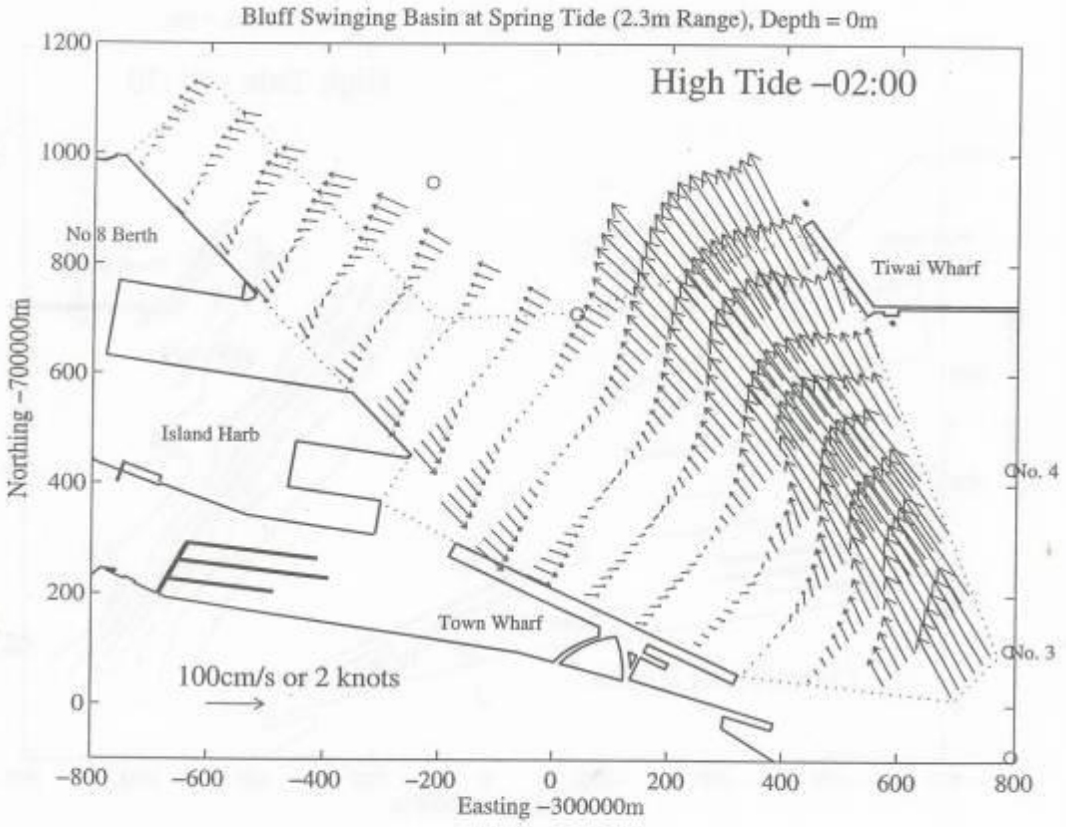

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –04:00
No 8 Berth
Tiwai Wharf
Island Harb
Town Wharf
No. 4
No. 3
Current Speed in knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800
0.5
1
1.5
2
2.5
3

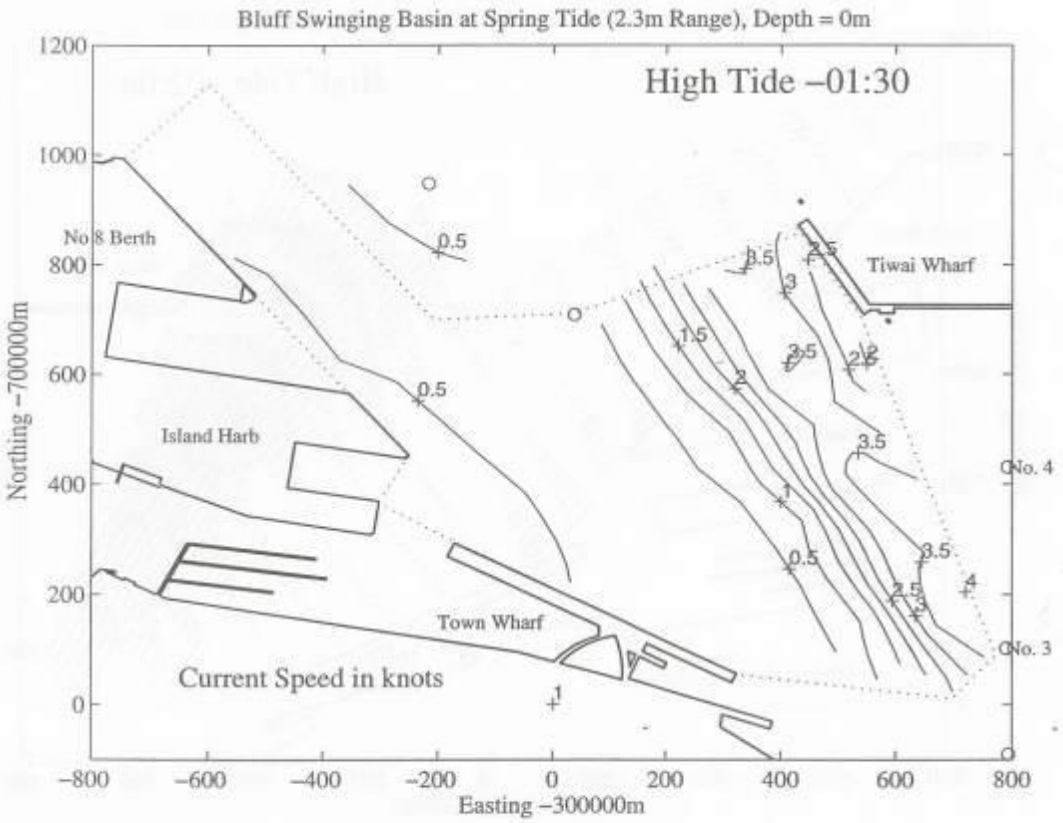

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –04:00
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800

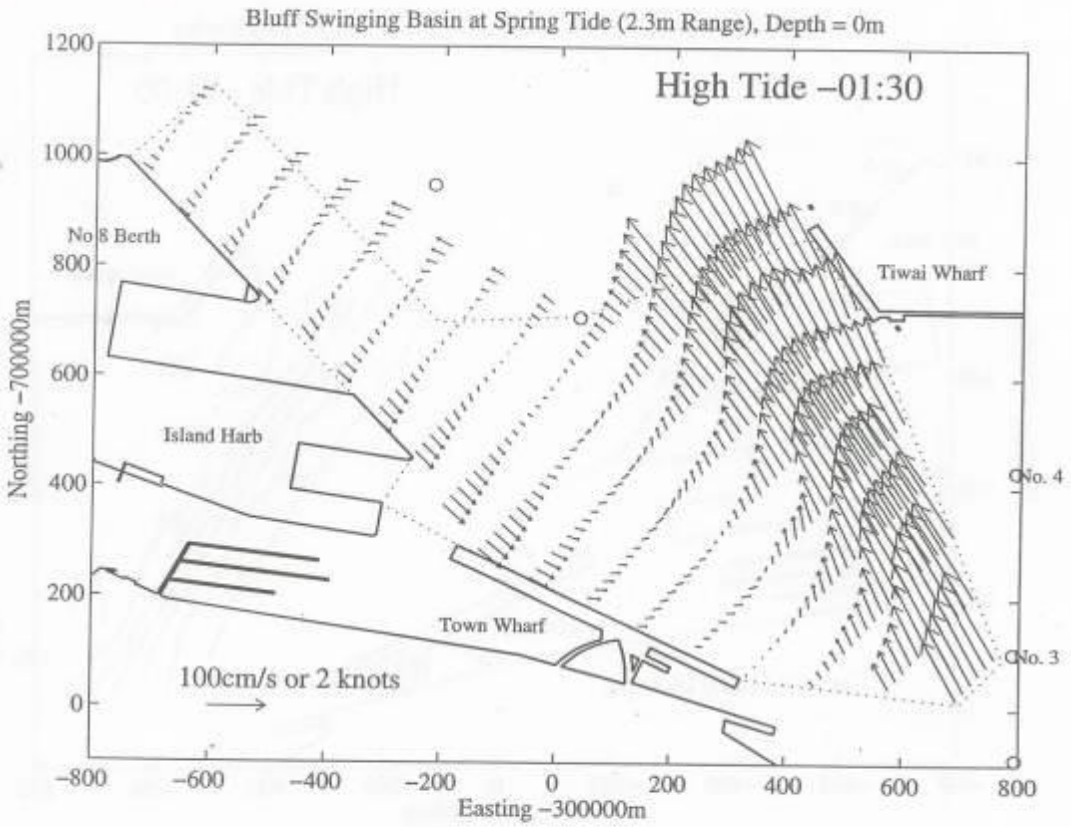

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –03:00
No 8 Berth
Island Harb
Town Wharf
Tiwai Wharf
No. 4
No. 3
Current Speed in knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800

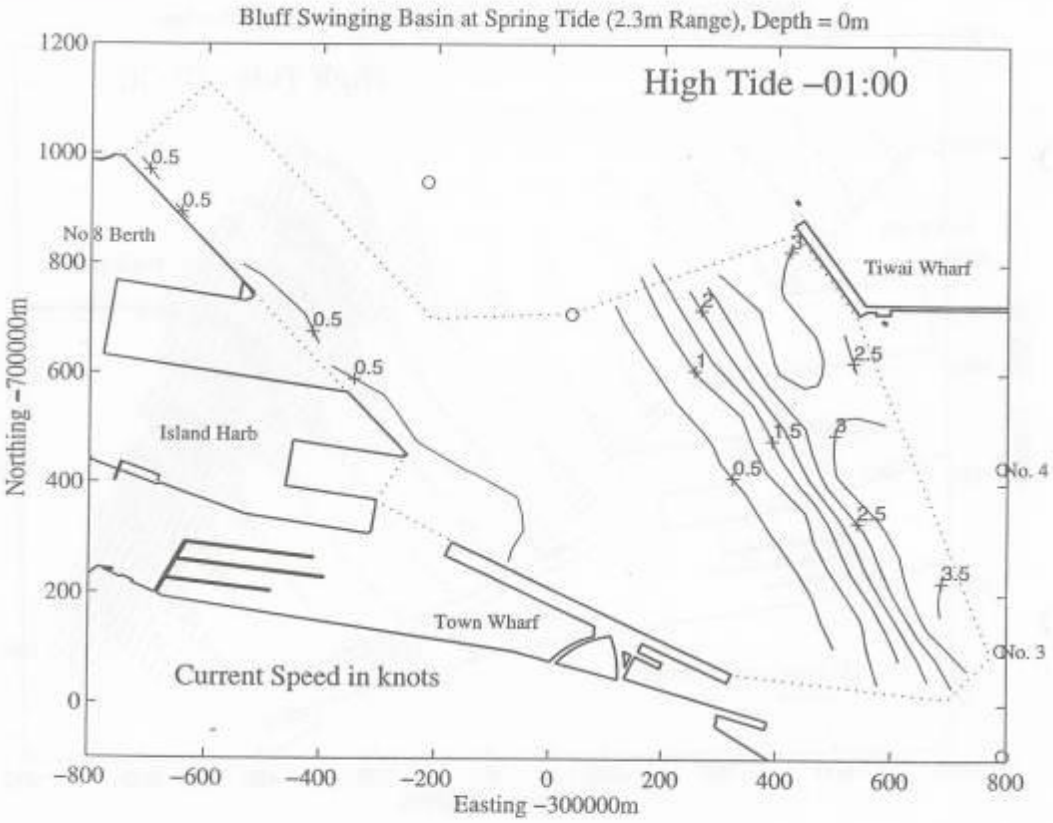

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –03:00
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
No. 3
Town Wharf
100cm/s or 2 knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800

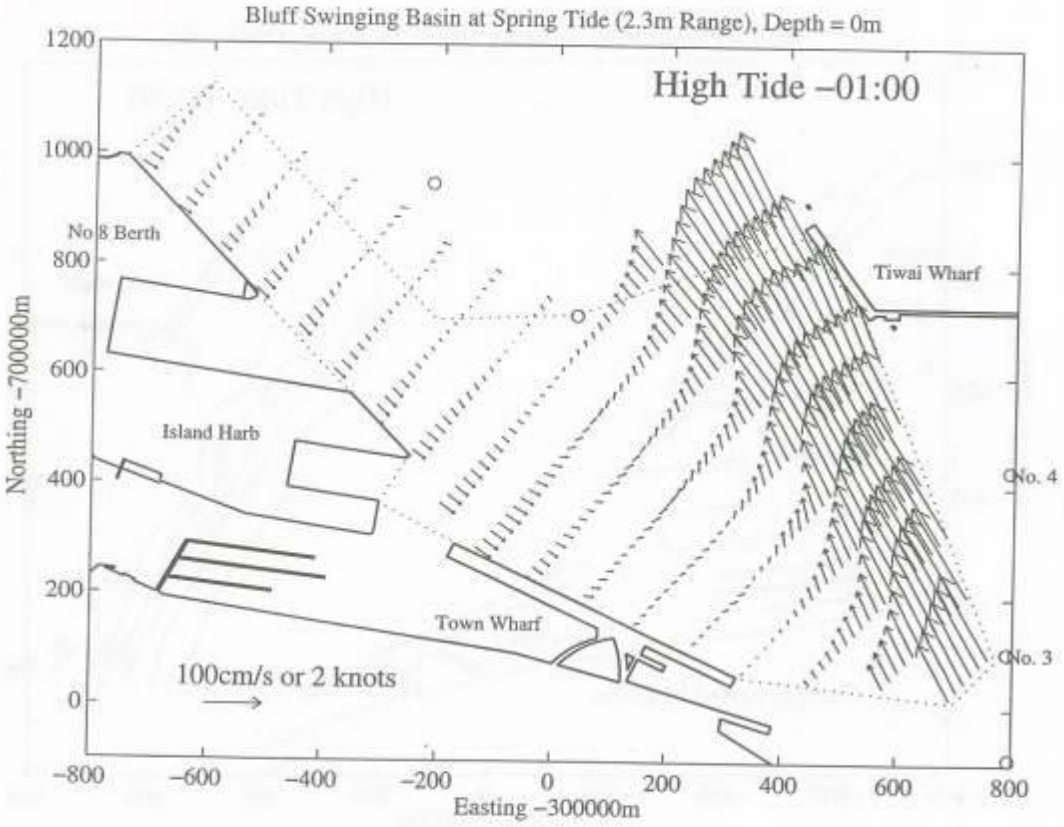

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –02:00
No 8 Berth
Island Harb
Tiwai Wharf
Town Wharf
No. 4
No. 3
Current Speed in knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800
0.5
1
1.5
2
2.5
3
3.5
4

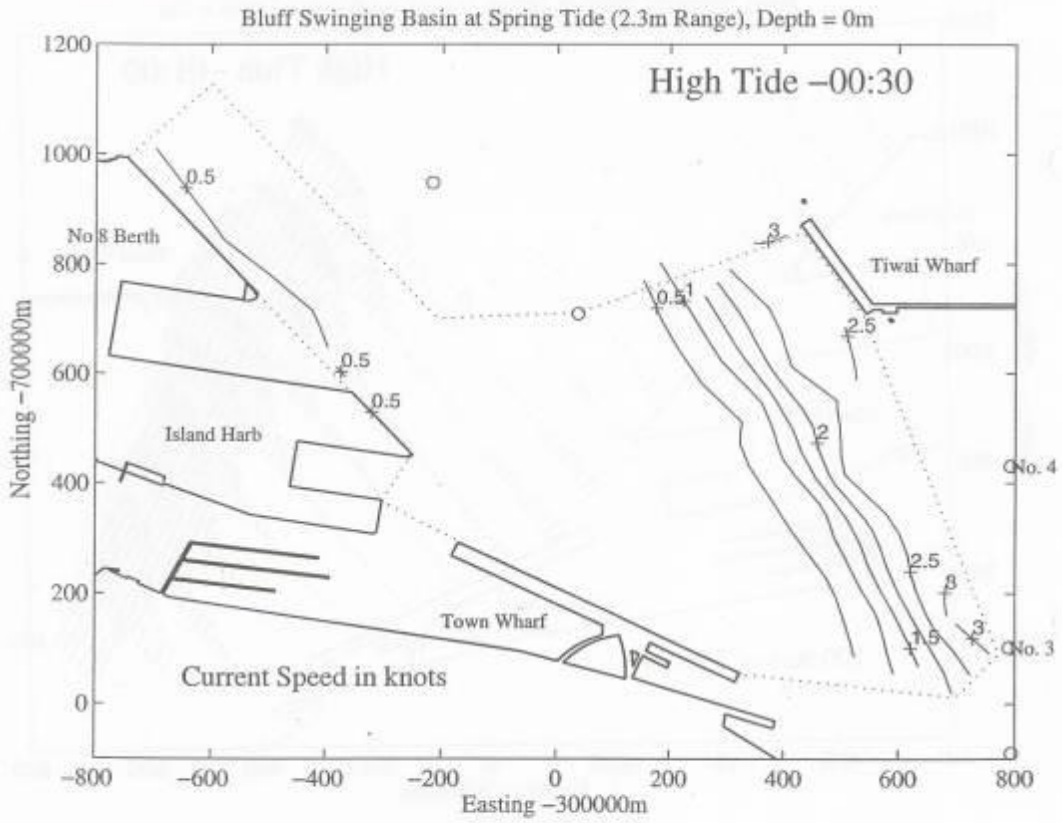

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide −02:00
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
No. 3
Town Wharf
100cm/s or 2 knots
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800

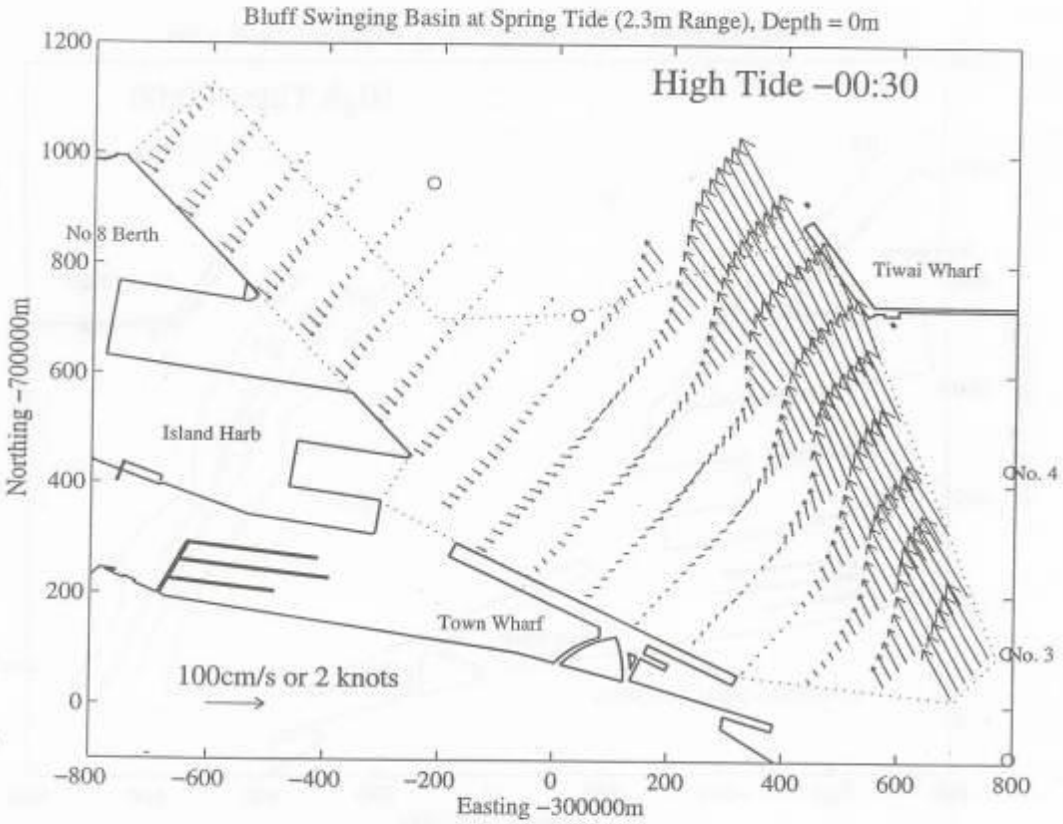

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –01:30
No 8 Berth
Island Harb
Tiwai Wharf
Town Wharf
No. 4
No. 3
Current Speed in knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800
0.5
1
1.5
2
2.5
3
3.5
4

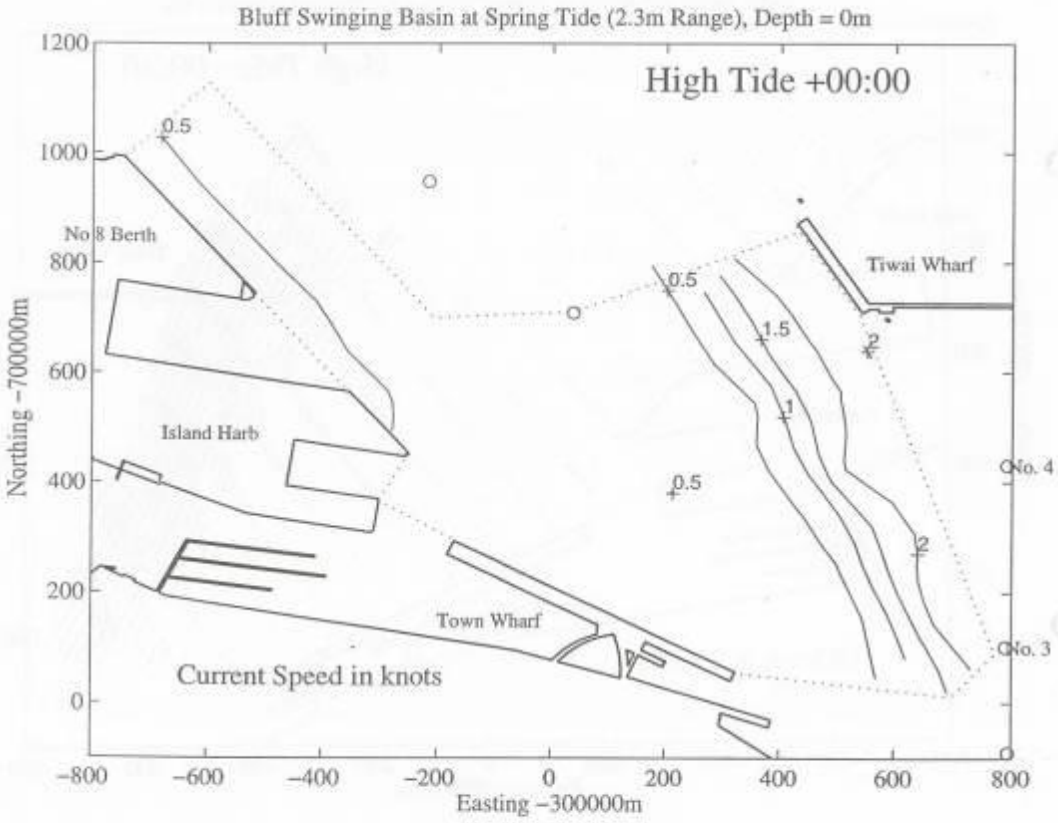

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –01:30
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
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–400
–200
0
200
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600
800

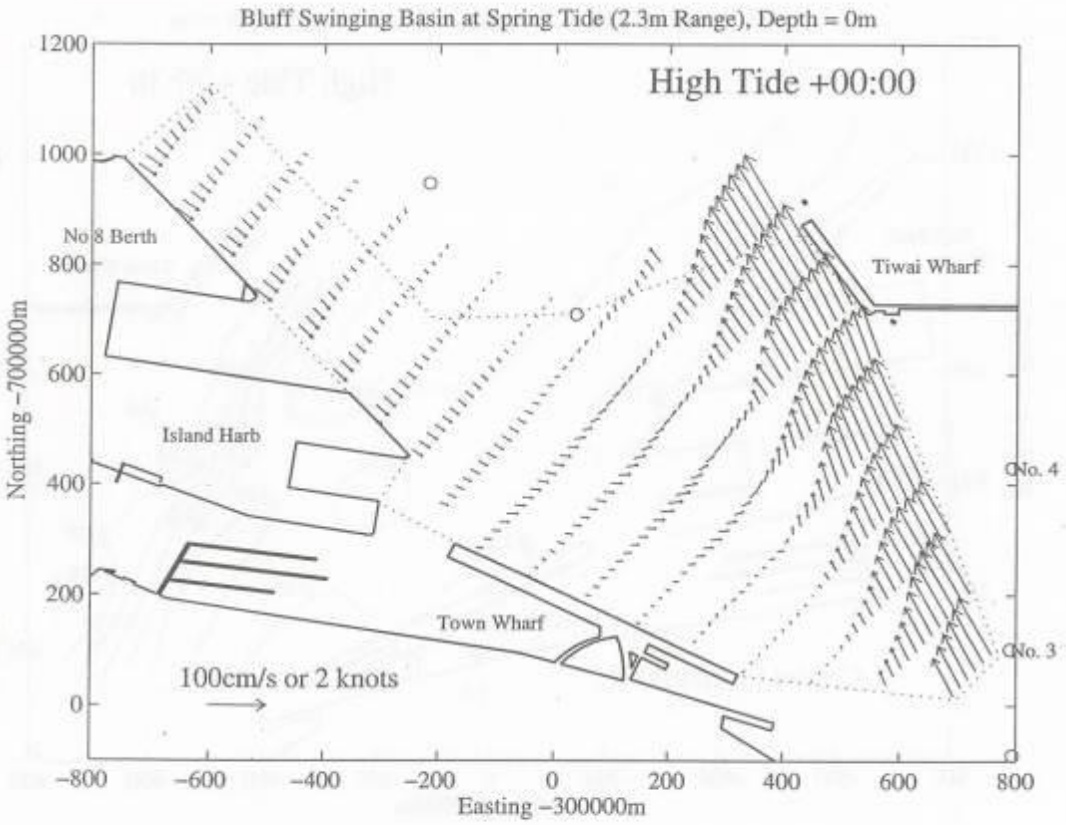

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –01:00
No 8 Berth
Island Harb
Tiwai Wharf
Town Wharf
No. 4
No. 3
Current Speed in knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
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800
0.5
1
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2
2.5
3
3.5

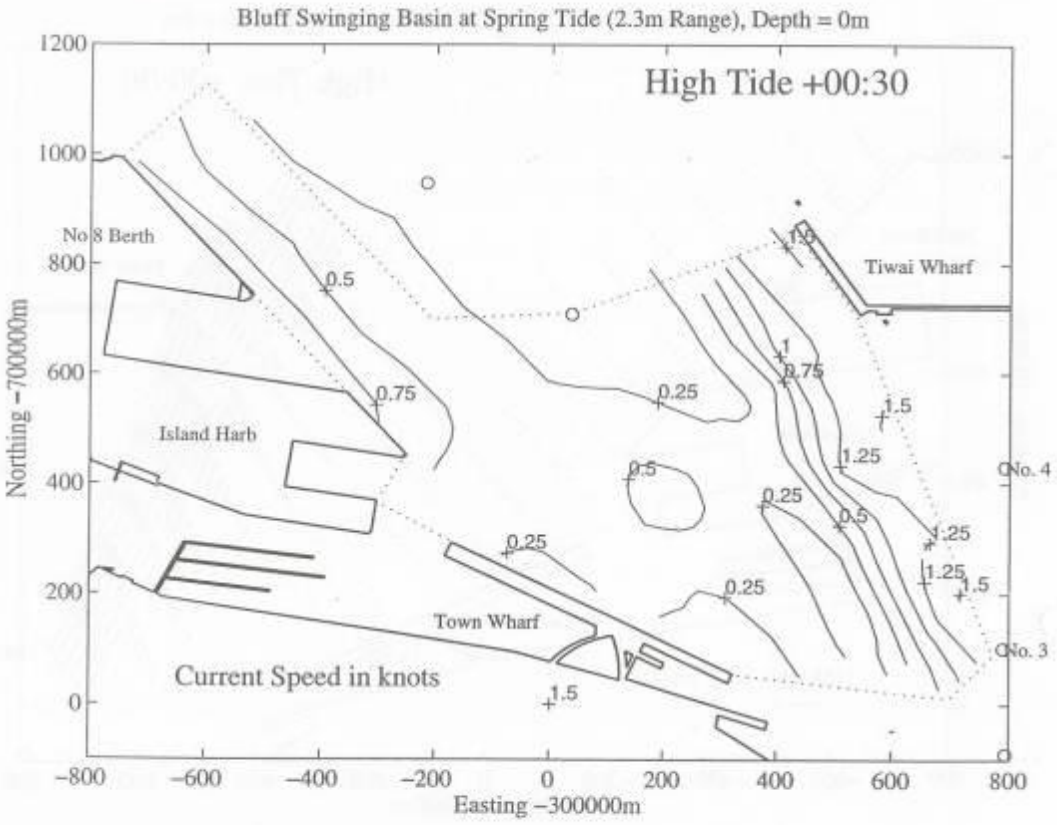

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –01:00
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800

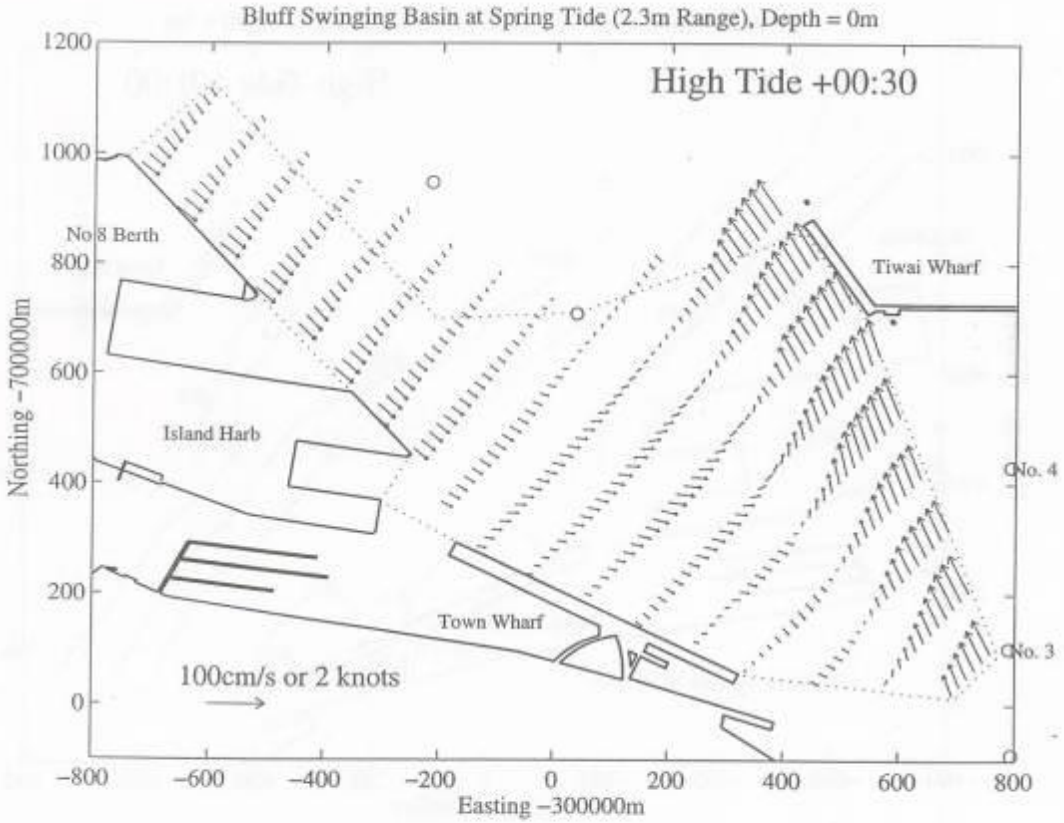

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –00:30
No 8 Berth
Island Harb
Town Wharf
Tiwai Wharf
No. 4
No. 3
Current Speed in knots
Northing –700000m
Easting –300000m
1200
1000
800
600
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200
0
–800
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0
200
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0.5
0.5
1
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2.5
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2.5
3
1.5
3

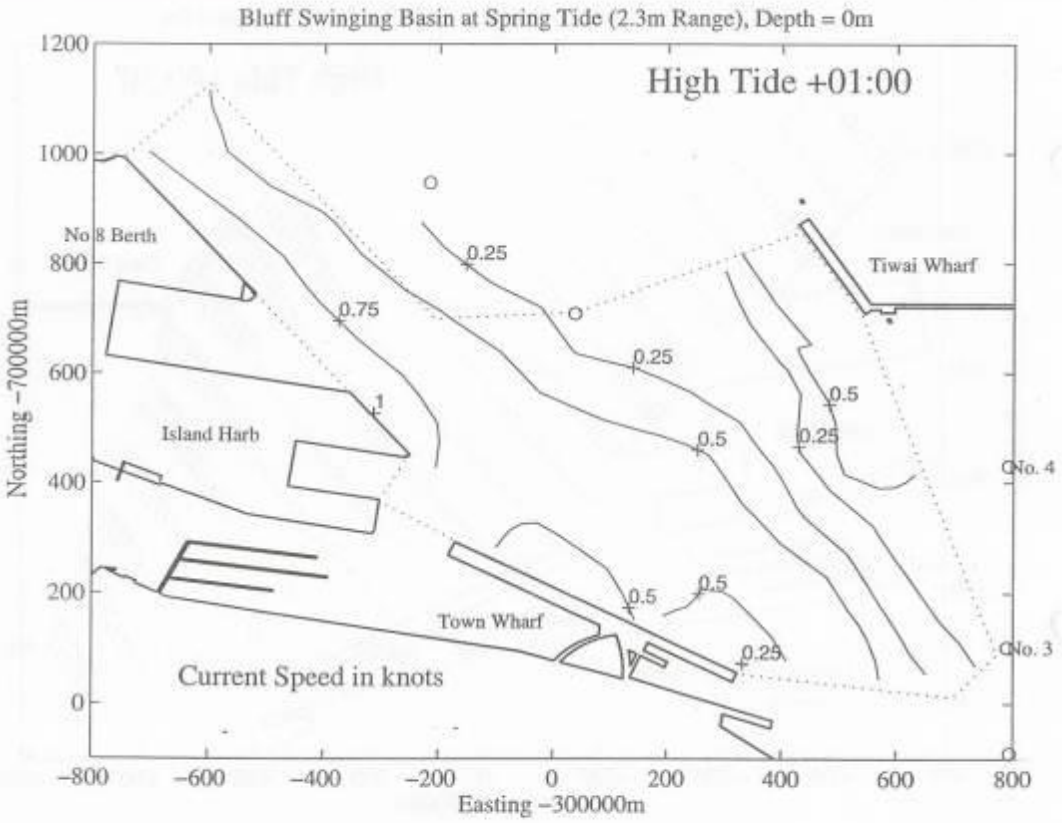

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide –00:30
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
No. 3
Town Wharf
100cm/s or 2 knots
Northing –700000m
Easting –300000m
1200
1000
800
600
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800

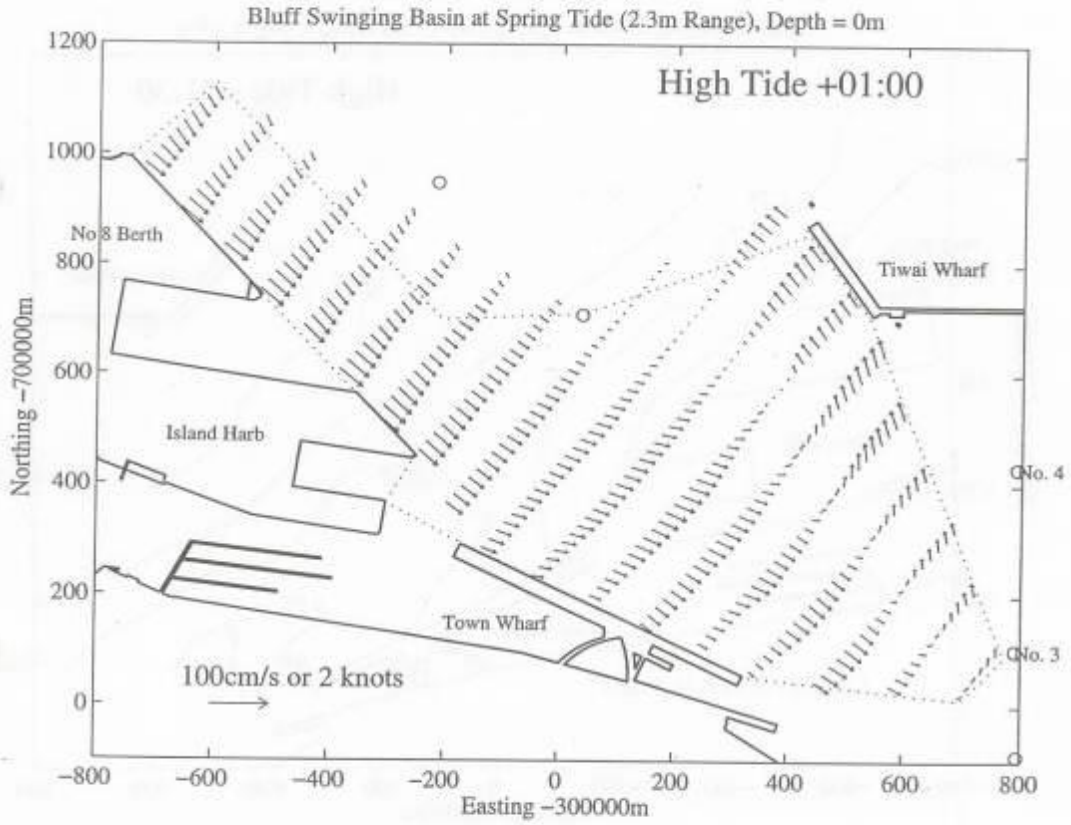

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +00:00
No 8 Berth
Island Harb
Tiwai Wharf
Town Wharf
No. 4
No. 3
Current Speed in knots
0.5
1
1.5
2
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800

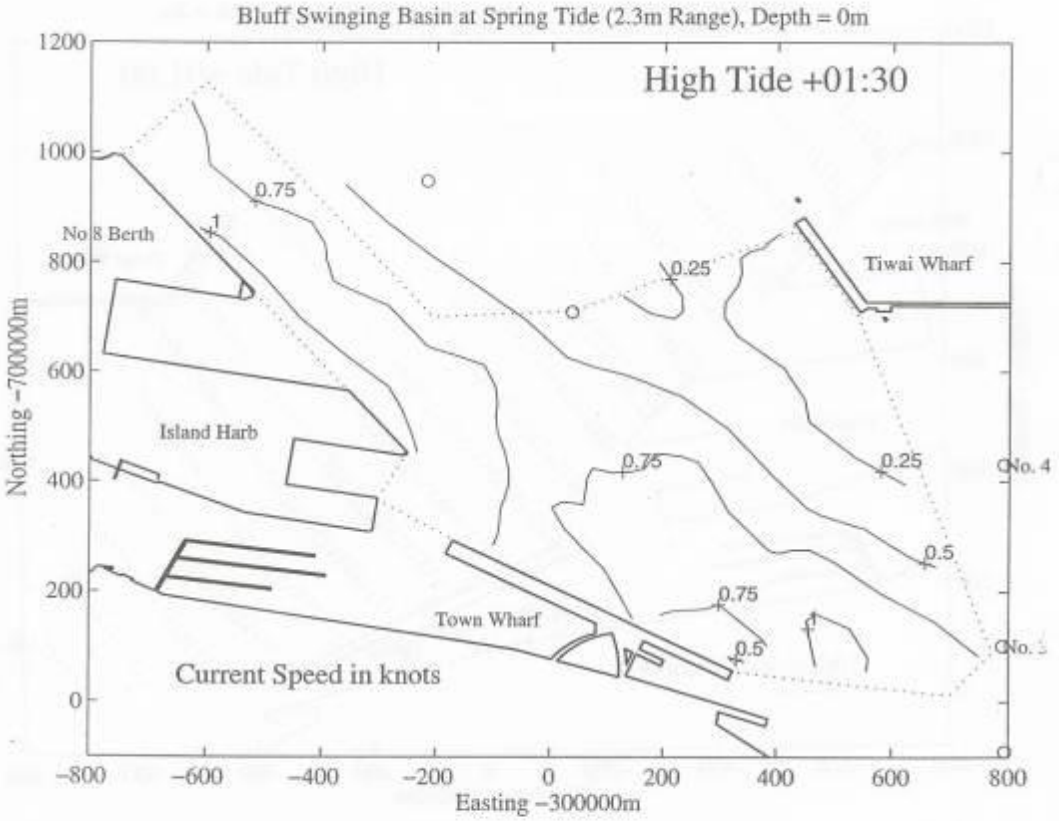

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +00:00
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing −700000m
Easting −300000m
1200
1000
800
600
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200
0
−800
−600
−400
−200
0
200
400
600
800

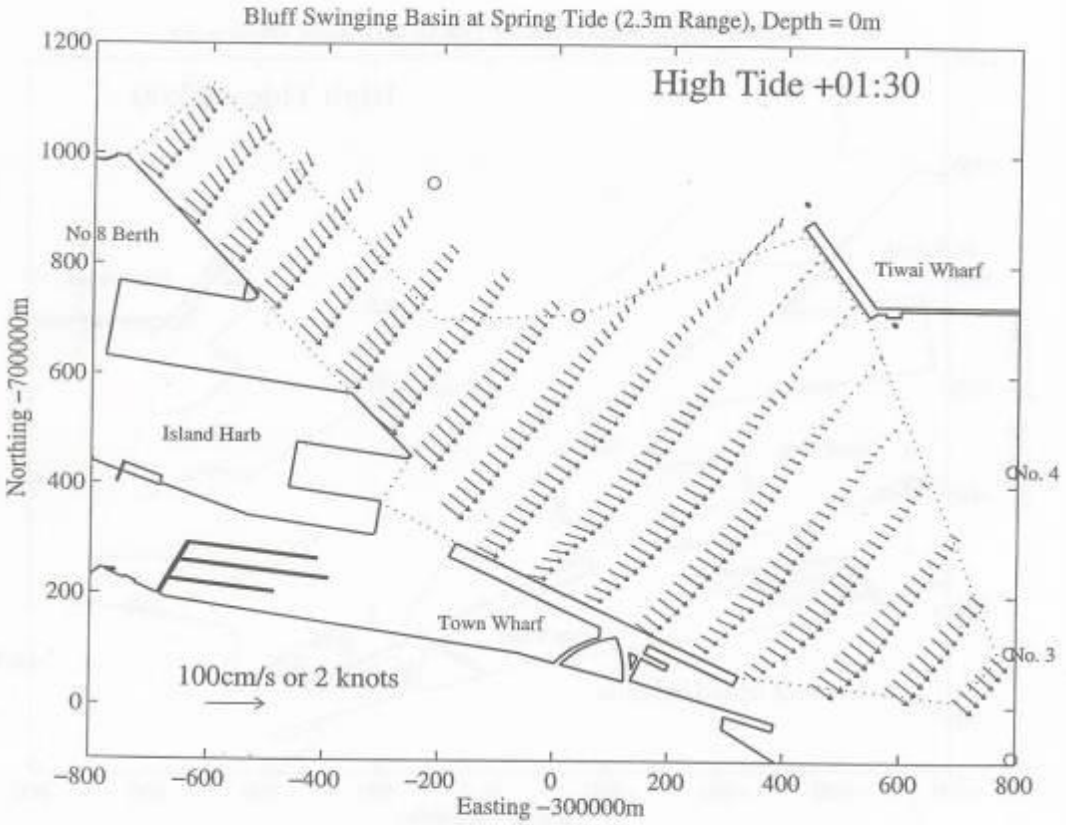

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +00:30
No 8 Berth
Island Harb
Tiwai Wharf
Town Wharf
No. 4
No. 3
Current Speed in knots
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800
0.5
0.75
0.25
1
1.5
1.25

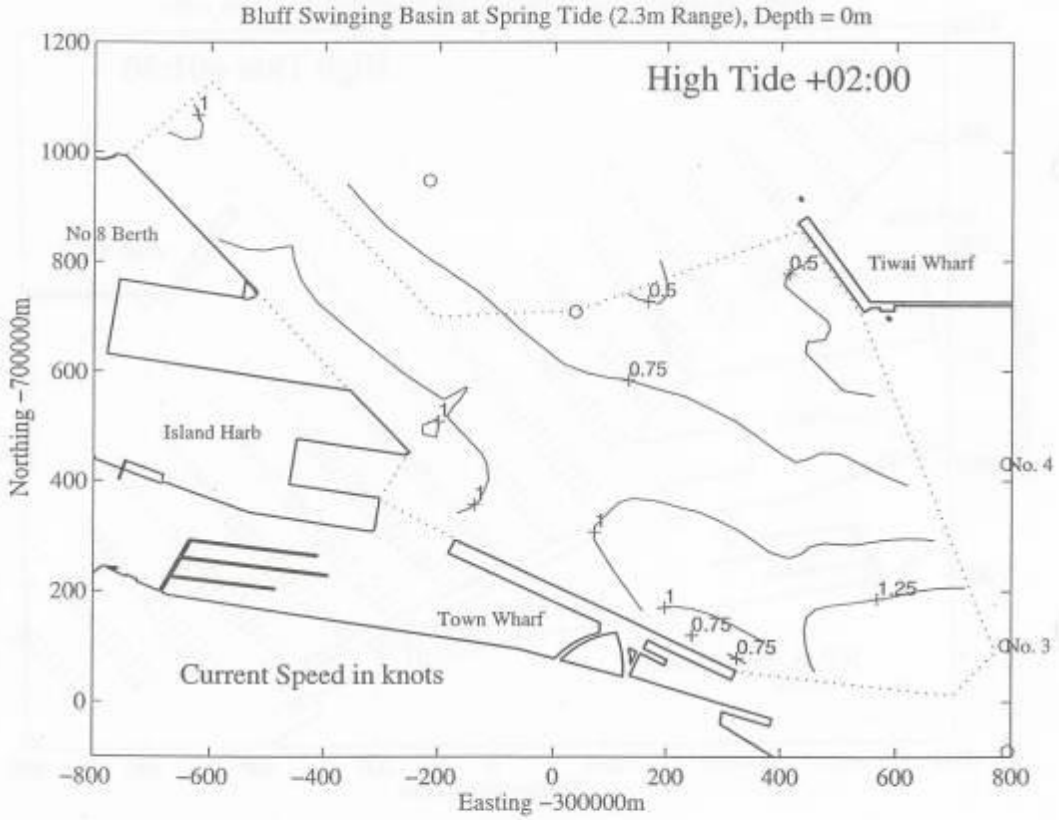

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +00:30
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800

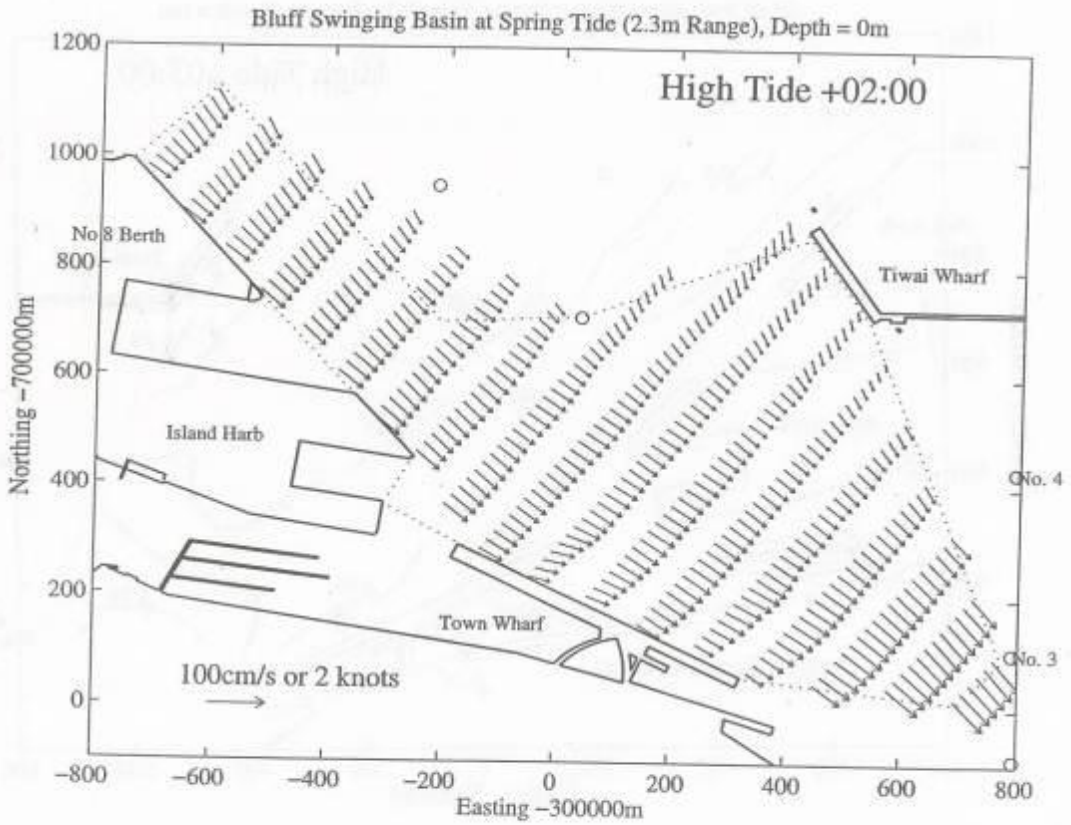

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +01:00
No 8 Berth
Tiwai Wharf
Island Harb
Town Wharf
No. 4
No. 3
Current Speed in knots
0.25
0.75
1
0.5
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800

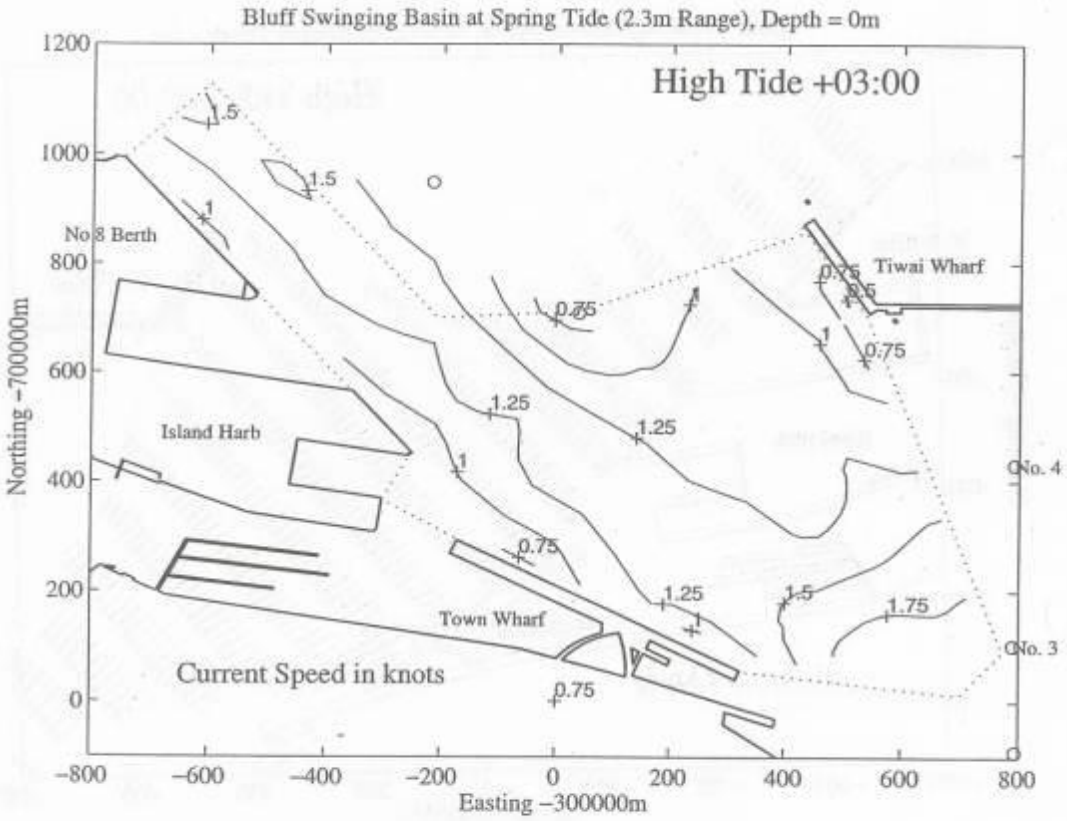

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +01:00
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800

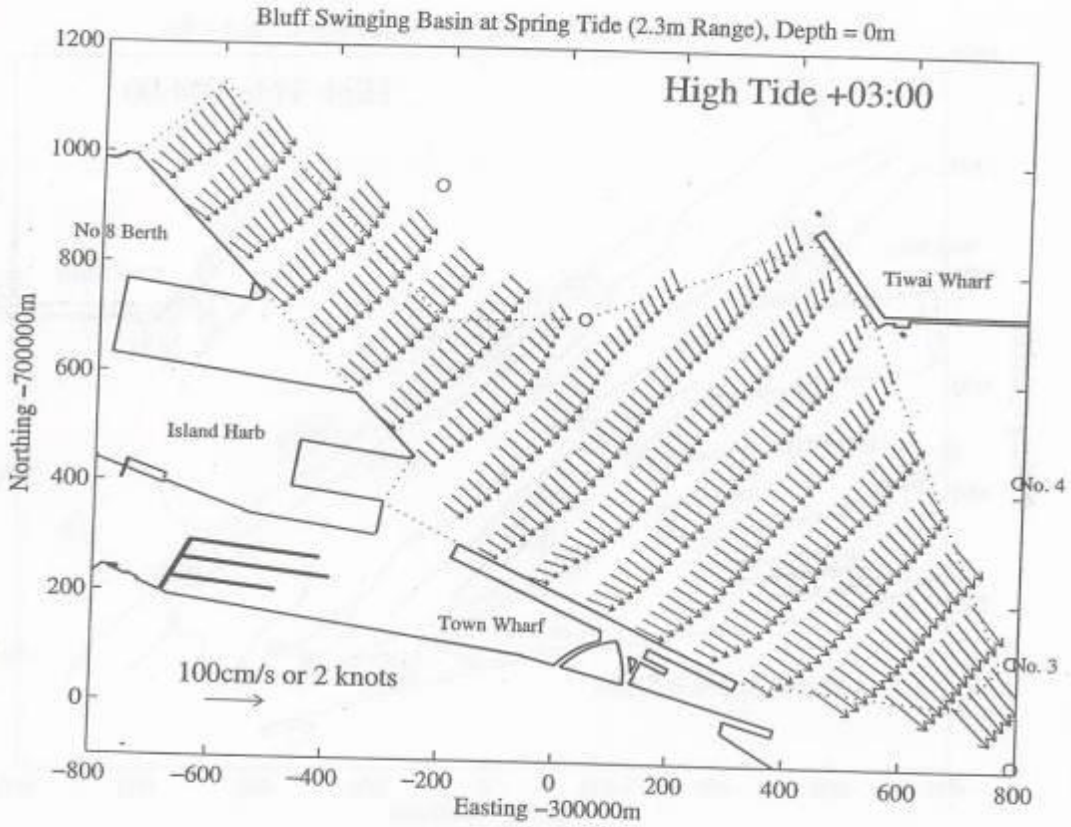

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +01:30
No 8 Berth
Island Harb
Tiwai Wharf
Town Wharf
No. 4
Current Speed in knots
0.75
1
0.25
0.5
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
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200
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600
800

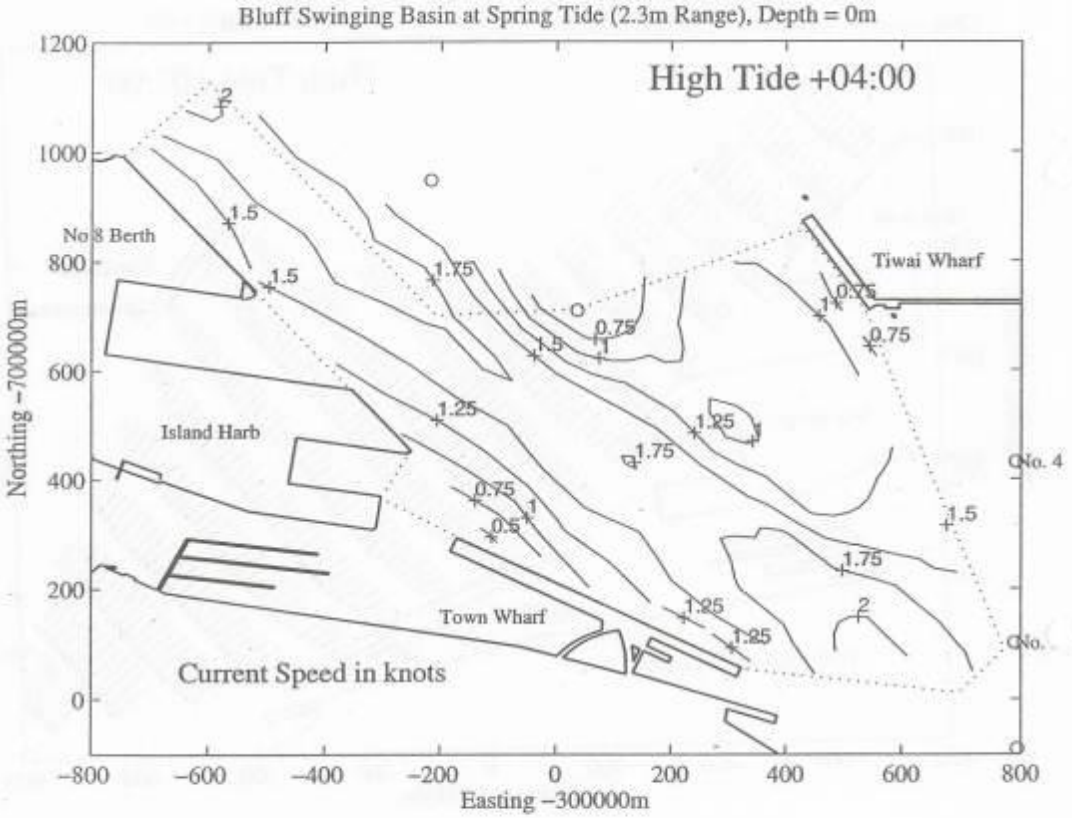

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +01:30
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800

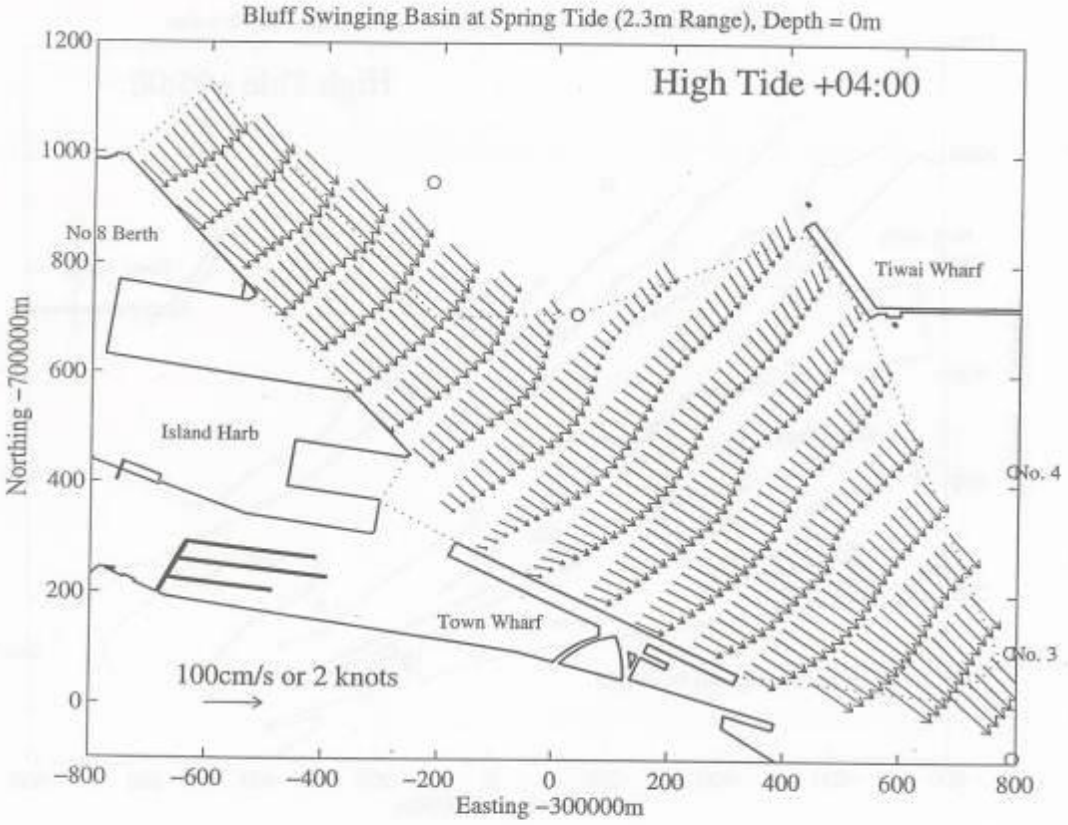

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +02:00
No 8 Berth
Island Harb
Tiwai Wharf
Town Wharf
No. 4
No. 3
Current Speed in knots
0.5
0.75
1
1.25
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800

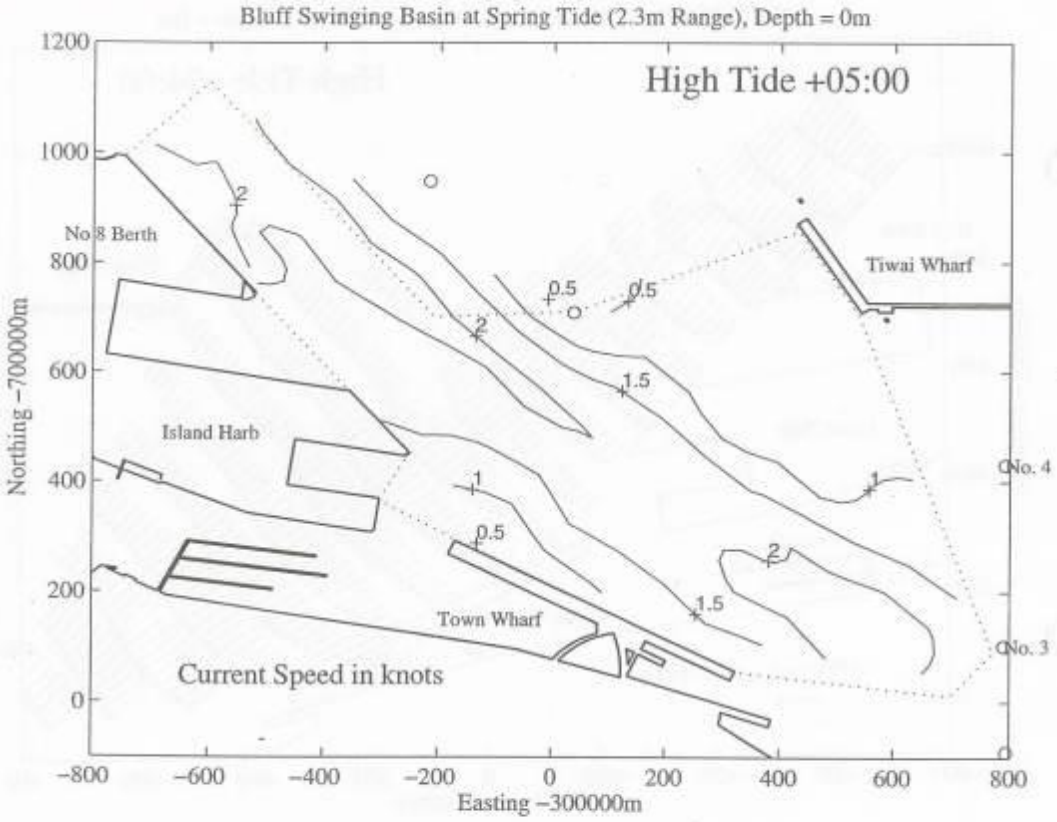

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +02:00
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800


Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +03:00
No 8 Berth
Island Harb
Tiwai Wharf
Town Wharf
No. 4
No. 3
Current Speed in knots
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800
1.5
1
0.75
1.25
1.75


Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +03:00
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing –700000m
Easting –300000m
1200
1000
800
600
400
200
0
–800
–600
–400
–200
0
200
400
600
800


Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +04:00
No 8 Berth
Tiwai Wharf
Island Harb
Town Wharf
No. 4
Current Speed in knots
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800
2
1.5
1.75
0.75
1
1.25
0.5

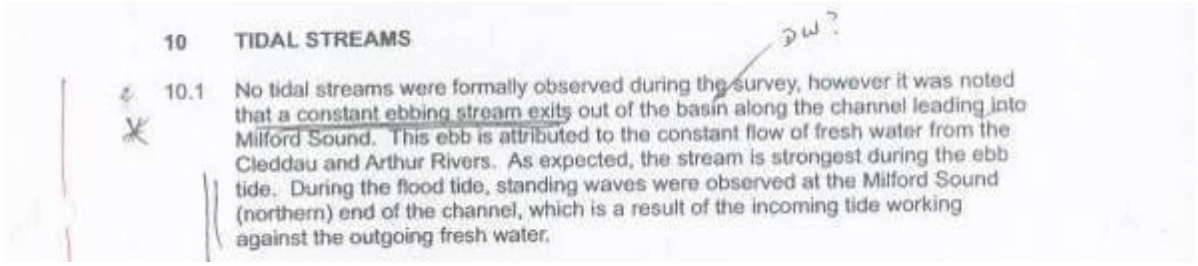

Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +04:00
No 8 Berth
Tiwai Wharf
Island Harb
No. 4
Town Wharf
No. 3
100cm/s or 2 knots
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800


Bluff Swinging Basin at Spring Tide (2.3m Range), Depth = 0m
High Tide +05:00
No 8 Berth
Tiwai Wharf
Island Harb
Town Wharf
No. 4
No. 3
Current Speed in knots
Northing −700000m
Easting −300000m
1200
1000
800
600
400
200
0
−800
−600
−400
−200
0
200
400
600
800
2
0.5
1.5
1

Annex 5.2.5

Tidal Stream observation for Deepwater Basin, Milford Sound.

(Source: Report of Survey – Deep Water Basin, Milford Sound by HSA)



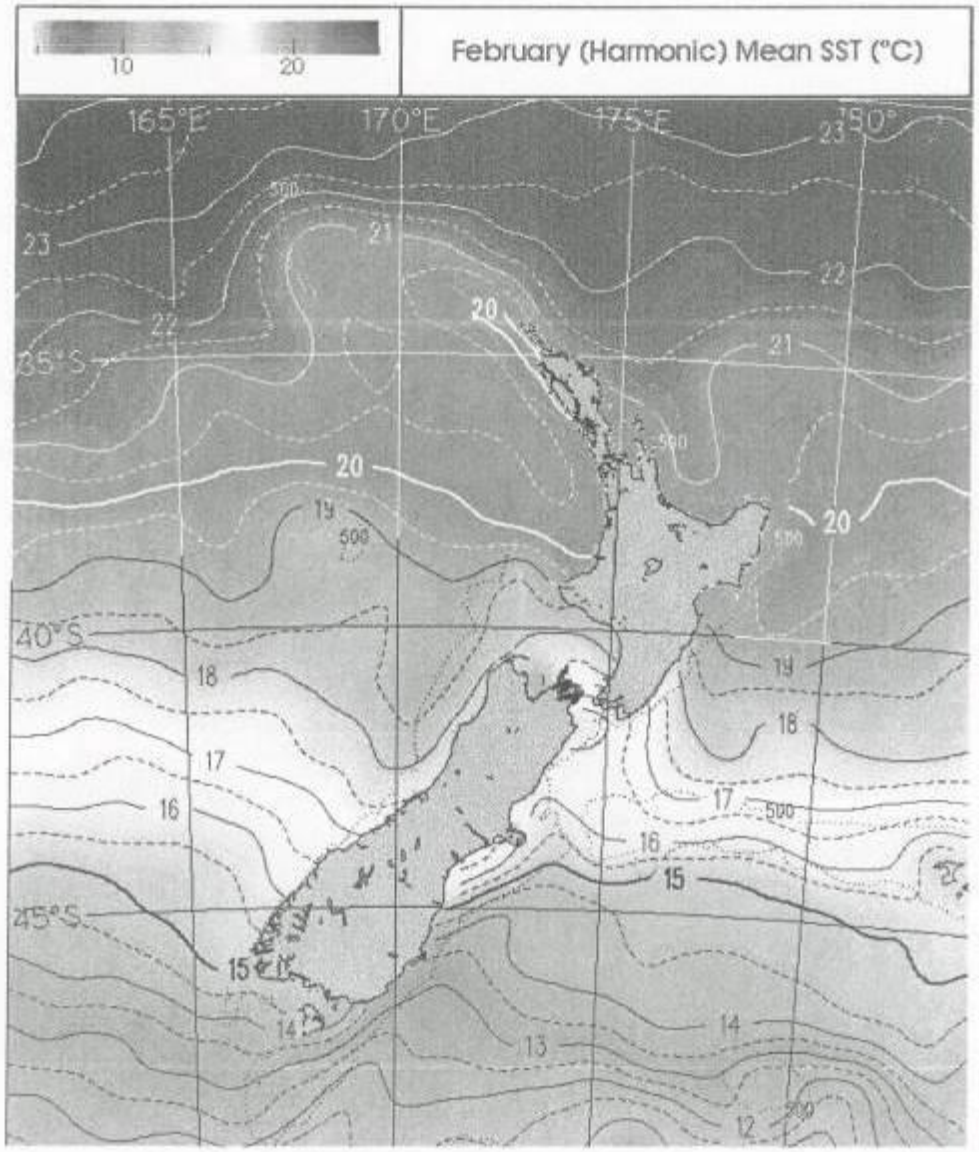
10 TIDAL STREAMS

10.1 No tidal streams were formally observed during the survey, however it was noted that a constant ebbing stream exits out of the basin along the channel leading into Milford Sound. This ebb is attributed to the constant flow of fresh water from the Cleddau and Arthur Rivers. As expected, the stream is strongest during the ebb tide. During the flood tide, standing waves were observed at the Milford Sound (northern) end of the channel, which is a result of the incoming tide working against the outgoing fresh water.

5.3 Water Temperature

NIWA
Taihoro Nukurangi

Mean SST for February (1993-1997)

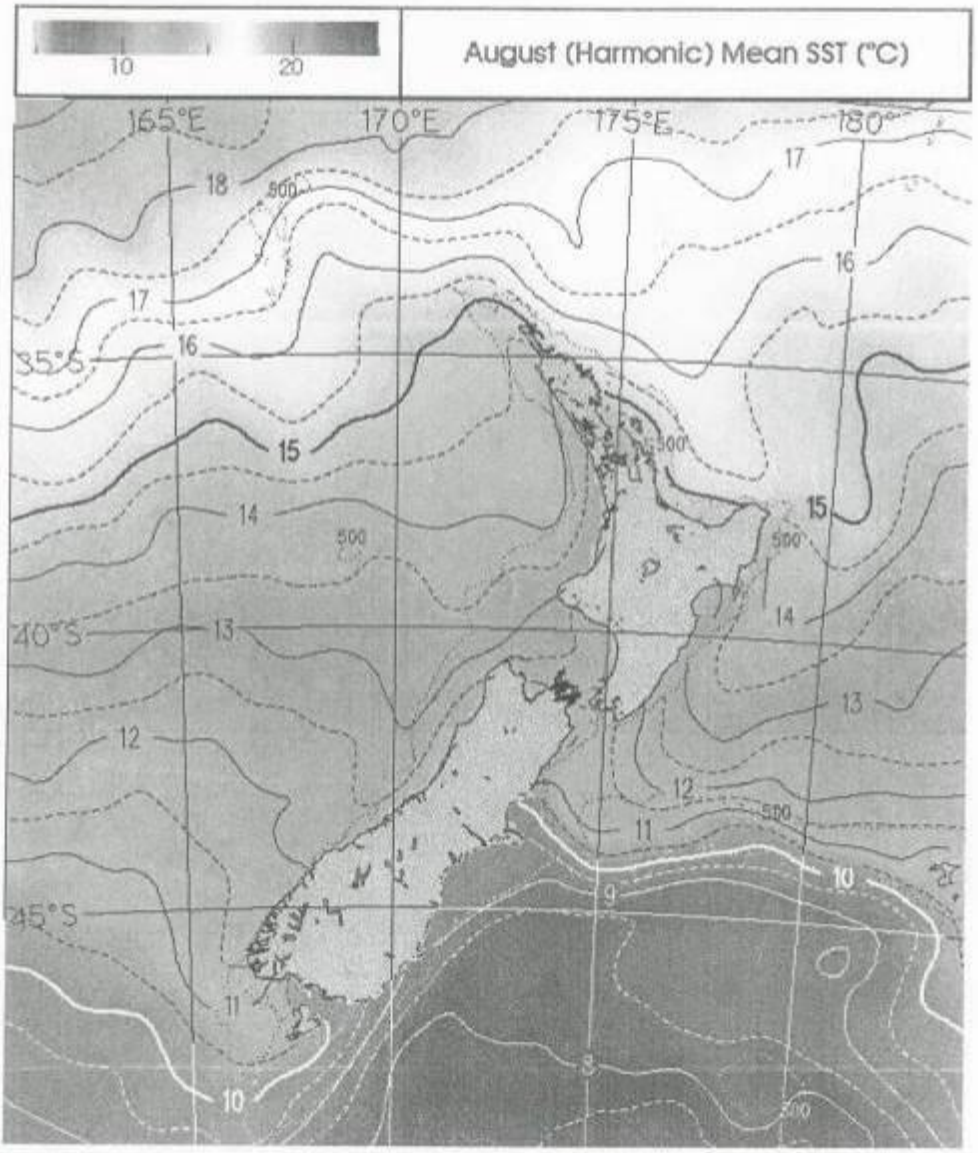


http://www.sst.niwa.cri.nz/cgi-bin/menu_server.exe 5/30/00

Annex 5.3.2

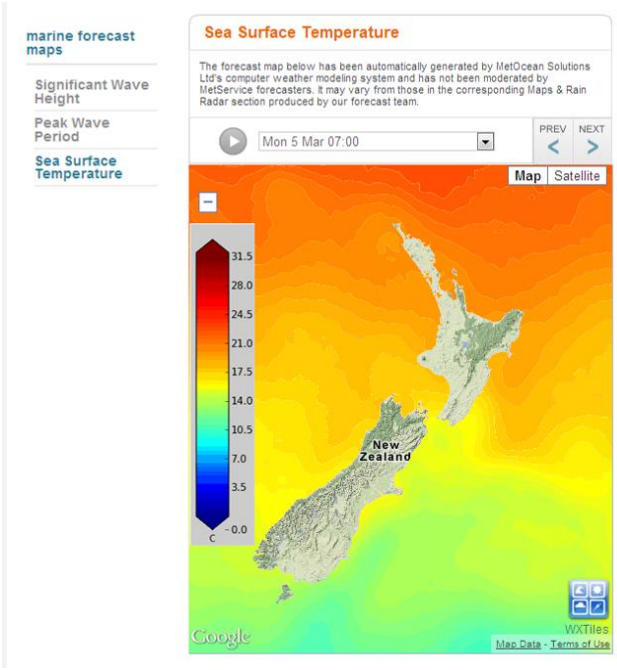
NIWA
Taihoro Nukurangi

Mean SST for August (1993-1997)

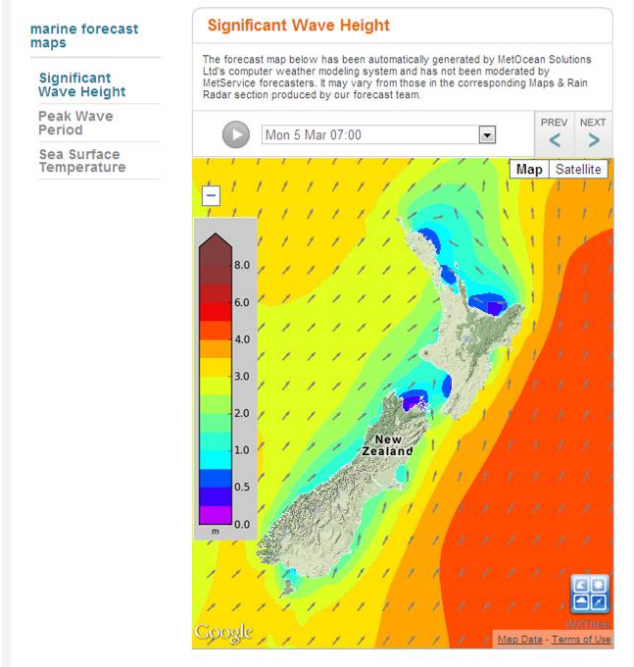


Sea Surface temperature & Significant Wave height Forecasts

http://www.metservice.com/maps-radar/marine-forecast-maps/sea-surface-temperature



http://www.metservice.com/marine/maps/significant-wave-height



5.4 Weather

NB:
1 km/hr = 0.54 knots (say 0.5 knots)
1 knot = 1.85 km/hr (say 2 km/hr)

Annex 5.4.1

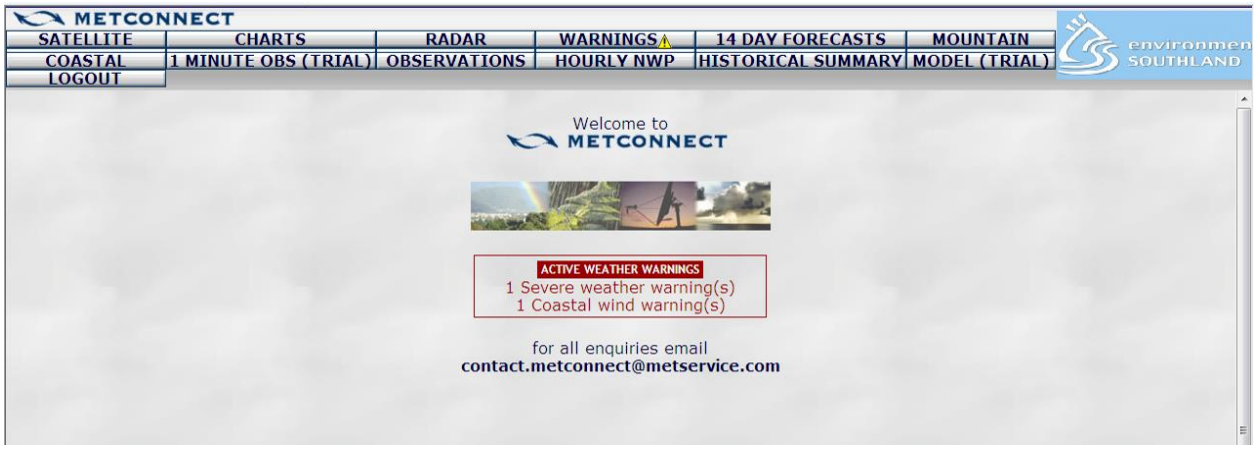
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Annex 5.4.2

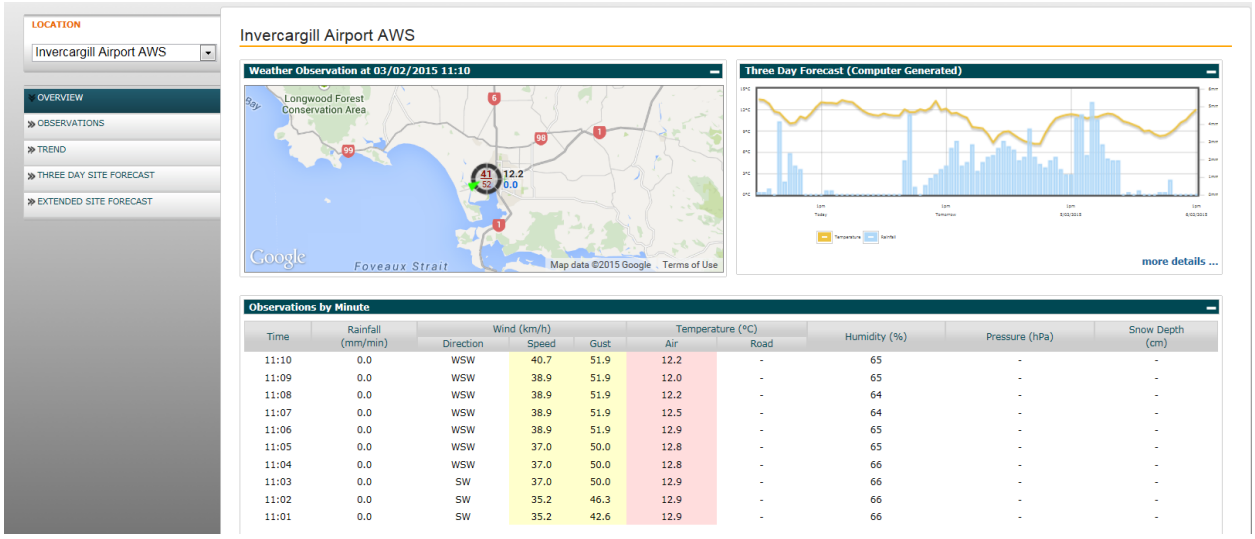
Met Connect

Use MetConnect in the first instance for forecast and actual weather. MetConnect is subscription based Met Service meteorological product that is available to all Environment Southland staff. Other meteorological websites are listed in the following annexes.

http://www.metconnect.co.nz/metconnect/index.php

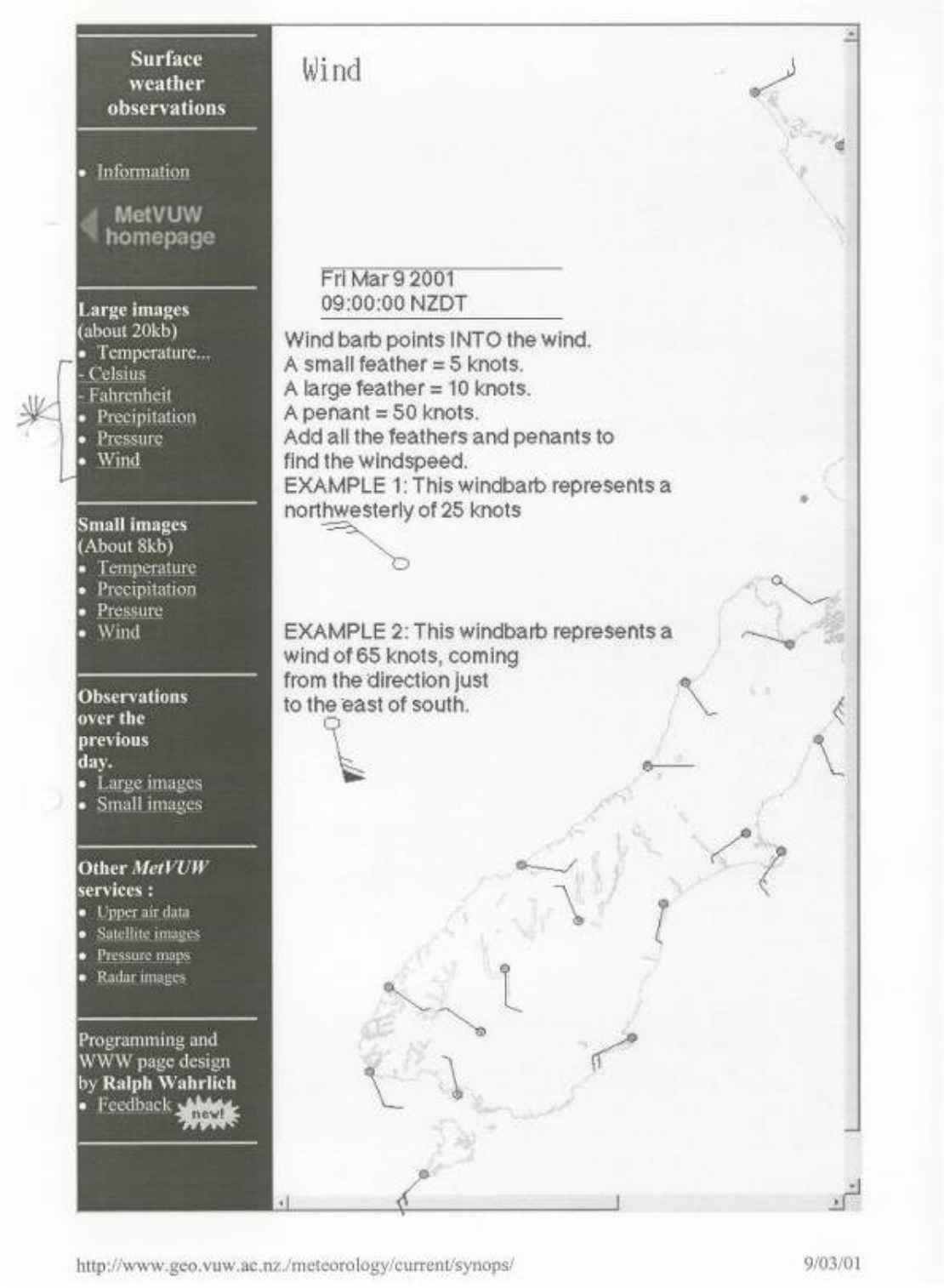


https://council.metconnect.co.nz/mango/overview/local/93845



Time	Rainfall (mm/min)	Wind (km/h) Direction	Speed	Gust	Temperature (°C) Air	Road	Humidity (%)	Pressure (hPa)	Snow Depth (cm)
11:10	0.0	WSW	40.7	51.9	12.2	-	65	-	-
11:09	0.0	WSW	38.9	51.9	12.0	-	65	-	-
11:08	0.0	WSW	38.9	51.9	12.2	-	64	-	-
11:07	0.0	WSW	38.9	51.9	12.5	-	64	-	-
11:06	0.0	WSW	38.9	51.9	12.9	-	65	-	-
11:05	0.0	WSW	37.0	50.0	12.8	-	65	-	-
11:04	0.0	WSW	37.0	50.0	12.8	-	66	-	-
11:03	0.0	SW	37.0	50.0	12.9	-	66	-	-
11:02	0.0	SW	35.2	46.3	12.9	-	66	-	-
11:01	0.0	SW	35.2	42.6	12.9	-	66	-	-

Annex 5.4.3


Surface weather observations
• Information
MetVUW homepage
Large images (about 20kb)
• Temperature...
- Celsius
- Fahrenheit
• Precipitation
• Pressure
• Wind
Small images (About 8kb)
• Temperature
• Precipitation
• Pressure
• Wind
Observations over the previous day.
• Large images
• Small images
Other MetVUW services :
• Upper air data
• Satellite images
• Pressure maps
• Radar images
Programming and WWW page design by Ralph Wahrlich
• Feedback
new!
Wind
Fri Mar 9 2001
09:00:00 NZDT
Wind barb points INTO the wind.
A small feather = 5 knots.
A large feather = 10 knots.
A penant = 50 knots.
Add all the feathers and penants to find the windspeed.
EXAMPLE 1: This windbarb represents a northwesterly of 25 knots
EXAMPLE 2: This windbarb represents a wind of 65 knots, coming from the direction just to the east of south.
http://www.geo.vuw.ac.nz./meteorology/current/synops/
9/03/01

Annex 5.4.4

Real time local marine weather.

Refer to Marine VHF Channel 23

Wind information for Puysegur, Ruapuke Island, Centre Island (Rarotoka)



Marine weather on air

By **JARED MORGAN**

SOUTHLAND mariners can now receive the latest marine weather information 24 hours a day by simply turning on their marine radio.

The service, Coastguard NowCasting, has been live for a month, initially in a testing phase before going fully operational, and provides real-time spoken information on weather in Foveaux Strait, and broadcasts the updates continuously on marine VHF radio channel 23.

Coastguard Riverton professional volunteer and Coastguard New Zealand president Ian Coard said the service would help boaties to make better decisions and keep them safer on the water.

"Everything that can be done to enhance safety on the water has to be a good thing," he said.

Set up by volunteers from Riverton and Bluff coastguards, the service provides up-to-the-minute local marine wind strength and direction from coastal sites at Southwest Point on Stewart Island, and Puysegur Point and Centre Island in the west of the Foveaux Strait, he said.

Information from a further installation at Ruapuke Island (Foveaux Strait East) will be added in the new year when communications links were finalised, Mr Coard said. The continuous broadcast includes marine forecasts, safety messages from the regional council, police and coastguard as needed and, most importantly, wind information.

Initial coverage reports had shown the broadcast could be heard over a wide area, Mr Coard said.

He thanked MetService, Team Talk Ltd, ASI Communications, the Tangata Whenua of Centre and Ruapuke Islands and the volunteers of the Coastguard Southland Air Patrol for their help in getting the service off the ground.

jared.morgan@sti.co.nz

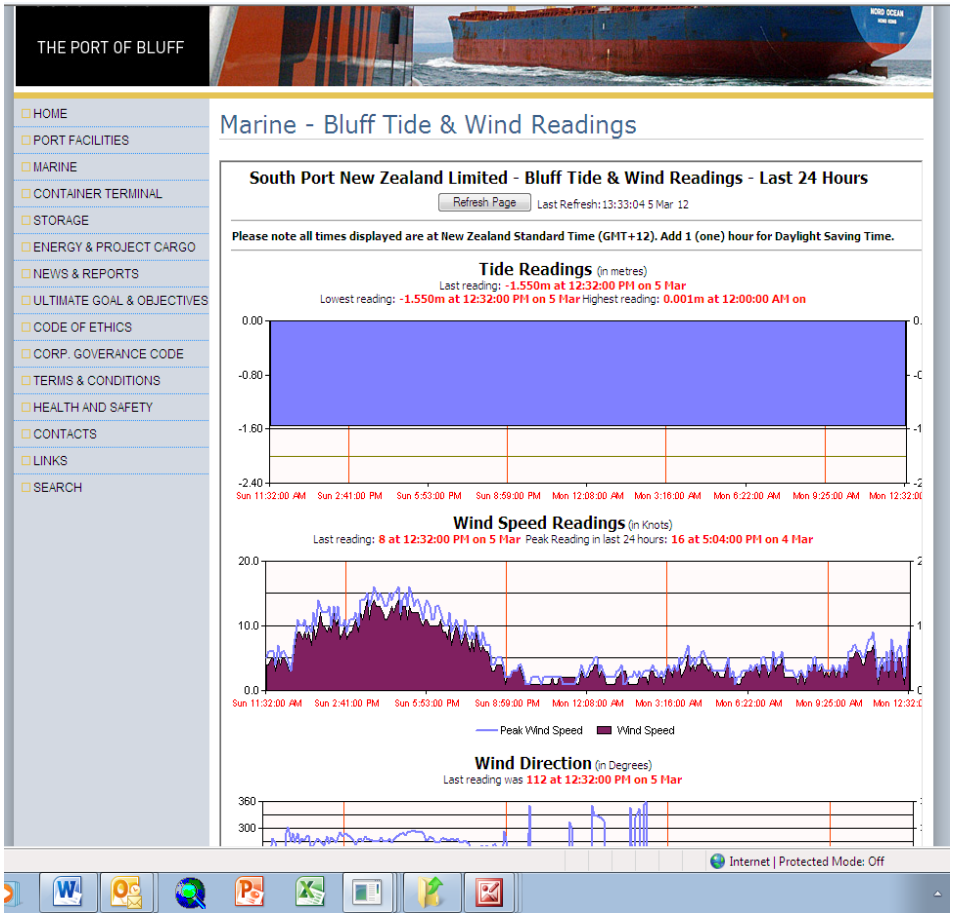
2009

Annex 5.4.5

Wind at South Port, Bluff

http://www.southport.co.nz/facilities-and-services/marine-services/wind-and-tide-conditions

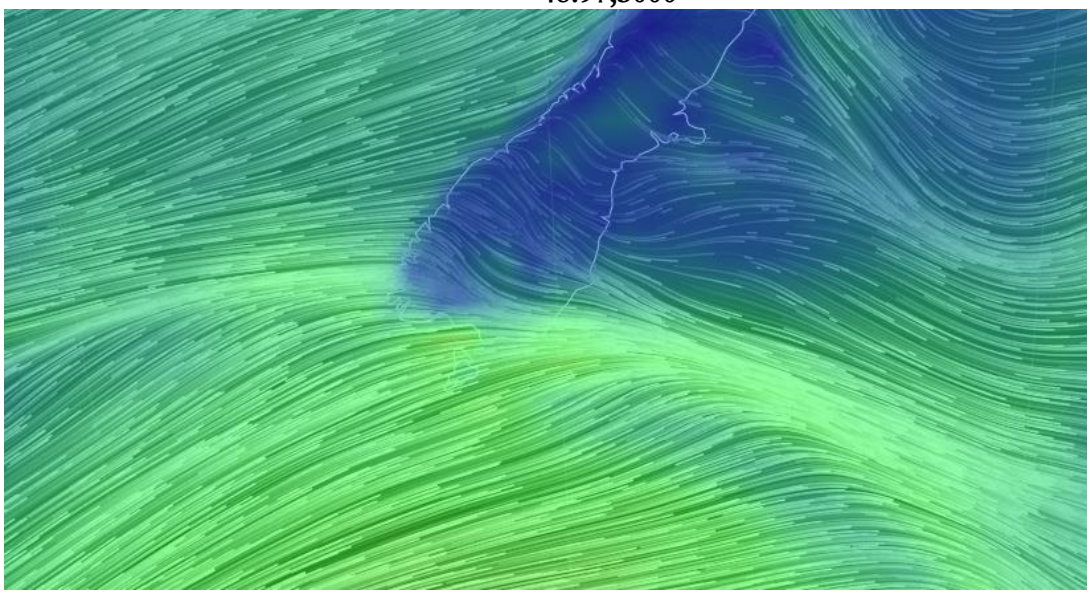
Access is also available to South Ports real time wind, sea level, water temperature and current data network http://neon.niwa.co.nz/logon.aspx?logoff=1 (log on and password protected) via the Regional Harbourmaster or his deputy.



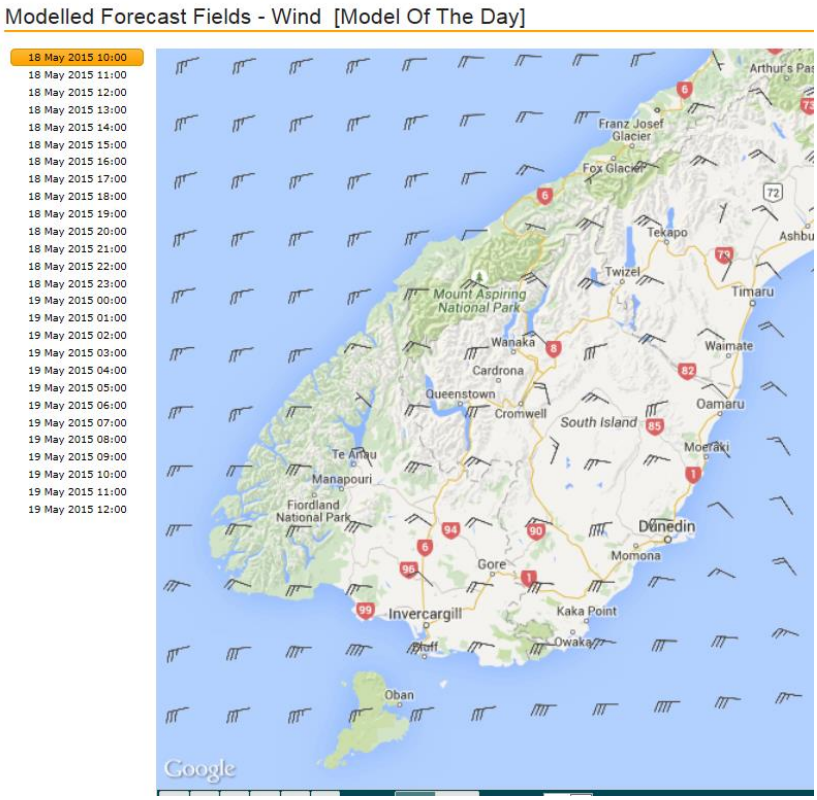
Annex 5.4.6

Regional Wind

http://earth.nullschool.net/#current/wind/surface/level/orthographic=-186.12,-48.97,3000



https://council.metconnect.co.nz/mango/overlay-player/national/57



5.5 Water Composition

The Low-Salinity-Layer in Doubtful Sound

Prepared for

Meridian Energy Ltd

by

Mark Gibbs, Ben Tuckey,
and Sara Hatton

Cawthron Institute
98 Halifax Street East
Private Bag 2
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NEW ZEALAND

Phone: +64.3.548.2319
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Email: info@cawthron.org.nz

Information contained in this report may not be used without the prior consent of the client

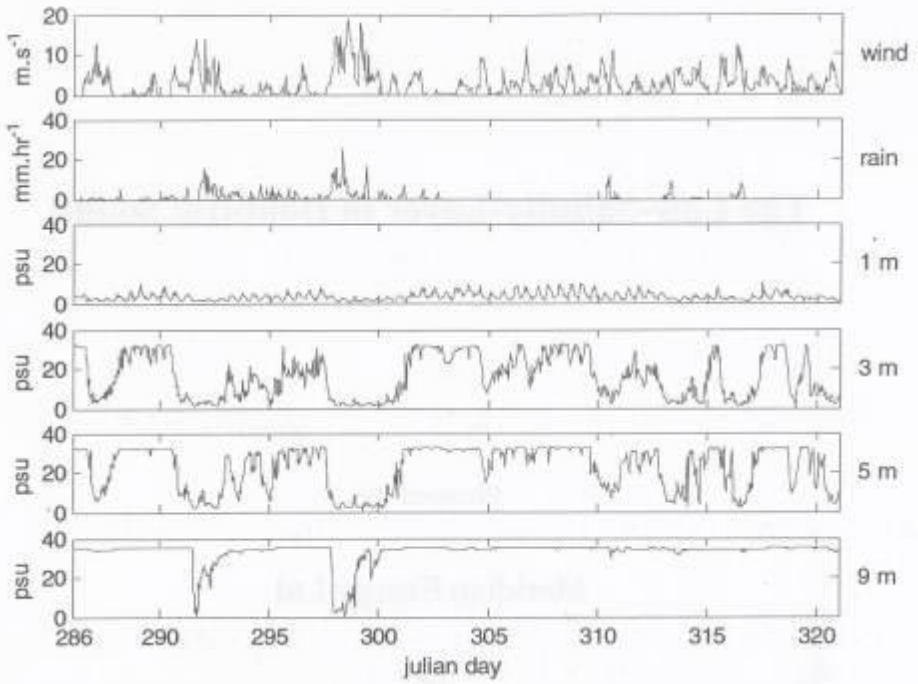


Figure 5. Time series of wind (top frame), rainfall (2nd frame) and near-surface salinities (lower frames) from mooring M5 in 1998.

3.3 What causes major LSL deepening events?

The measurements shown in Figure 5 reveal that the LSL can change in structure and behaviour over short periods of time. Initially these major deepening events were thought to be associated with changes to the tailrace inflows. When this proved incorrect the amount of rainfall looked to be the culprit. However, extensive investigations involving analyses of the monitoring data, and the application of several models, revealed that these deepening events were primarily in response to strong up-fiord directed wind events slowing or reversing the prevailing outflowing LSL. Freshwater then 'piles' up at the head of the fiord during these events; this process is shown in schematic form in Figure 6. Results of these investigations may be seen in Gibbs *et al* (2000) and Gibbs (2001) (see Appendices).

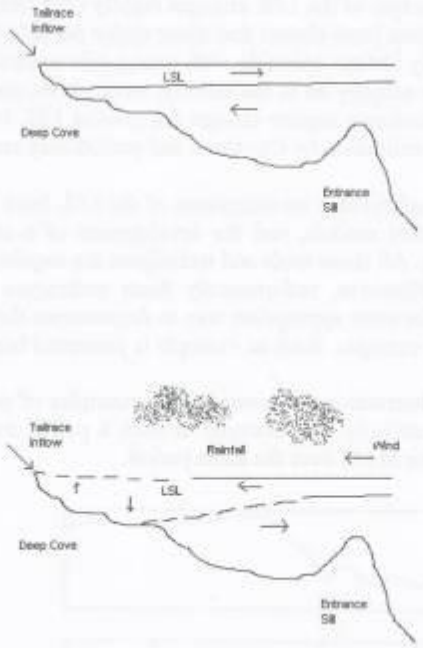


Figure 6. Schematic diagrams showing the prevailing estuarine circulation (upper diagram) and storm surge conditions when the LSL deepens (lower diagram).

This connection is also illustrated in the top two diagrams in Figure 5 that show the occurrence of winds and rains in the region over the same 36-day period. The deepening events shown in the lower diagrams coincide with the wind (and rain) events in the upper frames. Figure 7 shows the salinities at 5 m and 9 m at the head of Milford Sound over the same period. Interestingly, the same wind and rain events occurred in Milford Sound and the Milford LSL deepened accordingly.

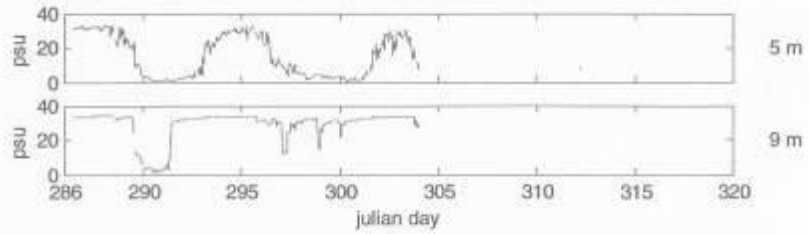


Figure 7. Time series of salinity at particular depths at mooring M1 in Milford Sound.

3.4 The role of the Manapouri tailrace discharge

The data collected under the Meridian monitoring programme (sub-contracted to the University of Otago) has revealed that the structure of the LSL changes rapidly over timescales of hours to days. Furthermore, analyses of these data have shown that these major perturbations are associated with strong wind events, which nearly always coincide with strong rain events. The obvious questions then arise: what does the tailrace actually do to the salinity, temperature and currents? Furthermore, how will a possible amended discharge regime change the present LSL behaviour? Both of these questions are presently under investigation by Cawthron and preliminary results are presented here.

As highlighted above, the past and present investigations of the LSL have involved the analysis of data, the development of statistical models, and the development of a comprehensive numerical hydrodynamic circulation model. All these tools and techniques are required in order to understand the 'mechanics' of the LSL. However, unfortunately these techniques tend to be technically complex and therefore perhaps the most appropriate way to demonstrate the influence of the present tailrace is through a 'case study' example. Such an example is presented here.

The monitoring data contains observations of a number of examples of periods of time when the tailrace discharge changed dramatically. An example of such a period may be seen in Figure 8. Figure 9 shows the LSL behaviour at M5 over the same period.

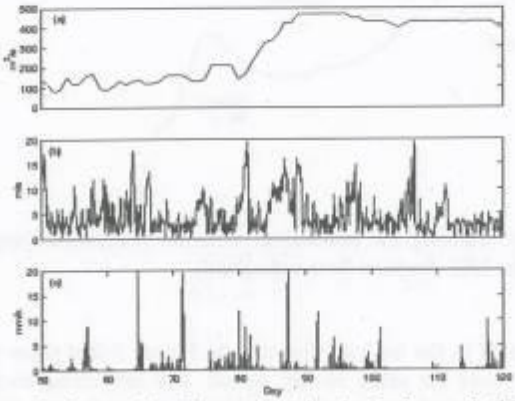


Figure 8. Tailrace discharge (a), Secretary Island wind speed (b) and rainfall (c) during the observation period.

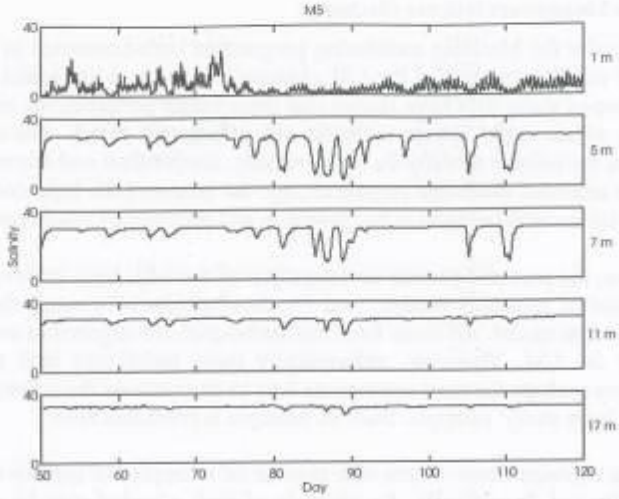


Figure 9. Time series of salinity at a number of depths at mooring M5 in Deep Cove.

Comparison of these figures suggests that a number of changes occurred after the tailrace discharge increased on Day 80. The most noticeable change is at 1m depth at M5 (Deep Cove). Inspection of the top frame in Figure 9 shows that the mean, and more importantly, the variability of the salinity decreased after the tailrace discharge increased. Whilst the mean salinity at 1 m was reduced by only around 2 PSU, the range of salinities (variability) decreased substantially. Figure 10 shows salinity data over the same period from mooring M2, in Thompson Sound (Figure 1). Inspection of this Figure shows that little obvious change in the salinity occurred after the tailrace discharge increased, with the exception of at 1 m depth, where the salinity became more variable. However, the large changes in the salinity do coincide with strong wind events. Although more detailed investigations have shown that the tailrace acts somewhat to depress the mean salinity at these outer fiord locations.

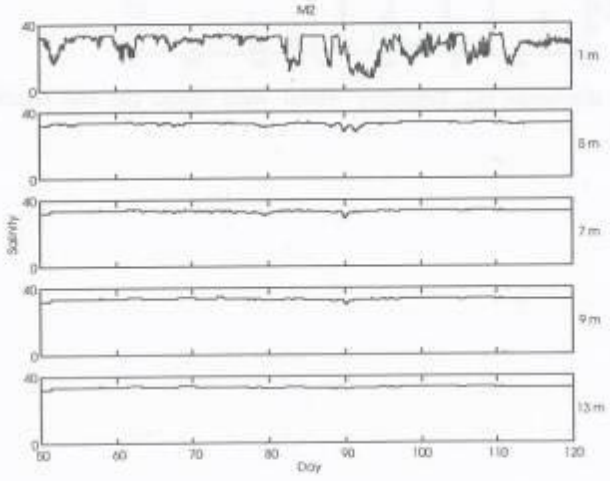


Figure 10. Time series of salinity at particular depths at mooring M2 in Thompson Sound.

Detailed composition of seawater at 3.5% salinity

Element	At.weight	ppm	Element	At.weight	ppm
Hydrogen H2O	1.00797	110,000	Molybdenum Mo	0.09594	0.01
Oxygen H2O	15.9994	883,000	Ruthenium Ru	101.07	0.0000007
Sodium NaCl	22.9898	10,800	Rhodium Rh	102.905	.
Chlorine NaCl	35.453	19,400	Palladium Pd	106.4	.
Magnesium Mg	24.312	1,290	Argentum (silver) Ag	107.870	0.00028
Sulfur S	32.064	904	Cadmium Cd	112.4	0.00011
Potassium K	39.102	392	Indium In	114.82	.
Calcium Ca	10.08	411	Stannum (tin) Sn	118.69	0.00081
Bromine Br	79.909	67.3	Antimony Sb	121.75	0.00033
Helium He	4.0026	0.0000072	Tellurium Te	127.6	.
Lithium Li	6.939	0.170	Iodine I	166.904	0.064
Beryllium Be	9.0133	0.0000006	Xenon Xe	131.30	0.000047
Boron B	10.811	4.450	Cesium Cs	132.905	0.0003
Carbon C	12.011	28.0	Barium Ba	137.34	0.021
Nitrogen ion	14.007	15.5	Lanthanum La	138.91	0.0000029
Fluorine F	18.998	13	Cerium Ce	140.12	0.0000012
Neon Ne	20.183	0.00012	Praesodymium Pr	140.907	0.00000064
Aluminium Al	26.982	0.001	Neodymium Nd	144.24	0.0000028
Silicon Si	28.086	2.9	Samarium Sm	150.35	0.00000045
Phosphorus P	30.974	0.088	Europium Eu	151.96	0.0000013
Argon Ar	39.948	0.450	Gadolinium Gd	157.25	0.0000007
Scandium Sc	44.956	<0.000004	Terbium Tb	158.924	0.00000014
Titanium Ti	47.90	0.001	Dysprosium Dy	162.50	0.00000091
Vanadium V	50.942	0.0019	Holmium Ho	164.930	0.00000022
Chromium Cr	51.996	0.0002	Erbium Er	167.26	0.00000087
Manganese Mn	54.938	0.0004	Thullium Tm	168.934	0.00000017
Ferrum (Iron) Fe	55.847	0.0034	Ytterbium Yb	173.04	0.00000082
Cobalt Co	58.933	0.00039	Lutetium Lu	174.97	0.00000015
Nickel Ni	58.71	0.0066	Hafnium Hf	178.49	<0.000008
Copper Cu	63.54	0.0009	Tantalum Ta	180.948	<0.0000025
Zinc Zn	65.37	0.005	Tungsten W	183.85	<0.000001
Gallium Ga	69.72	0.00003	Rhenium Re	186.2	0.0000084
Germanium Ge	72.59	0.00006	Osmium Os	190.2	.
Arsenic As	74.922	0.0026	Iridium Ir	192.2	.
Selenium Se	78.96	0.0009	Platinum Pt	195.09	.
Krypton Kr	83.80	0.00021	Aurum (gold) Au	196.967	0.000011
Rubidium Rb	85.47	0.120	Mercury Hg	200.59	0.00015
Strontium Sr	87.62	8.1	Thallium Tl	204.37	.
Yttrium Y	88.905	0.000013	Lead Pb	207.19	0.00003
Zirconium Zr	91.22	0.000026	Bismuth Bi	208.980	0.00002
Niobium Nb	92.906	0.000015	Thorium Th	232.04	0.0000004
			Uranium U	238.03	0.0033
			Plutonimu Pu	(244)	.

Note! ppm= parts per million = mg/litre = 0.001g/kg
source: Karl K Turekian: Oceans. 1968. Prentice-Hall

http://www.new-life.net/

ELEMENTS IN SEA WATER

A. Demayo

The elements in sea water are listed in decreasing average concentration. These are average concentrations and there will be variations in composition as a function of the location where the sample was collected.

Element	Concentration (mg/l)	Element	Concentration (mg/l)	Element	Concentration (mg/l)
Oxygen	8.57×10^{0}	Iron	1×10^{-1}	Selenium	9×10^{-4}
Hydrogen	1.08×10^{1}	Iodine	$\mathrm{Cl} \times 10^{-1}$	Germanium	7×10^{-5}
Chlorine	1.90×10^{1}	Molybdenum	1×10^{-2}	Xenon	3.2×10^{-4}
Sodium	1.05×10^{1}	Zinc	1×10^{-2}	Chromium	3×10^{-4}
Magnesium	1.35×10^{0}	Nickel	5.4×10^{-3}	Thorium	5×10^{-4}
Sulfur	8.83×10^{0}	Arsenic	3×10^{-3}	Gallium	3×10^{-4}
Calcium	4.00×10^{0}	Copper	3×10^{-3}	Mercury	3×10^{-5}
Potassium	3.80×10^{0}	Tin	3×10^{-3}	Lead	3×10^{-5}
Bromine	6.5×10^{-2}	Uranium	3×10^{-3}	Zirconium	2.2×10^{-4}
Carbon	2.8×10^{-2}	Krypton	2.5×10^{-4}	Bismuth	1.7×10^{-5}
Strontium	8.1×10^{-2}	Manganese	2×10^{-2}	Lanthanum	1.2×10^{-4}
Boron	4.6×10^{-2}	Vanadium	2×10^{-2}	Gold	1.1×10^{-5}
Silicon	3×10^{0}	Titanium	1×10^{-2}	Niobium	1×10^{-4}
Fluorine	1.3×10^{0}	Cesium	5×10^{-4}	Thallium	$<1 \times 10^{-4}$
Argon	6×10^{-1}	Cerium	4×10^{-4}	Hafnium	$<8 \times 10^{-5}$
Nitrogen	5×10^{-1}	Antimony	2.3×10^{-4}	Helium	6.9×10^{-6}
Lithium	1.8×10^{-1}	Silver	3×10^{-4}	Selenium	$<4 \times 10^{-4}$
Rubidium	1.2×10^{-1}	Yttrium	3×10^{-4}	Tantalum	$<2.5 \times 10^{-4}$
Phosphorus	7×10^{-2}	Cobalt	2.7×10^{-4}	Beryllium	6×10^{-7}
Iodine	6×10^{-2}	Neon	1.4×10^{-4}	Protactinium	2×10^{-9}
Barium	3×10^{-2}	Cadmium	1.1×10^{-4}	Radium	6×10^{-11}
Aluminum	1×10^{-2}	Tungsten	1×10^{-4}	Radon	6×10^{-16}

Taken from the Handbook of Chemistry & Physics 65th Edition CRC Press.

THE pH OF NATURAL MEDIA AND ITS RELATION TO THE PRECIPITATION OF HYDROXIDES

Reprinted from "Principles of Geochemistry" (1952) with the permission of Brian Mason, author, and John Wiley and Sons, publishers.

pH	Precipitation of hydroxides	Natural media	pH
11	Magnesium		11
10		Alkali soils	10
9			9
8	Bivalent manganese		8
7		Seawater	8
7	Bivalent iron	River water	7
6	Zinc copper	Rain water	6
5	Aluminum		5
4		Peat water	4
3	Trivalent iron	Mine waters	3
2		Acid thermal springs	2
1			1

PROPERTIES OF THE EARTH'S ATMOSPHERE AT ELEVATIONS UP TO 160 KILOMETERS

The average atmosphere up to 160 km based on pressure and density data obtained on rocket flights above White Sands, New Mexico.
Havens, Koll, and LaGow, Journal of Geophysical Research, March, 1952.

Altitude km above sea level	Pressure mm Hg	Density gm/meter³	Temperature °K (N_2, O_2) M = 29	Temperature °K (N_2, O) M = 24	Velocity of Sound m. sec	Mean Free Path cm (N_2)
0	760	1220	290		343	6.5×10^{-6}
10	210	425	230		310	1.9×10^{-5}
20	42	92	210		295	8.6×10^{-5}
30	9.5	19	235		315	4.2×10^{-4}
40	2.4	4.3	260		325	1.8×10^{-3}
50	7.5×10^{-1}	1.3	270		330	6.1×10^{-3}
60	2.1×10^{-1}	3.8×10^{-1}	260		325	2.1×10^{-2}
70	5.4×10^{-2}	1.2×10^{-1}	240		395	6.6×10^{-2}
80	1.0×10^{-2}	2.2×10^{-2}	190		280	3.2×10^{-1}
90	1.9×10^{-3}	4.0×10^{-3}	210		295	2.0
100	4.2×10^{-4}	8.0×10^{-4}	240		315	10.0
110	1.2×10^{-4}	2.0×10^{-4}	270	220	330	40.0
120	3.5×10^{-5}	5.0×10^{-5}	330	230	370	1.5×10^{1}
130	1.5×10^{-5}	2.0×10^{-5}	390	320	400	4.0×10^{1}
140	7×10^{-6}	7.0×10^{-6}	490	370	430	1.0×10^{2}
150	3×10^{-6}	3.0×10^{-6}	510	420	440	2.5×10^{2}
160	2×10^{-6}	1.3×10^{-6}	370	470	480	5.0×10^{2}

VELOCITY OF SEISMIC WAVES

Depth km	Longitudinal or condensational km/sec.	Transverse or distortional km/sec
0–20	5.4 –5.6	3.2
20–45	6.25–6.75	3.5
1300	12.5	6.9
2400	13.5	7.5

ATMOSPHERIC AND METEOROLOGICAL DATA

Total mass of the atmosphere, estimated by Eckholm, 5.2×10^{21} g, 11.4×10^{21} pounds, 5.70×10^{21} tons.
Evidence of extent: twilight, 63 km, 39 mi.; meteors, 200 km, 124 mi.; aurora 44–360 km, 27–224 mi.

*Distance to Earth.

F-149

■ 98 HALIFAX ST EAST
ZEALAND ■ TEL 03 548 2319
■ PRIVATE BAG 2, NELSON, NEW
■ FAX 03 546 9464

FAX MESSAGE:

CAWTHRON

DATE: 6 SEPTEMBER, 1993

TO: Graham Mackenzie

ORGANISATION: Southland Regional Council

FAX NUMBER: 03 21 58081

NO. OF PAGES: 1

SUBJECT: Phytoplankton bloom at Oreti beach

Dear Graham,

The samples from Oreti Beach arrived this morning. I forgot to tell you that to get things delivered on a Saturday you have to expressly specify this otherwise they sit in the courier office until Monday. It hasn't mattered in this case but it is worth bearing in mind for the future.

The samples contained very high numbers of diatoms mainly the species *Asterionellopsis glacialis* (previously called *Asterionella japonica*). The cell numbers of this species were >1.5 x10^8 cells / litre. This is exceptionally high, I have never seen a population as numerous as this. There are also a couple of other diatoms in the assemblage, most notably the colonial diatom *Chaetoceros socialis*. All these organisms are completely harmless and in fact are an excellent food source for Toheroas. I cannot say why this bloom has occurred though it is almost certainly a natural event and I would guess it is probably not uncommon in this area. Massive blooms of diatoms like this frequently occur along surf beaches along the West Coast of the North Island.

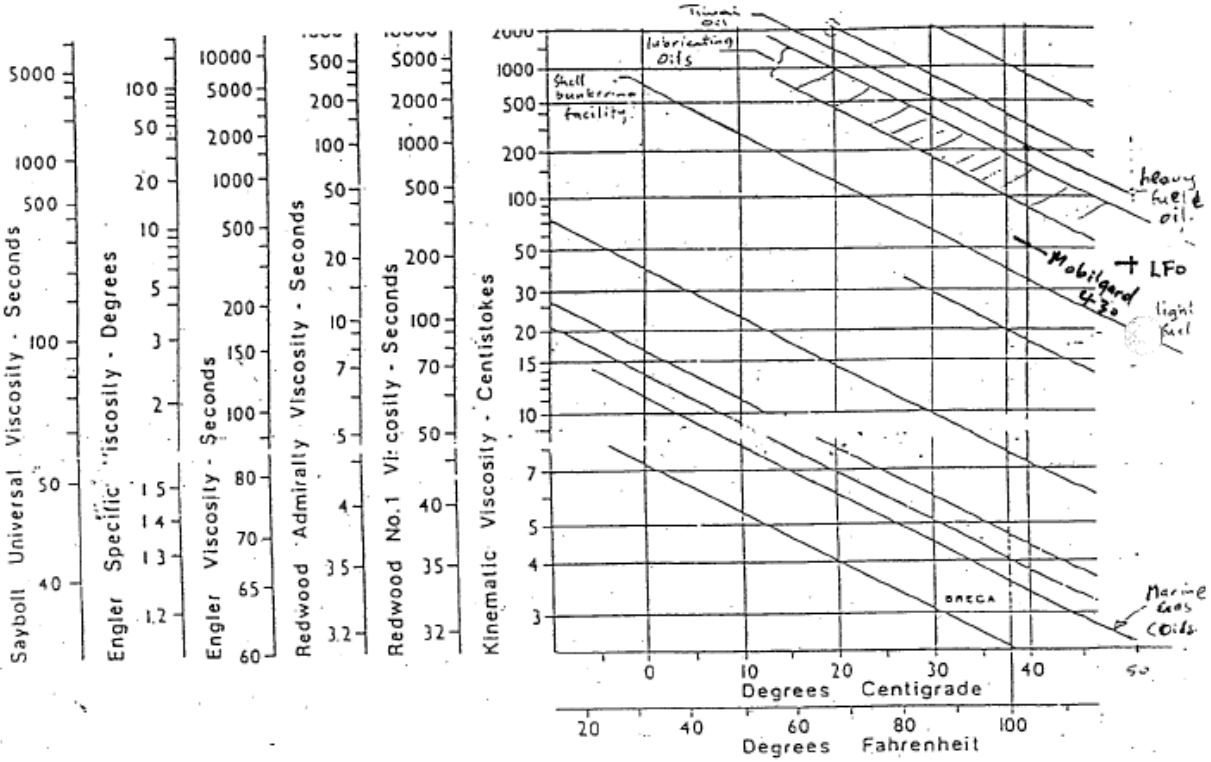
I hope this information is useful to you, I wish that the identification of blooms were always as simple as this one.

Regards,

Lincoln Mackenzie

Annex 5.6 – Viscosities of various oils in Southland

Viscosity Chart for Southland Oils



Notes:

1. Other oils can be plotted by entering a known viscosity value at the relevant temperature (see Table 1) a line parallel to existing ones.
2. Oils with viscosities exceeding 2000 centistokes at ambient temperature (for example Medium Fuel O 20°C) are unlikely to be amenable to dispersants.
3. Gas Oil is also known as Light Diesel or No. 2 Fuel Oil (ASTM nomenclature) and ranges from 30-36 seco No. 1 at 100°F.
4. Medium Fuel Oil is also known as No. 4 Fuel Oil (ASTM nomenclature) and ranges from 900-1500 seconds Redw No. 1 at 100°F.
5. Heavy Fuel Oil is also known as Bunker C or No. 6 Fuel Oil (ASTM nomenclature) and ranges from seconds Redwood No. 1 at 100°F.

Note: For all intents & purposes marine gas oil is diesel & diesel is marine gas oil.

NZ Aluminium Smelters Heavy Fuel Oil – Specifications

SCHEDULE "A"

SPECIFICATION OF FUEL OIL

	LIMITS	TESTING PROCEDURE
Specific Gravity at 15.5°C(kg/L)	0.980 maximum	ASTM D.1298
Flash Point P.M.C.C. (°C)	65 minimum	ASTM D. 93
Kinematic Viscosity at 40°C Centistokes	200.0 maximum	ASTM D445
Pour Point (°C)	10 maximum	ASTM D. 97
Sulphur, total (% mass)	3.00 maximum	ASTM D4294
Ash, total (% mass)	0.100 maximum	ASTM D. 482
Sediment, by extraction (% mass)	0.150 maximum	ASTM D. 473
Gross Calorific value (KJ/kg gross)	*43,000 minimum	USNB No. 97 Latest Issue
Strong Acid Number (mg KOH/g)	Nil	ASTM D. 974
Vanadium (V) mg/kg	100 maximum	IP 288
Sodium (Na) mg/kg	50 maximum	IP 288
Water, by distillation (% vol)	0.75 maximum	ASTM D. 95

(* See Clause 8.3)

All sampling and testing shall be completed utilising the ASTM-IP procedures specified above, or those specified in the most recent Standards Manual published by the American Society for Testing and Materials

Marine Diesel Engine Lubricating Oils

PHYSICAL AND CHEMICAL PROPERTIES OF OIL

TYPICAL VALUES

Automotive Gas Oil (AGO) - diesel fuel

AGO is a combustible liquid. Dangerous Goods Class 3 (c). Its toxicity is low but excessive skin contact and breathing of vapours should be avoided.

Density at 15 °C, kg/litre	0.831
Flash Point, PMCC, °C	79
Viscosity, Kinematic at 40 °C, cSt	2.92
Distillation Range, °C:	
Initial Boiling Point	175
10% Recovered	207
50% Recovered	256
90% Recovered	343
Final Boiling Point	360

Fuel Oil Light / Fuel Oil Heavy

Fuel Oils Light and Heavy are both combustible liquids, Dangerous Goods Class 3(c).

	Fuel Oil Light	Fuel Oil Heavy
Density, at 15 °C, kg/litre	0.915	0.951
Flash Point, PMCC, °C	76	95
Viscosity, Kinematic at 50 °C, cSt	26.8	150
Pour Point, °C	-12 (-6 max)	21 (27 max)

Marine Diesel Engine Lubricating Oils

	SAE Grade 30	SAE Grade 40
Density, at 15 °C, kg/litre	0.890 - 0.902	0.902 - 0.908
Flash Point, COC, °C	235 - 260	250 - 270
Pour Point, °C	-18 - -15	-15 - -12
Viscosity, Kinematic at 40 °C, cSt	108 - 118	151 - 155

Volatile Oils: Petrol / Kerosene

	Leaded Petrol	Kerosene
Density, at 15 °C, kg/litre	0.7 - 0.77	0.816
Flash Point, (Method), °C	-40	52
Ignition Temperature, °C	450	249
Flammable Limits (%)	1.4 - 7.6	0.58 - 4.45
Viscosity, Kinematic at 40 °C, cSt	<1.4	1.2

Refer also to Material Safety Sheets and User's Guide (follow).

Dallas Bradley

From: Wong, Frank [FrWong@chevrontexaco.com]
Sent: Thursday, June 16, 2005 9:58 AM
To: Dallas Bradley
Subject: Fuel Oil Light

Dallas

The Industry specification you requested for Fuel Oil Light is provided below.

FUEL OIL - LIGHT 40 cSt

Property	Specification	Test Method
Density at 15°C, kg/L		
	max 0.974	
		D1298 or D4052
Viscosity - Kinematic at 50°C, cSt	max 40	
	min 14	D445
Pour Point °C	max -6	D97
Flash point, PMCC, °C	min 63	D93
Fire Point, °C	Min 93	D92
Sulphur, % mass	max 2.0	IP 242 or D4294
Micro carbon residue, % mass	max 12.0	D4530
Water, % vol	max 0.5	D95
Sediment, % mass	max 0.12	D473
Strong acid number, mg KOH/g		Nil D664 or D974
Spot Test	max 3	D4740
Total Sediment - existent, % mass		
- potential % mass	max 0.10	
	max 0.10	IP 375
		IP 390 and IP 375
Vanadium, mg/kg	max 150	IP 470
Sodium, mg/kg	max 50	IP 470
Aluminium + silicon, mg/kg	max 80	IP 377
Ash, % mass	max 0.10	D482

Annex 6

Memoranda of Understanding, Agreements and Delegation Documents

6.1 **Marine Pollution Investigation – Document of Authorisation (Delegation of Directors Powers to Regional Council staff)**

6.2 **Maritime NZ/Southland Regional Council Equipment Loan Agreement**

6.3 **Maritime NZ/Environment Southland MOU for Utilisation of Council Resources and Staff or Tier 3 Marine Oil Spill Preparedness and Response (National Response Team Members in particular)**

6.4 **Otago Regional Council/Environment Southland MOU**

6.5 **West Coast Regional Council/Environment Southland MOU**

6.6 **Department of Conservation/Environment Southland MOU**

6.7 **Council appointments of Regional On Scene Commanders and Financial Delegations**

6.8 **Meridian/Environment Southland Agreement for use of Meridian's 5.4 m boat at Deep Cove or West Arm**

6.9 **Maritime NZ letter of approval for this plan**

6.10 **Port Maintenance/ES Agreement for Supply of Services in Preparing for and responding to Marine Oil Spills**

1.11 **ES/South Port Oil Pollution Equipment Storage Agreement**

1.12 **Sub-Delegation from ES CEO to Dallas Bradley and Kevin O'Sullivan - various powers under the Maritime Transport Act & Marine Protection Rule 130B**

Annex 6.1

Directors delegations (Investigation and Entry)

These have all expired – emailed Eva 3 Feb 2015 to see what is happening.

Director's delegations have been made to the following Environment Southland employees to exercise the powers under sections 235 (Authority to investigate), 235A (Additional Aauthority for purposes of investigation under Section 235) and 453 (Authorisation for general powers of entry) of the Maritime Transport Act 1994:

Dallas Bradley,
Graeme McKenzie,
Mark Hunter,
Ken Swinney,
Warren Tuckey,
Noel Hinton,
Kevin O'Sullivan,
Neil Cruickshank,

Each staff member has a laminated copy of the warrant. An electronic copy is located in T:\policy_planning\dallasb\Tier2 Plan 2011\Warrants-Director's Delegations and a certified hard copy is located on File 202/03/01 (June 2009)

Annex 6.2

MaritimeNZ/Environment Southland Equipment Loan Agreement

See below for a copy of the agreement signed in 2006.

See File 202/03/01 (May 2010) for a revised Schedule A (Equipment List and Sept 2009 for correspondence pertaining to the updated Schedule.

THIS EQUIPMENT LOAN AGREEMENT made this 18th day of December 2006

BETWEEN MARITIME NEW ZEALAND constituted pursuant to the provisions of the Maritime Transport Act 1993 and continued under the Maritime Transport Act 1994 ("Maritime NZ")

AND ENVIRONMENT SOUTHLAND, a body corporate under the Local Government Act 1974 (the "Council")

BACKGROUND

A. Maritime NZ owns the equipment more particularly described in Schedule A (the "equipment").

B. Maritime NZ agrees to lend and the Council agrees to borrow the equipment upon the terms and conditions set out in this Agreement.

THIS AGREEMENT RECORDS:

1. Definitions and Interpretation

1.1 Definitions

In this Agreement unless the context otherwise requires:

(a) "Equipment" means each (and any) individual item of equipment described in Schedule A. Schedule A will constitute a consolidated record of the equipment loaned by Maritime NZ and borrowed by the Council, as amended in writing from time to time.

(b) "Maritime NZ" means Maritime NZ and its successors, assigns and where the context permits the employees and agents of Maritime NZ.

(c) "Council" means the Council and its successors, assigns and where the context permits the employees and agents of the Council.

(d) "Consumables" means each (and any) individual item of equipment described in Table 2 of Schedule A.

1.2 Interpretation

In this Agreement:

(a) The Schedules to this Agreement shall have the same effect as if set out in the body of this Agreement.

(b) Clause headings are inserted for reference only and shall not affect the interpretation of this Agreement.

(c) Words importing the singular include the plural and vice-versa.

(d) "month" means calendar month.

2. Loan Terms and Charges

2.1 Loan

In consideration of payment of the sum of $1.00, receipt of which is hereby acknowledged by Maritime NZ, Maritime NZ shall lend to the Council and the Council will take on loan the equipment for the term and on the terms and conditions contained in this Agreement.

2.2 The equipment shall be used by the Council only for the purposes outlined in "Schedule B" annexed hereto unless prior written consent is obtained from Maritime NZ for any additional or other use.

2.3 Duration

2.3.1 The term of the loan shall be 10 years commencing on the 10th day of August 2006 and expiring on the 10th day of August 2016 (the "expiration date").

2.3.2 The term of this Agreement may be extended by written agreement of the parties.

2.4 Termination

2.4.1 Notwithstanding clause 2.3 Maritime NZ may terminate this Agreement by giving three months written notice to the Council.

2.4.2 Upon the expiration date or upon earlier termination pursuant to clause 2.4.1 (the "termination date") and subject always to Maritime NZ's rights under clause 15 hereof the Council will permit Maritime NZ access to the equipment and provide Maritime NZ with reasonable assistance so that safe return of the equipment can be effected by the earlier of the expiration date or the termination date. Maritime NZ will pay the costs of return of the equipment.

3. Ownership of the Equipment

3.1 Maritime NZ retains full title to the equipment notwithstanding:

(a) the delivery of the equipment to the Council;

(b) the possession and use of the equipment by the Council;

(c) any temporary attachment of the equipment to any land or premises to facilitate the use of the equipment,

subject only to the rights of the Council as a mere bailee of the equipment with a right only to use the equipment in accordance with, and under, this Agreement.

3.2 The Council acknowledges that no option, proviso or representation express or implied, written or oral has been made by or on behalf of Maritime NZ to the Council that the equipment may be purchased from Maritime NZ by the Council or by any nominee of the Council at any time.

4. Insurance

4.1 Maritime NZ shall insure and keep the equipment insured at and for such amount or amounts and against such risks and contingencies and on such terms as Maritime NZ shall determine.

4.2 The insurances shall be taken out in the names of Maritime NZ and the Council for their respective rights and interests.

4.3 All such insurances shall be at the expense of Maritime NZ.

4.4 If the equipment is destroyed or damaged, and insurance money paid by the insurance company pursuant to any claim is, in the opinion of Maritime NZ, adequate to replace or repair the equipment, Maritime NZ shall apply the money for this purpose.

4.5 The Council shall forthwith notify Maritime NZ of the happening of any event in relation to the equipment against which the equipment is insured and the Council shall forthwith give such notice to the insurance company as well.

5. Affixation to Land

5.1 Other than for the purposes of marine oil spill exercises, maintenance and marine oil spill response, the Council shall not affix the equipment to land or premises unless Maritime NZ consents in writing to the affixation.

6. Delivery and Return

6.1 Upon delivery of any equipment under this Agreement the Council shall render such assistance as may be required to receive, move, unload, or install the equipment at the storage facility referred to below.

6.2 Maritime NZ shall arrange and pay for the delivery.

6.3 Upon the period of loan expiring or terminating, the provisions of clause 2.4.2 shall apply.

7. Storage of Equipment

7.1 The Council will store the equipment at the following location (the "storage facility"):

South Port N.Z. Ltd
Complex Store (Engineers Workshop)
Island Harbour
Bluff

7.2 The Council agrees that the storage facility shall be the only place the equipment will be located except when the equipment is:

(a) being deployed for any of the approved uses specified in Schedule B;

(b) under repair or being taken to or from repair;

(c) being delivered to or from Maritime NZ; or

(d) being used as instructed or agreed by Maritime NZ.

7.3 Storage Facility Maintenance

7.3.1 Maritime NZ agrees to enter into an agreement with a third party for the use of the storage facility. Notwithstanding the Council will use its best endeavours to ensure that the storage facility is at all times:

(a) secure against unauthorised entry;

(b) vermin-free and pest-free;

(c) clean;

(d) dry;

(e) enclosed from the weather; and

(f) not used for storage of any flammable, explosive or otherwise dangerous goods.

7.3.2 The equipment shall at all times be readily accessible to the Council and Maritime NZ and the Council will provide to Maritime NZ contact names, addresses and telephone numbers of Council employees, agents or representatives so as to ensure 24 hour access to the equipment by Maritime NZ.

7.3.3 The Council will provide to Maritime NZ current details of storage arrangements including a plan of the storage facility at which the equipment is stored. A copy of the said plan will be at all times prominently displayed in the storage facility.

7.3.4 The Council will give notice to Maritime NZ as soon as practicable after it becomes aware of any matter that requires rectification regarding the storage facility in order to ensure compliance with clause 7.3.1. Such matters may include any repairs, preventative and other maintenance, or other arrangements that may be necessary.

8. Maintenance of Equipment

8.1 Maritime NZ shall enter into an agreement with a third party for the quarterly maintenance of the equipment. Notwithstanding the Council will give notice to Maritime NZ as soon as practicable after it becomes aware of any matter that requires rectification regarding the maintenance of the equipment. Such matters may include any repairs, preventative and other maintenance, or other arrangements that may be necessary.

8.2 The Council will not permit any alteration to the equipment without Maritime NZ's prior written consent and any additions or improvements which shall be affected to the equipment and any accessories which shall be affixed to the equipment in accordance with such consent given by Maritime NZ shall become part of the equipment for the purposes of this Agreement.

9. Use of Equipment

9.1 The Council will operate the equipment in accordance with the operating procedures forwarded with the equipment, and any supplementary instructions given by Maritime NZ.

9.2 The Council shall comply with and shall ensure every operator of the equipment complies with the provisions of all statutes and all rules or regulations in force in relation to the equipment or its use and (where applicable) the premises upon which the equipment is situated or the occupation and use of those premises.

9.3 The Council shall not at any time permit the equipment to be operated by any person other than an agent or employee of the Council properly qualified, trained and, where applicable, licensed to operate the equipment and the Council and any agent or employee of the Council shall operate the equipment only for the purposes of and incidental to marine oil pollution response.

9.4 The Council shall at all times ensure that the equipment is used solely for the purposes intended by its manufacturer and in accordance with the manufacturer's instructions and (where applicable) in accordance with its rated capacity which shall not be exceeded.

9.5 After use of the equipment (whether for pollution control or otherwise) the Council shall ensure, where applicable, that the equipment is promptly:

(a) repaired;

(b) cleaned of all pollutants (including salt water);

(c) dried; and

(d) returned to the storage facility.

9.6 In the event that items of equipment (including consumables) are used for pollution control, and the Council intends to recover costs from a third party for that usage, the Council shall:

9.6.1 send written notice in writing to Maritime NZ of this intention, and

9.6.2 send full documentation of the use of the equipment in the clean-up operation, including log books.

9.7 Maritime NZ shall invoice the Council for the use of the equipment as soon as practicable upon receipt of the notice described in clause 9.6.

10. Consumables

10.1 Maritime NZ will provide the Council with dispersant and sorbent log sheets upon which the Council shall record all usage and replenishment of consumables.

10.2 The Council shall give written notice of the depletion of consumables by sending all relevant dispersant and log sheets ("notice of depletion") to Maritime NZ by facsimile as soon as practicable after consumables have been depleted.

10.3 Upon receipt of notice of depletion Maritime NZ will replenish consumables that have been depleted below target stock levels as is deemed necessary and appropriate by Maritime NZ.

10.4 The council shall notify Maritime NZ in writing as soon as practicable upon receipt of consumables delivered in accordance with clause 10.3.

11. Liens

The Council shall not without Maritime NZ's prior written consent suffer any encumbrance, charge or lien of any kind to arise or remain on the equipment or any part of the equipment.

12. No Dealings with Equipment

12.1 The Council shall not, without Maritime NZ's prior written consent, agree, attempt, offer, or purport to sell, assign, sublet, lend, pledge, mortgage, bail, let on hire or otherwise part with or attempt to part with personal possession of the equipment or otherwise deal with the equipment.

12.2 In the event that Maritime NZ gives written consent to the on-hire of the equipment, the on-hire agreement between the Council and the Hirer shall be entered into using the standard form agreement supplied by Maritime NZ to the Council for that purpose.

13. Indemnity

The Council shall indemnify and save harmless Maritime NZ against all damages, losses or liabilities which may arise in respect of the equipment, its use or operation by the Council or by any other party.

14. Inspection

The Council grants Maritime NZ the right at all times to:

(a) enter with its employees, agents and experts upon or into the premises where the equipment may be;

(b) inspect the state of repair of the equipment;

(c) carry out such tests on the equipment as may seem necessary to Maritime NZ;

(d) observe the use of the equipment;

(e) inspect any maintenance records with respect to the equipment; and

(f) do any act, matter or thing which may be required to give proper effect to the terms of this Agreement or to protect Maritime NZ's rights in the equipment.

15. Use of Equipment by Maritime NZ

Maritime NZ reserves the right to remove or redeploy temporarily or permanently part or all of the equipment referred to in Schedule A for the purpose of marine oil spill response, marine oil spill exercises and marine oil spill training and the Council will when requested to do so by Maritime NZ, assist in the redeployment of the equipment, inter alia, by giving advice and procuring transport arrangements. Maritime NZ agrees to reimburse the Council for its actual and reasonable expenses incurred in giving such assistance.

This Equipment Loan Agreement is

SIGNED on behalf of MARITIME NEW ZEALAND by:

SUSANNAH ADAIR STALEY — Name — Signature

Adrienne Yang Logan — Name — Signature

in the presence of:

Witness name — Signature

Witness Occupation:

Witness Address:

SIGNED on behalf of ENVIRONMENT SOUTHLAND by:

WARREN J THELEY — Name — Signature

Regional On Scene Commander / Director of Environmental Management

Name — Signature

in the presence of:

Witness name: Dallas Bradley — Signature

Witness Occupation: Planner

Witness Address: 120 Creti Road, Otatara, RD 9, Invercargill

SCHEDULE B

APPROVED USES

A. MARINE OIL SPILL RESPONSE.

B. MARINE OIL SPILL EXERCISES CONDUCTED IN THE REGION UNDER THE CONTROL OF THE COUNCIL.

C. MARINE OIL SPILL TRAINING.

D. MAINTENANCE

MARITIME NEW ZEALAND

MEMORANDUM OF UNDERSTANDING FOR THE UTILISATION OF COUNCIL RESOURCES AND STAFF FOR TIER 3 MARINE OIL SPILL PREPAREDNESS & RESPONSE

National response team members in particular.

Between	MARITIME NEW ZEALAND, a Crown Entity continued by the Maritime Transport Act 1994 ("MNZ")	And	ENVIRONMENT SOUTHLAND ("Council")

Background

A MNZ is a Crown entity under section 429 of the Maritime Transport Act 1994 with responsibility for providing effective marine pollution prevention and an effective marine oil pollution response system as part of an integrated and sustainable transport system.

B Within New Zealand, regional councils, plus those unitary authorities (district councils) with the powers and functions of a regional council, are as follows:

Northland Regional Council
Auckland Regional Council
Environment Waikato
Environment Bay of Plenty
Gisborne District Council
Hawke's Bay Regional Council
Horizons (Manawatu-Wanganui Regional Council)
Taranaki Regional Council
Wellington Regional Council
Marlborough District Council
Tasman District Council
West Coast Regional Council
Nelson City Council
Environment Canterbury
Environment Southland
Otago Regional Council
Chatham Islands Council

C MNZ enters this Memorandum of Understanding with regional councils with a view to addressing preparedness and response issues during a Tier 3 marine oil spill response, and in particular to enable the following:

- MNZ utilising council staff and resources located in the region of a spill;
- MNZ relocating and utilising council staff and resources from other regions; and
- MNZ training and exercising in preparedness for a Tier 3 Response
- raising, training and exercising of the National Response Team (members of which are drawn from MNZ-trained Regional Council spill responders).

D This standard form agreement does not apply to any council staff who have a separate individual oil spill response contract with MNZ.

1 Interpretation

Chief Executive means the Chief Executive or senior officer of the Council.

Director means the person who is for the time being the Director of MNZ under section 439 of the Maritime Transport Act 1994.

Health and Safety Coordinator means the person appointed by MNZ as a contractor to carry out the health and safety coordination under this MOU.

Incident Action Plan means a plan approved by the National On-Scene Commander and developed by the Incident Command Team to avoid, remedy or mitigate the adverse effects of a specific oil spill.

Incident Command Centre means the centre established by the Council's response team and referred to in clause 2.2.

Incident Command Team means the team that works within the **Incident Command Centre** under the NOSC and providing the detail for the field teams to rig equipment and prioritise placement

Marine Oil Spill Incident has the meaning in the Maritime Transport Act 1994, namely any actual or probable release, discharge, or escape of oil into the internal waters of New Zealand or New Zealand marine waters.

Media and Community Affairs Advisor means the person appointed as the Tier 3 Communications Adviser for MNZ.

MOU means this Memorandum of Understanding and any attachments.

National Marine Oil Spill Contingency Plan means the plan most recently prepared or reviewed under section 297 of the Maritime Transport Act 1994.

National On-Scene Commander (NOSC) means the National On-Scene Commander appointed under section 319 of the Maritime Transport Act l994.

National Response Team (NRT) means the team of oil spill responders selected and maintained by MNZ from Regional Council Teams to respond to Tier 3 marine oil spills (or Tier 2 spills when requested) as the 'first strike' capability that assists any region requiring Tier 3 capacity support.

Regional Marine Oil Spill Contingency Plan or **Tier 2 Plan** means a marine oil spill contingency plan prepared by a regional council and approved by the Director under section 292 of the Maritime Transport Act 1994 or prepared by the Director under section 295 of that Act.

Regional On-Scene Commander (ROSC) means the regional on-scene commander appointed under section 318 of the Maritime Transport Act 1994.

Tier 3 Response means a national response undertaken in accordance with the National Marine Oil Spill Contingency Plan and as designated by the Maritime Transport Act 1994.

2 Request for assistance

2.1 If MNZ seeks assistance from the Council in relation to a Tier 3 Marine Oil Spill Incident, MNZ's Director or the NOSC will make a request to the Chief Executive.

2.2 Usually, the Council's marine oil spill response team will have assembled and be coordinating the local response equipment and the setting up of the Incident Command Centre to deal with a local (Tier2) Marine Oil Spill Incident.

2.3 The Council marine oil spill response team will then be supplemented by the NRT led by MNZ.

2.4 A request under clause 2.1 may relate to a Tier 3 spill in another region which requires Council staff who are member(s) of the NRT to assist in a national response. MNZ coordinates the NRT membership usually drawn from Council staff to assist regions in responding to marine oil spills; there will also be annual advanced training and exercising given to team members with all costs being reimbursed by MNZ.

3 Provision of assistance

Smoothing the Transition from Tier 2 to Tier 3

3.1 During a Marine Oil Spill Incident, the Tier 2 Incident Command Team will assist the NOSC during the transition from Tier 2 to Tier 3 with the aim of continuing the response uninterrupted.

Clarification of Roles and Responsibilities

3.2 The roles and responsibilities of the Tier 3 Incident Command Team are detailed at Chapter 2 of the National Marine Oil Spill Contingency Plan. Generally the NRT will be activated and employed to fill managerial and command roles within this structure. Initially Council staff will staff the Incident Command Centre and field teams. Depending on availability and experience, these staff may then be replaced by the NRT members or remain in their roles. The importance of local Council staff is well recognised and the NOSC will liaise with the Council to ensure appropriate local personnel are filling team positions.

3.3 The regional harbourmasters will generally not be utilised in the Incident Command Team enabling normal navigational safety matters to reside with the Harbourmaster.

3.4 The role of the ROSC in the Tier 3 Incident Command Team and during the transition from Tier 2 to Tier 3 shall be determined and outlined by the NOSC. The NOSC will otherwise determine all roles and responsibilities.

3.5 A response termination plan will be developed for all Tier 3 incidents. The plan will include clarification of ongoing roles and responsibilities, including those of out-sourced or external Tier 3 responders when they leave the region. The roles and responsibilities will include media reports, monitoring, equipment, maintenance and cleaning, waste recycling and disposal, payment of accounts, and documentation

Availability of Staff and Resources

3.6 Council staff and resources requested under clause 2 (including the Incident Command Centre) identified in the Regional Marine Oil Spill Contingency (Tier 2) Plan will be made available to the NOSC on a reasonable request basis. The Council will also make other staff available on a reasonable request basis if required. In the event of any disagreement with respect to availability, the Chief Executive's decision will be final.

3.7 The Council will, at MNZ's cost, make staff available as required by MNZ to attend training and exercises run by MNZ in preparedness for a Tier 3 response.

Priority for Utilising Personnel

3.8 Staff and resources identified in the Tier 2 Regional Contingency Plan within the Council's region will, where appropriate for the task, be given priority for utilisation in the response.

Recall of Personnel

3.9 The Council reserves the right to recall staff as required to fulfil other Council duties. In such circumstances, the Council will endeavour to give MNZ at least 24 hours notice, so that replacement response personnel may be identified.

Employment Conditions

3.10 Any staff member of the Council made available as per clause 2 shall remain an employee of the Council.

3.11 Response personnel remuneration and employment conditions (including insurance) will generally be in accordance with the staff member's current Council employment contract. Appropriate staff roster and relief arrangements will be established as soon as possible after commencement of the response.

Occupational Safety and Health

3.12 The Tier 3 Health and Safety Coordinator is responsible for providing advice to ensure that the Incident Action Plan is developed and implemented in such a manner as to provide for the health and safety of all responders. The response must meet the requirements of the Health and Safety in Employment Act 1992.

3.13 The health and safety aspects of the Tier 3 Response will be integrated with the health and safety practices of the Council, through consultation with Council health and safety personnel. During a response, the NOSC shall be responsible for all health and safety aspects of that response.

Housekeeping

3.14 The Council will ensure that, where relevant, housekeeping, security, health and safety measures and communication systems are outlined to the Tier 3 Response personnel during an initial briefing, and if required during staff shift changes.

Business Continuity

3.15 The NOSC and Chief Executive will continually review personnel allocated to the Tier 3 response to ensure that both the response objectives are being appropriately met through Council resources and that Council business continuity is maintained in essential areas.

Council Compensation

3.16 Within two months of termination of the Tier 3 Response, the Council will provide MNZ with a schedule detailing all of the Council's costs incurred which attaches all receipts. This information will be used by MNZ for any cost recovery action taken against the spiller. All costs are to be shown GST inclusive.

3.17 MNZ recognises that utilising Council staff and resources in a response may result in extraordinary costs for the Council. Extraordinary costs to the Council (i.e. above the Council's budgeted cost) incurred or needing to be incurred to clear the backlog of work will be included in the Council's actual and reasonable costs submitted to MNZ.

3.18 MNZ shall reimburse the Council for all actual and reasonable documented costs, provided that the invoice is fully itemised. The due date of payment shall be twenty-one (21) days from receipt of an agreed, correctly rendered invoice.

3.19 More information about compensation payable to the regional councils providing assistance in Tier 3 marine oil spill preparedness and response can be found in the Oil Spill Preparedness and Response Guidelines; Prosecution and Cost Recovery publication.

Insurance Cover/Liabilities and Indemnity

3.20 Some protection from liability is provided to MNZ and the Council by section 327 of the Maritime Transport Act 1994, which is reproduced below.

Section 327 of the Maritime Transport Act 1994: Protection from Liability

"... no action or proceeding shall be brought against ... any regional council, or any On Scene Commander, to recover damages for any loss of or damage to property that is due directly or indirectly to a marine oil spill response having been taken, where loss or damage is caused by any person acting in good faith who takes or fails to take any action in the exercise or performance of his or her functions, duties, or powers under this part of the Act".

3.21 Each party waives all claims against the other and will notify its insurers of this waiver.

4 Exchange of information

4.1 The parties will freely exchange information as required to assist each other with oil spill response matters.

4.2 The parties acknowledge their respective obligations under the Official Information Act 1982 and the Local Government Official Information and Meetings Act.1987 and shall notify each other when shared information should be treated as confidential.

5 Media

5.1 In recognising the severity of a Tier 3 marine oil spill response, media will need to be carefully managed between the Council's needs and MNZ's needs.

5.2 In the first instance, all media enquiries must be referred to MNZ and the Incident Command Team (NOSC). The MNZ Media and Community Relations Advisor provides advice to the NOSC and develops the media and communications plan. The NOSC and/or Media and Community Relations Advisor will liaise with the Council Chief Executive (or nominated representative).to ensure the coordinated and effective management of media and community relations matters.

6 Review and amendment

6.1 The parties will review the operation of this MOU every three years.

6.2 This MOU may be amended at any time by mutual written consent of the parties.

7 Termination

7.1 Either party may terminate this MOU by giving written notice to the other party of its intention to terminate. This MOU will terminate 6 months after the date of service of notice.

8 Entry into effect

8.1 This MOU will come into effect on signature. Where the parties sign the MOU on different dates, the MOU will come into effect on the date of last signature.

Execution and date

Signed on:

Date: 2009

Signed on behalf of
Maritime New Zealand
in the presence of:

Catherine Taylor
Director

Witness signature:

Witness name: Sharyn Forty

Occupation: Executive Assistant

Address: 14 Whirinaki Crescent
Hrelavanga 5018

Signed on behalf of
Environment Southland
in the presence of:

Authorised signatory

Authorised signatory

Witness signature:

Witness name: Janice Bacon

Occupation: Executive & HR Coordinator

Address: Invercargill

Appendix

Documents relevant to this MOU and which provide further background and context are cited below:

- The New Zealand Marine Oil Spill Response Strategy
- National Marine Oil Spill Contingency Plan
- Regional Marine Oil Spill Contingency Plan
- Oil Spill Preparedness and Response Guidelines: Prosecution and Cost Recovery publication
- Part 23 of the Maritime Transport Act 1994

Memorandum of Understanding

Agreement between the Otago Regional Council and Environment Southland (the Southland Regional Council) regarding Regional Marine Oil Spill Response in the Otago and Southland regions

Statement

An efficient and effective response to Marine Oil Spills in Otago and Southland coastal waters demands a co-operative approach between neighbouring regional councils. As such, the Otago Regional Council and Environment Southland have agreed to the following:

- The respective qualified Regional On-Scene Commanders of each region will be on call to act as ROSC in the other region in the event of the nominated ROSC and alternate ROSC's of the host region being absent; and
- The trained marine oil spill response personnel (oil spill equipment operators, oil spill managers and oiled wildlife responders) from each region will be available to assist with a response in the other region.

Purpose

This arrangement has been established to:

1. Add strength, depth and resilience to Otago and Southland Regional Council's response capacity in dealing with marine oil spills.
2. Provide an effective back-up for the staff of each Council.
3. Allow an effective response to any major oil spill that overlaps or crosses the mutual regional boundary.
4. Effectively counter a major oil spill affecting a large portion of the regional coastline, and;
5. Counter any other situation that requires more resources than the host region has available.

Role and Liability of the Regional On-Scene Commander

The role of the On-Scene Commander is outlined in the respective **Regional Marine Oil Spill Contingency Plans.**

Protection from Liability (Section 327 of the Maritime Transport Act 1994)

"... no action or preceding shall be brought against...any regional council, or any On Scene Commander, to recover damages for any loss of or damage to property that is due directly or indirectly to a marine oil spill response having been taken, where the loss or damage is caused by any person acting in good faith who takes or fails to take any action in the exercise or performance of his or her functions, duties, or powers under this part of this Act"

4

8

Memorandum of Understanding

Terms of Agreement

1. It is recognised that due to the unpredictable nature of marine oil spills in the environment an effective marine oil spill response requires a co-operative approach between neighbouring Regional Councils.

2. It is agreed by all parties that should a spill cross the boundary between the Otago and Southland regions, the response action will be governed and controlled by the ROSC in the region in which the spill originated (the "host" region).

3. It is agreed that in the event that none of the "host" Regional Council's ROSC's are available (due to whatever reason) to respond to a spill in its region, the ROSC from the other regional council and/or his/her alternates will have delegated authority (by specific appointment) to act as ROSC in the host region (including the authority to expend up to $25,000). Any expenditure over and above this amount will require the authorisation of the "host" Council's CEO.

4. Where either Regional Council uses the services of the other, whether that be the ROSC or other staff, the "host" Regional Council will reimburse costs to the other Council.

5. The host and contributing regional councils will ensure that all Public Liability, Accident Compensation and Occupational Safety and Health liabilities are covered for the time of secondment by the host council. The "host" Council will ensure that its insurances include ROSC's acting pursuant to this memorandum of understanding.

6. This agreement will be reviewed annually by Otago Regional Council and Environment Southland at the beginning of each financial year (1 July).

7. In order to ensure that skills and experiences are shared (and to familiarise the ROSCss in cross-boundary operations and issues), it is agreed that where appropriate, ROSC's and other trained staff will participate in training and exercises conducted by the neighboring Regional Council.

8. In accordance with Section 293 of the Maritime Transport Act 1994, this agreement shall be included in all copies of the **Regional Marine Oil Spill Contingency Plans** of each region.

9. This agreement is subject to the approval of the Director of the Maritime Safety Authority under Section 292 or Section 293(2) of the Maritime Transport Act 1994.

10. It is the responsibility of each Regional Council to ensure that their respective ROSC's are appropriately trained and approved by the Maritime Safety Authority.

11. It is the responsibility of each region to have at least two qualified ROSC's that are normally resident in the region and can be expected to be reasonably available.

12. It is recognised by each region that the use of its own ROSC is the preferred option, and as such, each Regional Council will do everything in its power to facilitate the involvement of that person ahead of a ROSC from the neighboring Regional Council, even if the "host" Council's ROSC is not resident in the region at the time of the initial spill.

4 9

Memorandum of
Understanding

13. It is the responsibility of the ROSC's covered by this agreement to maintain familiarity with the Marine Oil Spill Contingency Plans of both parties to this agreement.

14. It is the responsibility of each region to provide the ROSC's from the neighbouring region with an up to date copy of the region's Marine Oil spill Contingency Plan.

Signed for and on behalf of the
Otago Regional Council

13/11/00
Date

Signed for and on behalf of
Environment Southland

Acting General Manager.

gional House
rner Price St and North Rd
vercargill,
ew Zealand

SOUTHLAND REGIONAL COUNCIL

Private Ba
Invercargill
Telephone (03) 215-6197
Fax (03) 215-8081

Our Reference: 202/3/1
Enquiries to: Dallas Bradley

24 December 1998

W Harrison
Manager, Planning and Monitoring
The West Coast Regional Council
P O Box 66
Greymouth
Attention: Vijay Narayan

Dear Sir

Memorandum of Understanding with Respect to Dealing with Maritime Oil Spills

Thank you for your letter of 4 November 1998 containing the revised version of the above memorandum.

To progress the matter, I have signed the memorandum as I accept it in principle. However, my acceptance of the agreement is conditional on the following:

- No commitment to the ninth term from the last page of the agreement. While I agree there is considerable merit in involving neighbouring regions in training and exercises, the reality is that much of this activity is minor, or region specific, and as such, not particularly useful to yourself. Furthermore, I would imagine that you are unlikely to be able to justify the expense of attending training activity in Southland, unless it is a significant activity at any one time. However, where the training activity is significant, and generic in nature, then I would welcome your involvement.

- The agreement should have an expiry date for the purposes of my current committment to the understanding. The Southland Regional Council's approval of the agreement will expire on 30 November 2000. I note that the eighth term of agreement says that the memorandum will be reviewed annually by the West Coast Regional Council. I suggest that when it is reviewed, it is resubmitted to this Regional Council for its re-approval.

Yours faithfully

W J Tuckey
Regional On Scene Commander

12L Memorandum - Oil Spills

Managing Your Environment

MEMORANDUM OF UNDERSTANDING

Agreement Between

THE WEST COAST REGIONAL COUNCIL AND

SOUTHLAND REGIONAL COUNCIL , CANTERBURY REGIONAL COUNCIL, MARLBOROUGH DISTRICT COUNCIL AND TASMAN DISTRICT COUNCIL

REGARDING MARINE OIL SPILL RESPONSE IN THE WEST COAST REGION

West Coast Regional Council
1998

MEMORANDUM OF UNDERSTANDING (MOU)

AGREEMENT BETWEEN THE WEST COAST REGIONAL COUNCIL, SOUTHLAND REGIONAL COUNCIL , CANTERBURY REGIONAL COUNCIL, MARLBOROUGH DISTRICT COUNCIL AND TASMAN DISTRICT COUNCIL REGARDING MARINE OIL SPILL RESPONSE IN THE WEST COAST REGION

PURPOSE OF THIS MEMORANDUM:

The purpose of this Memorandum of Understanding (MOU) is to clearly delineate and identify a set of agreed principles for the development and delivery of effective management practices for major marine oil spills on the West Coast. This is dependent on establishing common agreement on oil spill management procedures and training between the local authorities of West Coast Regional Council, Southland Regional Council, Canterbury Regional Council, Marlborough District Council and Tasman District Council.

Day to day management of oil spill planning and related activities will be solely the responsibility of the West Coast Regional Council. The response to any oil spill will also be the responsibility of the West Coast Regional Council.

This MOU has been developed by the West Coast Regional Council as a result of limited manpower and local resources. This MOU is designed to meet the needs of the West Coast. However, it is also to formalise agreement and arrangements for help and support amongst the aforementioned local bodies in times of need.

BACKGROUND:

Through the Maritime Transport Act 1994, the West Coast Regional Council has been assigned responsibility to manage oil spills. Council lacks expertise both directly and indirectly in regard to this area of responsibility as it has no harbour functions nor owns any shares in any ports thereby minimising any maritime knowledge. The West Coast in terms of length is an extensive coastal area. Due to attrition within its staff Council has lost two of its trained On-Scene Commanders. At the present moment, there is no fully trained and MSA approved OSC for the West Coast. The task of overseeing this function is currently being handled by D. Barnes from Buller Port Services and A. Wijngaarden of Marlborough. This current setup is not envisaged as the optimal for the region so there is a need for assistance and a reciprocal arrangement with other local authorities for dealing with maritime oil spills.

From the West Coast Regional Council view, this arrangement has been established due to:

- ❒ ***Limited availability of individuals with skills in oil spill management;***
- ❒ ***Lack of effective back up within Council staff;***
- ❒ ***The prospect of a major oil spill occurring within the West Coast and having the potential to cross regional boundaries; and***
- ❒ ***A major spill affecting some or most of the regions coastline.***

PRINCIPLE FOR COUNCIL'S INVOLVEMENT IN OIL SPILLS:
The West Coast Regional Council is the first contact for dealing with unidentified spills, Tier I spills which are too big to be dealt by operators and all Tier II spills within the West Coast extending out to the 12 mile limit of the Territorial Sea.

LEGAL OBLIGATIONS:
The mechanism for dealing with regional marine oil spills is the Oil Spill Contingency Plan. This is clearly identified in Section 288 of the Maritime Transport Act 1994 which states ***"The purpose is ...to promote a planned and regionally co-ordinated response to any marine oil spill within a region that is beyond the resources of the persons who have caused the marine oil spill or that has not been appropriately responded to by such persons".*** . The West Coast Regional Council has a Tier II Plan conditionally approved by the Maritime Safety Authority (MSA). The Tier II Plan has now been redrafted and submitted to MSA for final approval.

ASSUMPTIONS:
Mutual or reciprocal aid is based on the following assumptions:

- **That no participating body has all the resources needed to cope with every oil spill it may face.**
- **Councils must plan ahead and be familiar with practices used in other regions (via exercises) to ensure effective use of available resources;**
- **Each Council must first rely on its own resources and staff before mutual aid is requested;**
- **That the basic tenet of oil spill response operation is self help; and**
- **Use is made of the existing facilities, equipment and resources within a region prior to requesting assistance.**

ON-SCENE COMMANDERS AND DELEGATIONS:
The role of the Regional On-Scene Commander is outlined in Appendix A5.5 of the West Coast Marine Oil Spill Contingency Plan. The expenditure limits of the ROSC are defined in the West Coast Regional Council Delegations Manual. So far, only two people (A. Wijngaarden for Buller Port area and D. Barnes for the region) have delegated authority from both the Council and MSA with defined roles for dealing with oil spills. A similar process will have to be undertaken by each of the local authorities including the West Coast to have the named persons to act as OSC's for the West Coast region in the unlikely event of a major oil spill. It is envisaged by Council that until such time as it has its own properly trained team, an Agreement with other local authorities will be considered pivotal in terms of dealing with maritime oil spills. There will continue to be annual reviews of council operations and training programmes and these will be relayed to the other signatories to this Agreement.

THE SYNERGIES:
The above four local authorities and particularly the West Coast Regional Council (due to its position) believes that the establishment of mutual aid will enable the :

- ***Delivery of an operational system with tried and tested personnel;***
- ***Delivery of a management structure and operational system that will safeguard the environment and minimise any adverse impacts;***
- ***Development of an integrated management system which will improve the efficiency and effectiveness of the partners.***

TERMS OF AGREEMENT:

- It is recognised that for purposes of an effective marine oil spill response, a co-operative approach between neighbouring Regional Councils is essential. This is particularly so from West Coast Regional Council perspective
- The OSC or the Alternate OSC in whose region a need for mutual assistance is required retains overall direction and control regarding the deployment of personnel and equipment provided through mutual aid.
- The West Coast Regional Council will undertake all immediate and routine expenditures associated with marine oil spill operations within the coastal marine area of the West Coast region as defined in the Plan.
- The requesting authority will be responsible for all support required for the persons or resources requested.
- It is agreed by all parties that should a spill cross the boundary between any of the regions named in this Memorandum, that the response action will be governed and controlled by the ROSC in the region in which the spill originated;
- It is agreed that in an event that none of the West Coast Regional Council's OSC's are available in responding to an event, the OSC of the nearest region (or one deemed having familiarity with the region) will have delegated authority (by specific letter of appointment) to act as the West Coast OSC as per the role detailed in Appendix 5.5 of the Plan.The West Coast Regional Council by virtue of such an appointment will reimburse costs to the respective Council, undertake OSH and ACC liabilities, and indemnify and save harmless all damages, losses or liabilities which may arise in respect to the appointment.
- Each participating agency will provide for the receiving and desseminating of information on the availability of resources
- This Memorandum will be reviewed annually by the West Coast Regional Council. Items for review and consequent confirmation should include annual programme budgets, expectations and contractual agreements.
- In order to ensure that skill and experience are shared (and to familiarise the OSCs in cross-boundary issues and operations), it is agreed that regular training and exercises will be conducted between all regions mentioned in this MOU.
- In accordance with Section 293 of the Maritime Transport Act 1994, a copy of this agreement shall be included in the West Coast OSCP.
- This agreement is subject to approval of the Director of the Maritime Safety Authority under Section 292 of the Maritime Transport Act 1994;
- It will be the responsibility of each of the named local authority to ensure that their respective OSC is appropriately trained and approved by the Maritime Safety Authority and authorised by the Director of MSA to act as the ROSC for the West Coast region (pursuant to Section 318 of the MTA 1994)

SIGNED for and on behalf of the **WEST COAST REGIONAL COUNCIL** ..... Dated 3/12/1998	**SIGNED** for and on behalf of the **SOUTHLAND REGIONAL COUNCIL** ..... Dated 22/2/99	Approved by the Director of **MARITIME SAFETY AUTHORITY**

See Morf A205032 for an electronic copy of the original.

Memorandum of Understanding

Between Department of Conservation (Southland Conservancy) (DoC)

and Environment Southland (ES)

Tier 2 Marine Oil Spill Responses on Stewart Island

Background

Statutory

Environment Southland, more particularly the Council's Regional On-Scene Commander, is responsible under the Maritime Transport Act 1994 for Tier 2 marine oil spill responses in the Southland Region. Pursuant to the 2000 New Zealand Marine Oil Spill Response Strategy, DoC has a role to act as a contractor to regional councils with support for oil spill planning and response logistics, communications and personnel.

Operational

There have been several marine oil spills in Stewart Island waters in recent years. ES does not have a staff presence on Stewart Island, however, DoC does. Furthermore, DoC has its own vessels, which ES does not have, and its staff have considerable local knowledge and wildlife expertise.

This capability has led to ES calling upon staff from the DoC Stewart Island Field Centre to assist with the response to some of the past spills. The DoC response has made a significant contribution to the overall success of these responses.

It is likely that in the future, DoC staff and equipment based on Stewart Island will make up the bulk of, if not the total initial ground or water response to an oil spill around the island. They will generally also make up a major component of the longer term response to larger spills. However, it is important to remember that DoC personnel and equipment (boats) may be already committed elsewhere, particularly during the summer.

Furthermore, the Department may need to initiate its own response to a marine oil spill (particularly in the event of a vessel grounding on an island) in order to minimise associated risks to conservation values from fire, pests (including weeds and predators), abandonment and salvage. In such an event, the Department will need to use its own emergency contingency response plans (e.g. Fire, Marine Mammal Rescue, Island Mammal Pest Invasion) This may impact on the amount of staff and vessel time available to respond to an oil spill specifically.

(NB: A Tier 2 response is one that can be handled regionally by ES. If necessary, this is then scaled up to a Tier 3 response which means that the MNZ lead national oil spill response team takes over.)

Purpose

This arrangement has been established to:

(a) formalise what have in the past largely been ad hoc arrangements
(b) provide certainty as to the availability of DoC staff and their roles and responsibilities during a marine oil spill response around Stewart Island
(c) clarify the basis for charging for DoC services and recovery of costs
(d) formalise reporting lines within DoC and between DoC and ES
(e) clarify responsibility for engagement of contractors to support on-site operations
(f) provide for the supply of plans, equipment and training to Stewart Island Field Centre staff.

Definitions

MNZ	Maritime New Zealand – responsible for Tier 3 marine oil spills that are beyond the resources of Environment Southland.
ICC	Incident Command Centre – this will usually be based at Environment Southland's offices in Invercargill.
DoC OSC	Department of Conservation Oil Spill Co-ordinator – based at the ICC.
DoC Wildlife Organiser	Based at the ICC – will work alongside the On Scene Commander, Environment Southland and MSA Wildlife Co-ordinator at the ICC.
OSTL	On Site Team Leader – may be DoC or ES/MSA, based on the island.
SIRC	Stewart Island DoC office Response Co-ordinator, DoC staff member based on the island.

Terms of Agreement

In order to maximise the benefits of the available resources and minimise any problems that may arise, it is important that the following points are followed:

1. ***Reporting Lines***
   Unless otherwise directed by the Conservation Services Manager, DoC staff on Stewart Island will report to the DoC Oil Spill Co-ordinator (DoCOSC) in Invercargill, who will in turn report to the On-Scene Commander (ES or MSA) either directly or through a manager of a key activity. This is generally through the DoC Wildlife Advisor who will be based at the Incident Command Centre (ICC) at the ES office. For smaller spills, it is likely that the two roles i.e. DoC OSC and DoC Wildlife Advisor, will be combined in which case the person will be based at the ES office. See Appendix 1 for a diagram illustrating reporting lines.

2. ***Appointment of On-Site Team Leaders***

An On-Site Team Leader (OSTL) will be appointed for the island team, to co-ordinate field operations. This will initially be a DoC person but if the response justifies it, it will be taken over by ES/MNZ and the OSTL will move into another role that best suites the circumstances. Specifically, the OSTL is responsible for the following:

(a) establishing an on-site response team
(b) organising support services for the on-site response team e.g. boats
(c) providing the SIRC with a daily breakdown of hours worked by plant (equipment) and team members
(d) ensuring that all DoC and ES/MNZ safety requirements are met
(e) ensuring that no team member speaks to the media without the express authority of the Regional On-Scene Commander (ES).

3. ***Appointment of Stewart Island DoC office Response Co-ordinator (SIRC)***

A nominated DoC contact(s) shall be available at all times in the office to facilitate communications and maintain records. Specifically, this person is responsible for the following:

(a) ensuring that all staff/contractors sign in and out both for accounting and safety purposes *(NB: all personnel involved are paid – there are to be no volunteers)*;
(b) ensuring that a full log of all relevant information, i.e. phone and radio calls, number of meals, deployment of equipment etc is kept;
(c) ensuring the attached forms are filled in and faxed to the ICC on a daily basis.

4. ***Engagement of Contractors***

All contractors which are required by the On-Site Team Leader to fulfill the requests of the On-Scene Commander are to be contracted directly to DoC, i.e. the On-Scene Commander will set the number of people and boats required and the OSTL will make up/employ the team from the most suitable sources. The costs of employing the contractors will be reimbursed by ES.

5. ***Reporting Operating Hours***

The OSTL will provide the Stewart Island Response Co-ordinator (SIRC) with a daily breakdown of the hours worked by each team member and contractor, and operating hours for all boats and motors. These will then be collated by the SIRC and forwarded to the DoCOSC as soon as possible after the spill response is completed.

6. ***Equipment Repair and Cleanup***

(a) If equipment is damaged during reasonable use by the oil or due to specific instructions from the On-Scene Commander or their delegate to act contrary to standard practice, as opposed to operating damage, i.e. operator error - hitting rocks, incorrect fuel mixtures etc, this will be repaired/replaced by ES/MNZ.
(b) ES/MNZ will pay for any additional specific cleaning required of boats and motors following their use on spill cleanup. This does not include standard servicing as this is covered in the charge-out rate, as is fuel.

7. ***Safety***

Safety is paramount at all times and is to be decided by the OSTL and Safety Officer. No staff are to handle oil or dispersants without appropriate safety equipment. It is important to remember the risk of fire from some types of oil, i.e. no smoking. The OSTL is responsible for ensuring that all departmental safety requirements are met, i.e. hazard forms, safety briefings and, when appropriate, the appointment of a Safety Officer. Any specific safety gear which is required, e.g. face masks/overalls etc., will be provided by ES – procurement will usually be co-ordinated by the DoC Co-ordinator in Invercargill.

8. ***Wildlife Response Equipment***

ES will provide the Senior Biodiversity Ranger, Stewart Island with a copy of the Regional Marine Oil Spill Response Plan for Southland. This plan contains a full list of the equipment kept in the wildlife response boxes in Bluff. This will be updated if there are any changes.

9. ***Media***

No staff will talk to the media about any aspect of the oil spill without the express permission of the On Scene Commander – the OSTL is responsible for briefing the team on this. Media contacts are to be directed to the ICC.

10. ***Meals***

The costs of all reasonable meals are to be recovered from ES.

11. ***Reporting Lines once an ES/MNZ Operations Controller arrives on Stewart Island***

If it is a larger spill and an ES/MSA operations controller is positioned on the island, this person will be responsible for co-ordinating field actions involving DoC staff/contractors. The DoC OSTL will still be responsible for overseeing field operations and the office staff will still carry out administration where DoC staff and subcontractors are involved.

12. ***Cost Recovery***

ES/MSA will reimburse all authorised costs including equipment, salary and authorised overtime at standard penal rates.

13. ***Charge Out Rates***

The charge out rates for DoC equipment on Stewart Island are as set out in the attached Appendix 2. They may be inflation adjusted over time.

14. ***Priority of Oil Spill Response to other DoC Work***

Oil spills shall have priority over all other standard DoC work unless:

- the nature of the oil spill response activity is non urgent and could equally be undertaken by other parties; or
- staff/equipment are already involved in another activity or it involves a wider group e.g. previous commitments to other organisations/the public.

If the OSTL is unsure of where the Department's priorities lie, they are to discuss with the Area Manager.

15. ***DoC National Contact***
Central Regional Office is the DoC National Contact for oil spill responses. Geoff Owen (manages the relationship with Maritime NZ) and Grant Campbell (Oil Pollution Advisory Committee representative) are the first and second contacts respectively. It is the responsibility of the DoC Co-ordinator to notify them.

Term and Review of this Memorandum of Understanding

This Memorandum of Understanding will commence on the date that it is signed by both parties and will continue until it is revoked.

Signed for and on behalf of
Environment Southland

Name: Allen Hadley

Position: Regional On Scene Commander
Environment Southland

Date: 15 June 2015

Signed for and on behalf of the
Department of Conservation

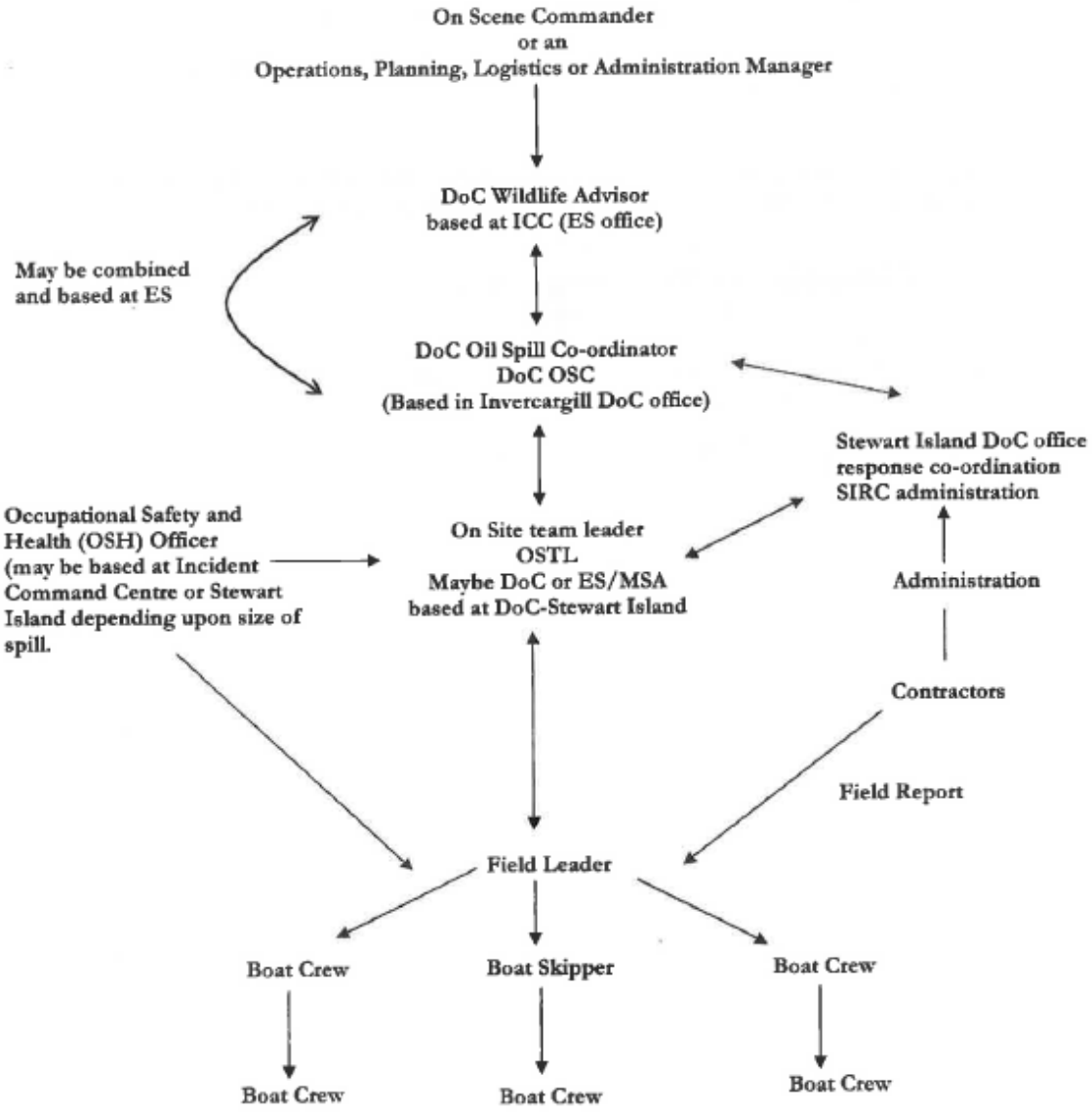
Name:

Position: Director SSI

Date: 11/6/2015

Appendix 1

Stewart Island Oil Spill Reporting Lines



Annex 6.7

Council appointments of Regional On Scene Commanders and Financial Delegations.

From the Minutes of the 28 September 2011 Council Meeting:

Item 10 – 202/03/01 – Marine Oil Spill Response – Appointment of Regional On-Scene Commanders

This item reported that under Section 318 of the Maritime Transport Act 1994 every regional council shall from time to time appoint a Regional On-Scene Commander and a person or persons who shall perform that role as alternates. The report recommends the appointment of Dallas Bradley as Regional On-Scene Commander to replace Warren Tuckey, and to appoint Kevin O'Sullivan, Warren Tuckey and Simon Moran (SDC) as first, second and third alternate Regional On-Scene Commanders respectively.

Resolved:

Moved Cr Cook, seconded Cr Mason that Council:-

1. **appoint Dallas Bradley as Regional On-Scene Commander to perform the functions and duties and exercise the powers of a Regional On-Scene Commander;**

2. **appoint Kevin O'Sullivan, Warren Tuckey and Simon Moran as first, second and third alternate Regional On-Scene Commanders respectively, to perform the functions and duties and exercise the powers of a Regional On-Scene Commander if the office of the Regional On-Scene Commander is vacant or the Regional On-Scene Commander is absent.**

Carried

Item 11 – 102/05/07 – Staff Delegations

Mrs Brown's report provided the Councillors with information on the updates of the Financial Delegations Manual, relating to the Biosecurity Division and Regional On-Scene Commanders.

Resolved:

Moved Cr Cook, seconded Cr Horrell that Council approve an update to the Financial Delegations Manual as follows:- ….

2. **replace the present wording of clause 1.9 Regional On-Scene Commander (Financial Delegation) with the following:**

(a) **the Regional On-Scene Commander is authorised to expend up to $100,000 (including GST) of the Council's funds in relation to Marine Oil Spill Response operations;**

(b) **the expenditure of $100,000 may be exceeded up to a limit of $250,000 (including GST) with prior consultation with the Chief Executive or Director of Environmental Management;**

(c) **any person authorised by the Council when acting as Regional On-Scene Commander, who for the time being is the Acting Regional On-Scene Commander, is authorised to spend up to $30,000 (including GST) in relation to Marine Oil Spill Response operations;**

(d) **the expenditure of $30,000 may be exceeded, up to the limit of $100,000 with prior consultation with the Chief Executive or Director of Environmental Management;**

(e) **Regional On-Scene Commanders are required as a condition of the delegation, to:**

- **comply with Maritime New Zealand Operational Policy;**
- **comply with Council procedures and subsequently report to the next meeting of Council.**

Carried

Annex 6.8

Meridian/Environment Southland Agreement for use of Meridian equipment and personnel based at West Arm or Manapouri.

From: John Twidle <John.Twidle@MeridianEnergy.co.nz>
Sent: Thursday, 26 February 2015 12:56 p.m.
To: Dallas Bradley
Cc: Brian Sinclair, Paul Lloyd
Subject: Meridian Energy Support of ES Oil Spill Response

Hi Dallas,

I would like to re-affirm Meridian Energy's commitment with respect to Oil Spill Response in the areas in and around West Arm Manapouri, and Deep Cove Doubtful Sound, Fiordland.

Meridian is keen to support Environment Southland on a 'Best Endeavours' basis in the event of an emergency of this nature in order to enable the most timely and effective response. Resources that Meridian may have access to include;

Manpower
Environment Southland facilitated the training and refreshing of two Meridian employees from this area, namely John Twidle and Brian Sinclair, to MSA 'Tier 2' standard. Meridian also has access to other manpower in the area should the need arise.

Land & Water Transport:
Meridian has immediate and priority access to;

Water:

Personnel Craft Manapouri	'MV Mararoa'	Surveyed to 48 pax + 750 Kg's of deck freight operating on Lake
Heavy Freight Manapouri	Barge:	Tug Boat 'Hustler' + Barge capable of carrying 250 Tonne on Lake
'Fizz' Boat	'Lil Slick'	5.3 Mtr Aluminium, cuddy cabin with 115 4-Stroke Yamaha O/Bd

Land:
4WD Vehicles based at West Arm for access across Wilmot Pass to Deep Cove
Van for personnel transport based at West Arm
Other specialist equipment: All-terrain forklift, Hiab truck, trailers, marquees, other plant that comes and goes randomly to/from West Arm

Equipment:
Oil Response Trailer: A dedicated, hard-covered trailer equipped with absorbent booms, tools, lighting, signage and PPE. Trailer is rigged with slings for helicopter lifting. Weight is always kept at no more than 1.0 Tonne to enable lift by Squirrel Helicopter.
Additional Booms: A stock of additional booms is held in the West Arm Store.

Process
Meridian personnel at Manapouri are trained to CIMS2 & CIMS4 standard for Incident Management.
Manapouri Emergency Response capability is supported by Management and support personnel from the Waitaki Valley if needed.
Meridian trains in its emergency response capability and has a site-specific emergency response manual for Manapouri that marries into the overall Meridian Emergency response manual.

Regards,

John Twidle
Site Manager
Meridian Energy Ltd
Manapouri Power Station, PO Box 101 Manapouri
DDI: (03) 249-8711 or (03) 435-9411 Fax: 03 249-8702 Cell: (021) 442-897 Sat: 0088 1641-447026
john.twidle@meridianenergy.co.nz

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leading safety, security and environmental protection

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7 August 2015

Dallas Bradley
Senior Planner (Hazard Mitigation)
Environment Southland
Private Bag 90116
Invercargill

Dear Dallas

Environment Southland Regional Marine Oil Spill Contingency Plan Approval

This letter serves to inform you that your Council's reviewed marine oil spill contingency plan is approved in accordance with sections 289 and 292 of the Maritime Transport Act.

It is important that the plan is checked every 12 months to verify the currency and completeness of the information contained in it, as is required by Marine Protection Rule part 130C.18, to ensure that the plan stays as up to date as possible.

Can you please ensure that two hard copies of the approved plan and an electronic version of the plan are sent to Dayne Maxwell at MPRS.

Yours sincerely

Renny van der Velde
Group Manager Maritime Security and Response Services

Annex 6.10

Port Maintenance Ltd/Environment Southland – Agreement for supply of marine oil spill services at Bluff.

The following Agreement was entered into in 2005. While it may be a little dated in some respects, it still holds today. The Port Maintenance Ltd/Environment Southland relationship has matured over time and collectively represents significant operational experience and capability.

Over the years, many Port Maintenance staff have attended Maritime NZ training courses and/or local exercises, and while some of those staff have come and gone, there is a core of about six staff that are enduring. Additionally, Port Maintenance staff have attended and cleaned up many oil spills, mainly in Bluff but further afar (Rena & Milford Sound as well).

Agreement for Supply of Services in Preparing for and Responding to Marine Oil Spills, particularly in Bluff Harbour

Date: This agreement is made on the 1st day of June 2005.

Parties: Environment Southland and Port Maintenance Ltd.

Background:

1. Environment Southland has responsibilities pursuant to the Maritime Transport Act to prepare for and respond to marine oil spills in the coastal marine area within the Southland region.

2. Bluff Harbour, some 30 kilometres (30 minutes) from Invercargill, the location of the Environment Southland offices, is a common source of small oil spills and a significant potential source of larger spills.

3. In the past, Environment Southland has relied on South Port staff to provide a timely first response to spills in Bluff Harbour. However, South Port staff are often committed to Port activities and are not always available. As such, Environment Southland has moved over the last two-three years to shift its reliance in an operational response to Port Maintenance Ltd.

4. Port Maintenance Ltd is contracted by the Maritime Safety Authority to maintain the oil spill equipment that is stored at Bluff.

5. Port Maintenance Ltd is managed by John Roderique, a former employee of South Port. John was initially trained whilst at South Port as an Oil Spill Equipment Operator in 1997 and in 2004 was trained as an Oil Spill Response Manager. In addition, four Port Maintenance Ltd staff have been trained as Equipment Operators, with two more to receive training in the 2005/06 financial year.

6. Environment Southland and Port Maintenance Ltd seek to formalise their relationship by way of this agreement.

Purpose of this Agreement:

7. To establish arrangements for a timely and efficient response to marine oil spills, particularly in Bluff Harbour.

8. To provide for a marine oil spill monitoring service in Bluff Harbour that is incidental to the normal activities of Port Maintenance Ltd.

9. To record equipment and personnel hire rates.

10. To record duties of both parties in respect of the other.

Terms of Agreement – Environment Southland:

11. Environment Southland will provide Port Maintenance Ltd with a copy of Chapter 2 "Standard Operation Procedures for Marine Oil Spills" and relevant Annexes from the Southland Marine Oil Spill Contingency Plan.

12. Environment Southland will arrange for the ongoing Oil Spill Management training for John Roderique and ongoing Equipment Operator training for at least six Port Maintenance Ltd staff.

13. Environment Southland will train John Roderique and at least one other Port Maintenance Ltd employee in the use of the oil spill sampling kit.

14. Environment Southland will arrange for Oil Spill Management Training for Michael or Daniel Roderique in the 2006/07 financial year.

15. Environment Southland will, on a biennial basis, liaise with Port Maintenance Ltd on an oil spill equipment deployment exercise to be undertaken within the confines of Bluff Harbour.

16. Environment Southland will invite John Roderique to participate in its annual table top oil spill response exercise, no matter what or where the scenario/s.

17. Environment Southland will reimburse Port Maintenance Ltd staff participating in MSA training courses for the cost of their time on the course (eight hours per day and the cost of travel time – Bluff to Auckland – over and above the eight hours).

18. Environment Southland will seek advice/input from John Roderique in respect of the review or approval of any Tier One Plans for sites in Bluff Harbour.

19. Environment Southland will reimburse Port Maintenance Ltd for the cost of performing agreed functions in accordance with the rates on Schedule 1.

20. Environment Southland will pay invoices based on agreed rates by the 20th of the month following receipt of the invoice.

21. Environment Southland will keep a copy of this agreement in the Tier Two Plan.

T:\Policy_Planning\DallasB\Agreement for Supply of Services in Preparing for and Responding to Oil Spills.doc

Terms of Agreement – Port Maintenance Ltd:

22. Port Maintenance Ltd will use its best endeavours to make staff available for verifying, assessing and responding to marine oil spills.

23. Port Maintenance Ltd will not respond to marine oil spills unless directed or requested to do so by the Regional On Scene Commander, or his alternates. Notwithstanding this, Port Maintenance Ltd may report spills in Bluff Harbour to Environment Southland and subsequently be instructed to investigate and/or respond.

24. Port Maintenance Ltd will respond to marine oil spills in accordance with the procedures outlined in Chapter 2 of the "Southland Marine Oil Spill Contingency Plan".

25. In investigating/responding to marine oil spills, Port Maintenance Ltd shall maintain records of time and personnel involved and work with South Port or Environment Southland personnel as requested.

26. Port Maintenance Ltd shall make staff available for MSA training courses and regional exercises.

27. Port Maintenance Ltd shall advise Environment Southland of small marine oil spills that it observes, especially those that appear to come repeatedly from the same source.

28. Port Maintenance Ltd shall respond on request to investigate pollution incidents from contaminants other than oil.

29. Port Maintenance Ltd shall advise Environment Southland at least one week prior to the dates of its quarterly marine oil spill equipment maintenance checks, to give Environment Southland staff a chance to maintain familiarity with the equipment.

30. Port Maintenance Ltd shall open up the equipment store and assist as required when the marine oil spill equipment is either put on standby or deployed elsewhere in the region or New Zealand.

31. Port Maintenance Ltd shall, before this agreement is entered into, submit a copy of its Occupational Safety and Health Plan for Environment Southland's approval.

Insurance Cover/Liabilities and Indemnity:

32. Protection from liability is provided to the MSA and Council by Section 327 of the Maritime Transport Act 1994: Protection from Liability, which is reproduced below. In addition to this, further protection from liability shall be provided by the clauses contained in this Agreement.

Section 327 of the Maritime Transport Act 1994: Protection from Liability

> *"... no action or proceeding shall be brought against ... any regional council, or any On Scene Commander, to recover damages for any loss of or damage to property that is due directly or indirectly to a marine oil spill response having been taken, where loss or damage is caused by any person acting in good faith who takes or fails to take any action in the exercise or performance of his or her functions, duties, or powers under this part of this Act."*

33. Each party waives all claims against the other and will notify its insurers of this waiver.

Exchange of Information:

34. The parties will freely exchange information as required to assist each other with marine oil spill response matters.

35. Information supplied pursuant to this agreement will, regardless of its form, be treated as supplied in confidence and its security will be maintained in accordance with the security classification imposed by the supplying party.

Media:

36. All media enquiries with respect to an marine oil spill response will be directed to the Regional On Scene Commander in the first instance.

Review and Amendment:

37. The parties will review the operation of this Agreement every three years.

38. This Agreement may be amended at any time by mutual written consent of the parties.

Termination:

39. Either party may terminate this agreement by giving written notice to the other party of its intention to terminate. The Agreement will terminate three months after the date of service of the notice.

Entry into Effect:

39. This agreement will come into effect on signature.

Signed for and on behalf of Environment Southland:

.....W J Tuckey, Regional On Scene Commander

in the presence of

..... Signature

Dallas Bradley Name

c/- Environment Address

Southland, cnr Price St & North Road, Invgill.

Hazard Mitigation Planner Occupation

1 June 2005 Date

Signed for and on behalf of Port Maintenance Ltd

.....John Roderique, Managing Director

in the presence of

..... Signature

JOHN RODERIQUE Name Judith R Nunske

62 BANNON ST BLUFF Address 45 Miller St

Invgill.

MANAGING DIRECTOR PORT MAINTENANCE Occupation Administration Clerk.

17 - JUNE 2005 Date 8/7/05.

T:\Policy_Planning\DallasB\Agreement for Supply of Services in Preparing for and Responding to Oil Spills.doc

Schedule 1

Hourly rates for charging purposes

1. Personnel

   (a) Personnel involved in the following activities:

   - training and exercises
   - preparing oil spill equipment for deployment elsewhere
   - small oil spill responses (verification, sampling, containment and clean up)
   - any other activity other than set out in 1(b), below

John Roderique	$50.00/hour
Other Port Maintenance employees	$40.00/hour

   (b) Personnel involved in the following activities:

   - a large multi agency response, where John Roderique acts as an On Site Manager in charge of staff other than those from Port Maintenance Ltd or South Port following liaison with the Regional On Scene Commander

John Roderique	$150.00/hour
Other Port Maintenance employees	$ 50.00/hour

2. Equipment

Hi-Ab truck (1)	$ 110.00/hour
Hi-Ab truck (2)	$ 95.00/hour
Hi-Ab truck (3)	$ 90.00/hour
40 foot curtain side truck	$ 85.00/hour
5 tonne forklift	$ 75.00/hour
23 foot Shark Cat (Twin 140 HP outboards)	
- with one man	$ 150.00/hour with operator
15 foot Stabicraft (45 hp)	
– with one man	$ 85.00/hour with operator
16 foot dinghy	
- with one man	$ 85.00/hour with operator
Car	$ 0.70/km

All rates are GST exclusive.

Note: This schedule is dated in respect of hourly rates and equipment. See Annexes 1.7.12 and 1.9.7 for updated details in respect of Boats and HiAbs.

Annex 6.11

Environment Southland/South Port Oil Pollution Equipment Storage Agreement (See Morf A140206 for an original copy of the agreement)

SOUTH PORT NEW ZEALAND LIMITED

26 May 2015

Attn: Dallas Bradley
Environment Southland
Private Bag 90116
Invercargill 9840

Dear Dallas

Additional Space – Oil Pollution Equipment Storage

Thank you for your enquiry regarding the availability of additional space for storage of equipment on the Port.

We confirm we can accommodate an additional $6m^2$ increase to Environment Southland's leased area.

Currently $60m^2$ of space is rented at $3,035 per annum, this equates to $50.58 per m^2. The same rate will apply to the additional $6m^2$.

The new rental to apply from 1 June 2015 has been assessed at $3,338 per annum plus GST. The quarterly payment effective from 1 July 2015 is therefore $834.50 plus GST. A catch up invoice for the period June 2015 will be sent to you.

We propose that all other details including rental reviews occur in accordance with the current Licence to Occupy Agreement in place between the two parties.

Please sign the statement on the attached copy of this letter and return it to me to indicate your acceptance of this amendment, or call should you wish to discuss further.

Kind regards

SSmith

SARAH SMITH
Finance Administrator

Future invoices for storage to be charged to 3410.1220.526 (10/11) & 1/11 to a Biosecurity code.

SOUTH PORT NEW ZEALAND LIMITED

26 May 2015

COPY

Attn: Dallas Bradley
Environment Southland
Private Bag 90116
Invercargill 9840

Dear Dallas

Additional Space – Oil Pollution Equipment Storage

Thank you for your enquiry regarding the availability of additional space for storage of equipment on the Port.

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We propose that all other details including rental reviews occur in accordance with the current Licence to Occupy Agreement in place between the two parties.

Please sign the statement on the attached copy of this letter and return it to me to indicate your acceptance of this amendment, or call should you wish to discuss further.

Kind regards

SMith.

SARAH SMITH
Finance Administrator

On behalf of Environment Southland, I accept the amendment as outlined above.

Signature

8 June 2015
Date

ISLAND HARBOUR, PO BOX 1, BLUFF 9842, NEW ZEALAND
PHONE +64 3 212 8159, FAX +64 3 212 8685, EMAIL reception@southport.co.nz
www.southport.co.nz

SOUTH PORT NEW ZEALAND LIMITED

19 June 2014

ENVIRONMENT SOUTHLAND
24 JUN 2014

Mr D Bradley
Environment Southland
Private Bag 90116
Invercargill 9840

Dear Dallas

Executed Licence Agreement

Please find attached the executed Licence to Occupy Agreement for your records.

Thank you for your prompt action signing the document and also providing me with a copy of the annexure for our files.

This was a copy of the plan of the storage area. (L shaped, 60m²)

Yours sincerely

JAMIE MAY
Marketing Assistant

Encl.

NZX LISTED
ISLAND HARBOUR, PO BOX 1, BLUFF 9842, NEW ZEALAND
PHONE +64 3 212 8159, FAX +64 3 212 8685, EMAIL reception@southport.co.nz
www.southport.co.nz
Southland New Zealand

SOUTH PORT NEW ZEALAND LIMITED Licensor

SOUTHLAND REGIONAL COUNCIL Licensee

NON EXCLUSIVE LICENCE TO OCCUPY BUILDING

AGREEMENT TO LICENCE made this 25th day of June 2014

PARTIES:

1. **SOUTH PORT NEW ZEALAND LIMITED** ("South Port")

2. **SOUTHLAND REGIONAL COUNCIL** ("Environment Southland")

WHEREAS:

SOUTH PORT grants to Environment Southland a licence to occupy and use that area of Workshop and Store Building at Bluff as delineated on the Plan annexed hereto ("the Building') together with the right of access over the Island Harbour as for the term from the commencement date and on payment of the Licence Fee set out in the First Schedule.

THE terms and conditions of this licence are set out in the Second Schedule.

SIGNED by **SOUTH PORT NEW ZEALAND LIMITED**

by

.....

Authorised signatory

Nigel Gee

Signatory's full name (please print)

SIGNED by **SOUTHLAND REGIONAL COUNCIL**

by

.....

Authorised signatory

Dallas Myles BRADLEY

Signatory's full name (please print)

FIRST SCHEDULE

TERM:	Three years
COMMENCEMENT DATE:	1 July 2014
ANNUAL LICENCE FEE:	$3,035.00
REVIEW DATE:	Every 2 years (next review 1 July 2016)
LICENCE FEE PAYMENT DATES:	1st days of October, January, April, and July
DEFAULT INTEREST RATE:	14% per annum
BUSINESS USE:	The Building shall be used for the storage of oil pollution equipment.

SECOND SCHEDULE

1. LICENCE FEES

1.1 Environment Southland shall pay the Licence Fee by equal quarterly payments in advance on the Licence Fee payment date. The first quarterly payment shall be payable on 1 July 2014. All Licence Fee payments shall be made without any deduction by direct payment to South Port or as South Port may direct.

2. RENT REVIEW

2.1 The annual rent payable as from each rent review shall be:

(a) Calculated by multiplying the annual rent payable in force immediately preceding the relevant rent review date by the following fraction:

$$\frac{A}{B}$$

Where:

"A" is the New Zealand Consumer Price Index (all groups) published by Statistics New Zealand ("the index") for the quarter ended immediately preceding the relevant rent review date, and

"B" is the index for the quarter ended immediately preceding the previous rent review date, or if there has been no rent review, the commencement date.

(b) Notwithstanding any other provision of this clause, the annual rent payable as from the relevant rent review date shall not be less than the annual rent payable as at the commencement date of the then current lease term.

(c) The annual rent determined pursuant to this clause shall be the annual rent payable from the later of:

(i) relevant rent review date, or

(ii) the date of service of the Lessor's notice to the Tenant advising the new rent, if such notice is served later than three (3) months after the relevant rent review date.

(d) The rent, at the option of either party, may be recorded in a Deed, which shall be prepared by the Lessor's solicitor. The Lessor's reasonable legal costs (as between solicitor and client) of and incidental to the preparation of the Deed shall be payable by the Lessee.

3. LICENSEE'S ACCESS

3.1 South Port grants to the Licensee, his employees, agents, contractors and invitees the right at all reasonable times to pass and repass across the Island Harbour for the purpose of obtaining access to the Building but not so as to obstruct or impede the use of the Island Harbour by South Port or any employees, agent, contractor or invitee of South Port.

3.2 The permission set out in this clause is not an easement and shall not confer on Environment Southland any right, title or interest in or to the building.

4. RIGHT OF ENTRY

4.1 The parties agree that Environment Southland does not have a legal right of exclusive possession to the Building and that South Port reserves the right of entry into the Building at all times for any reason whatsoever.

5. GOODS AND SERVICES TAX

5.1 Environment Southland shall pay to South Port or as South Port shall direct any Goods and Services Tax payable by South Port in respect of the Licence Fee and other payments payable by Environment Southland hereunder. The tax in respect of the Licence Fee shall be payable on each occasion when any payment falls due for payment and in respect of any other payment shall be payable upon demand.

5.2 If Environment Southland shall make default in payment of the Licence Fee or any other monies payable hereunder and South Port becomes liable to pay additional Goods and Services Tax then Environment Southland shall on demand pay to South Port the additional tax.

6. INTEREST ON UNPAID MONIES

6.1 If Environment Southland defaults in payment of the Licence Fee or other monies payable hereunder for 14 days then Environment Southland shall pay on demand interest at the default interest rate on monies unpaid from the due date for payment until the actual date of payment.

7. COSTS

7.1 Environment Southland shall pay South Port's Solicitors costs of and incidental to the preparation of this licence and any variation, assignment or renewal of any deed recording Licence Fee reviews and the stamp duty payable and South Port's legal costs (as between Solicitor and client) of and incidental to the enforcement or attempted enforcement of South Port's rights, remedies and powers under this deed.

8. USE OF BUILDING - BUSINESS USE

8.1 Environment Southland shall not without the prior written consent of South Port use or permit the whole or any part of the Building to be used for any use other than the business use.

9. COMPLIANCE

9.1 The Licensee shall comply with the provisions of all statutes, ordinances, regulations and by-laws relating to the use of the premises by the Licensee or other occupant and will also comply with the provisions of all leases, licences, requisitions and notices issued by any competent authority in respect of the premises or the use by the Licensee or other occupant.

9.2 In the event of a Security Incident the Licensee shall permit South Port and South Port's employees, contractors and agents to enter the premises for the purpose of complying with the terms of any statutes, ordinances, regulations, by-law, leases, licences or any requisition or notice served on South Port.

9.3 For the purposes of clause 9.2:

"Security Incident" which words shall have the meaning given to them by the Maritime Security Act 2004."

9.4 The Licensee shall ensure that the Island Harbour, which it has access over in accordance with clause 4.1, shall not be used for the placing or storing of any gear and equipment.

10. EXCLUSION OF LIABILITY

10.1 South Port shall not be liable to the Licensee, his employees, contractors, agents or invitees for any costs, claims or damages arising from the Licensee's use of the building, the Island Harbour or any other property of South Port caused by any negligent act or omission of South Port or its employees whether in its own right or as agent or delegate of Environment Southland.

11. INDEMNITY

11.1 Environment Southland shall indemnify South Port against all damage or loss resulting from any act or omission on the part of Environment Southland or its employees, contractors or invitees. Environment Southland shall compensate South Port for all expenses incurred by South Port in making good any damages to the Building or any other Building or property belonging to South Port resulting from any such act or omission.

12. NO NOXIOUS USE

12.1 Environment Southland shall not:

(a) Bring upon or store in the Building or allow to be brought upon or stored any machinery, goods of an offensive, noxious, illegal or dangerous nature except to the extent that it complies with all statutory requirements relating to the same.

(b) Use the Building or allow them to be used for any noisome, noxious, illegal or offensive trade or business.

(c) Allow any act or thing to be done which may be or grow to be a nuisance, disturbance or annoyance to South Port or other users of the Port facilities at Bluff or any other person and generally shall conduct its business in a clean, quiet and orderly manner free from damage, nuisance, disturbance or annoyance to any such persons but the carrying on by Environment Southland in a reasonable manner of the business use or any use to which South Port has consented shall be deemed not to be a breach of this clause.

13. DUTY OF NOTIFICATION

13.1 Environment Southland shall as soon as reasonably practicable provide notification in writing to the Port General Manager of any event comprising non compliance under clause 11 above by Environment Southland.

14. TERMINATION

14.1 This licence agreement shall be deemed to be terminated in the following circumstances:

(a) If the Licence Fee or any payment shall be in arrears for 21 days after any of the Licence Fee payment dates.

(b) The breach by Environment Southland of any covenant contained or implied herein such breach having continued for 21 days after notice by South Port to Environment Southland to rectify the same.

(c) If Environment Southland shall make or enter into or endeavour to make or enter into any composition, assignment or other arrangement for the benefit of its creditors.

(d) In the event of the insolvency or liquidation of Environment Southland but the termination of this deed shall be without prejudice of the rights of either party against the other.

15. ESSENTIALITY OF PAYMENTS

15.1 Failure to pay the Licence Fee or any other monies payable hereunder on due date shall be a breach going to the essence of Environment Southland's obligations under this deed. Environment Southland shall compensate South Port and South Port shall be entitled to recover damages from Environment Southland for such breach, such entitlement shall subsist notwithstanding any determination of the Licence Agreement and shall be in addition to any other right or remedy which South Port may have.

15.2 The acceptance by South Port of arrears of the Licence Fee or any other money shall not constitute a waiver of the essentiality of Environment Southland's continuing obligation to pay the annual Licence Fee and other monies.

16. ASSIGNMENT

16.1 This license is not transferable.

17. GENERAL

17.1 No warranty or representation expressed or implied has been made or is made by South Port that the Building is suitable or will remain suitable or adequate for the use by Environment Southland or that any use of the Building by Environment Southland will comply with the bylaws or ordinances or other requirements of any authority having jurisdiction.

18. WAIVER

18.1 No waiver or failure to act by South Port in respect of any breach by Environment Southland shall operate as a waiver of another breach.

19. NOTICES

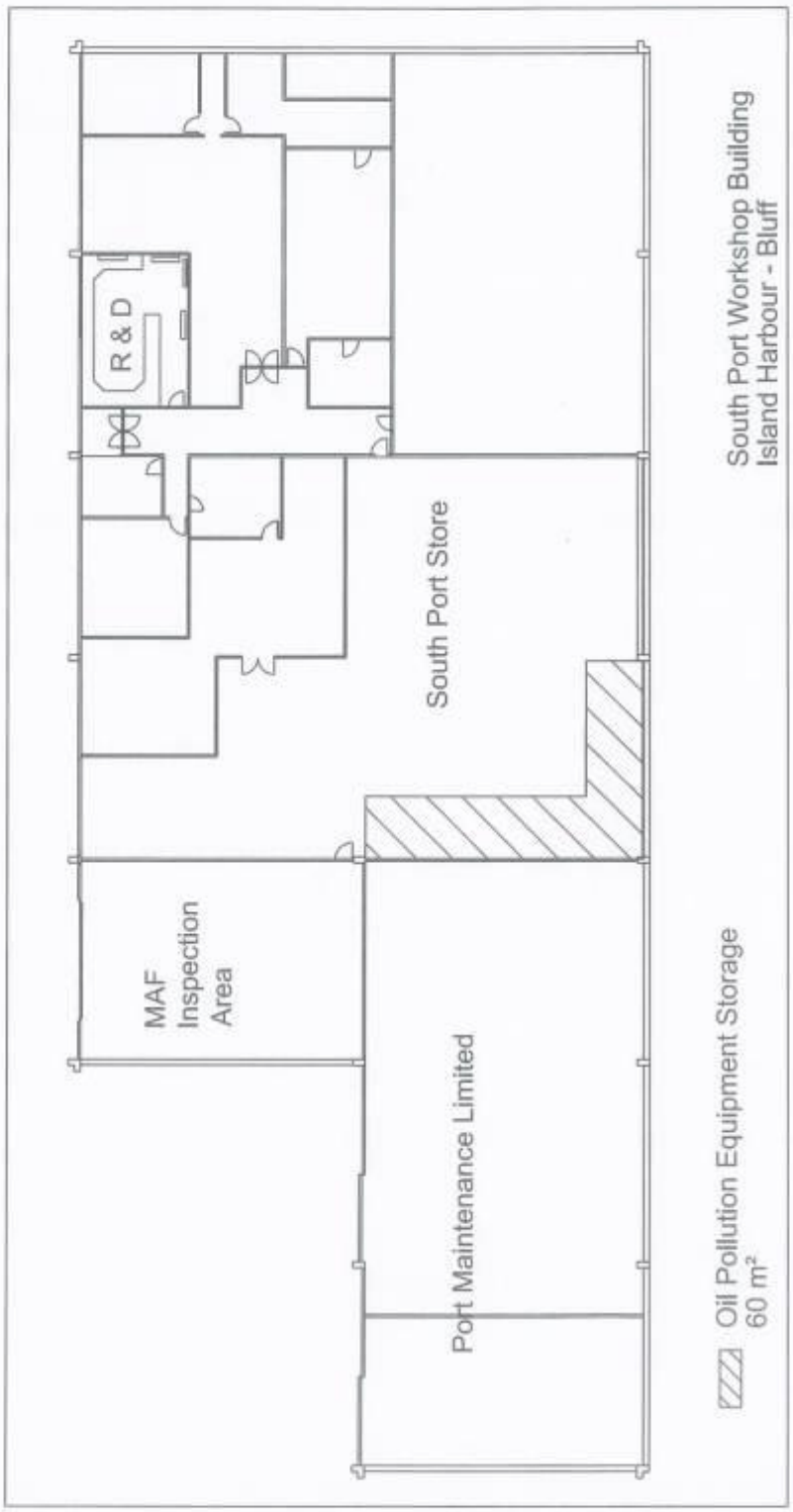
19.1 Any notices to be given to South Port or to Environment Southland hereunder shall be deemed to be sufficiently served if delivered or posted or sent by facsimile to the respective parties at the following addresses:

South Port New Zealand Limited
Administration Building, Island Harbour, Bluff
P.O. Box 1, Bluff.
Facsimile: (03) 212 8685
Telephone: (03) 212 8159

Southland Regional Council
Cnr North Road and Price Street, Invercargill
Private Bag 90116, Invercargill
Facsimile: (03) 211 5252
Telephone: (03) 211 5115

20. ARBITRATION

20.1 All disputes and differences between the parties shall be submitted to the arbitration of a single arbitrator if one can be agreed upon or to two arbitrators (one to be appointed by each party) and their umpire (appointed by them prior to their arbitration) such arbitration to be carried out in accordance with the provisions of the Arbitration Act 1996 or any then statutory provision relating to arbitration.


South Port Workshop Building
Island Harbour - Bluff
R & D
South Port Store
MAF
Inspection
Area
Port Maintenance Limited
Oil Pollution Equipment Storage
60 m²

Annex 6.12

See Morf A287410

MTA Sub Delegation for Lyndon Cleaver

Annex 7

Plan Administration

7.1 Controlled Copies

7.2 Plan Preparation, Exercising and Updates

1.3 Maritime New Zealand Approval

1.4 Amendments subsequent to Maritime New Zealand Approval (7 August 2015)

7.1 Controlled Copies

There are five controlled copies of the Plan held by the following parties:

No	Location
1	ES1 D Bradley, Regional On-Scene Commander, Environment Southland
2	ES2 K O'Sullivan, Harbourmaster & Alternate Regional On-Scene Commander, Environment Southland
3	ES3 W Tuckey, Alternate Regional On-Scene Commander, Environment Southland
4 & 5	Maritime New Zealand
6	ES electronic copy held in Morf fA20735
7	S Moran, Alternate Regional On-Scene Commander, Southland District Council also has an electronic copy.

7.2 Plan Preparation, Exercising & Updates

This Plan is prepared pursuant to Rule 130C, Marine Protection Rule prepared under the Maritime Transport Act.

Rule 130C sets out the minimum exercising requirements (at least two field exercises involving the deployment of equipment, at least one of which shall involve the production of an incident action plan and/or a site operations plan).

This Plan will be updated on an "as required" or "as requested" basis. The Plan was approved on 28 September 2018.

Rule 130C requires that the Plan be completely reviewed on a three-yearly basis.

7.3 Maritime New Zealand Approval

The Maritime New Zealand letter of approval for this Plan is attached (see **Annex 6.9**).

7.4 Amendments subsequent to Maritime New Zealand Approval (28 September 2018)

Annex 8

Response Forms

8.1 Pollution Incident Evaluation Form

8.2 Record of Oil Samples

8.3 Debrief - Model Agenda including Rules

8.4 Chain of Custody Form

8.5 Maritime NZ Site Safety Plan Form

8.6 Maritime NZ Logistics Request Form

8.7 Marine Oil Spill Response – Aerial Surveillance Log

8.8 Blank

8.9 Criteria for the Establishment of Temporary Restricted Airspace

8.10 Briefing Format I-SPEAC-Q

8.11 Shift Change-overs

8.12 Communications Plan

8.1 Pollution Incident Evaluation Form

Pollution Incident Evaluation Form

To be completed by person investigating the initial report and during clean up operation. Immediately forward the completed report to Environment Southland (see section 2.1 of the Regional Marine Oil Spill Contingency Plan for contact details)

Time:..... Date: .....

---

1. Name of person completing form:.....
2. Contact Details of person completing the form: .....

   .....
3. Type of pollutant:.....
4. Estimated

   Quantity: .....Litres/tonnes
5. Estimated Area Affected:..... m^2
6. Apparent Source of Pollution.....

   If vessel then state name: .....

   Owner/Agent:.....
7. Description of the oil slick:

i)	Barley visible	π	ii)	Silvery sheen	π	iii) Traces of color	π
iv)	Bright bands of color	π	v)	Dull	π	vi) Dark	π

8. Weather:
   Wind direction: ..... Speed (knots):.....

   Sea Conditions: .....
9. Tide: Ingoing/Outgoing
10. Have samples been taken: Yes/No, If yes, by whom?.....
11. Have photogIAPhs been taken: Yes/No, If yes, by whom?.....

8.2 Record of Oil Samples

	Sample 1	Sample 2	Sample 3	Sample 4
1. Identification mark of sample				
2. Date and time of taking sample				
3. Place where sample obtained				
4. How sample obtained				
5. Appearance of pollution in vicinity				
6. Question: Dispersant used prior to sample?				
7. Other remarks				
8. Name and signatures of persons taking samples				

8.3 Debrief – Model Agenda including Rules

Welcome

Chairperson/Facilitator Introduction

The Chairperson/Facilitator should introduce him/herself and explain why he/she is running the debrief. In the interests of openness and fairness, it simply not appropriate for the ROSC to run the debrief, no matter who he/she is or how objective he/she may be.

Apologies

Round the Room Introductions

Reason for Debrief

- Environment Southland is committed to continuous improvement
- Debrief is an important means to that end.

Objective

To review the response and to identify:

- areas that went well [need to be repeated in future responses (pluses) +]
- areas that could be improved in the future (deltas) △

Timeframe considered *(Start time/date – End time/date)*

Rules

- Open discussion – all view equally important.
- All comments made on a "without prejudice" basis.
- Brief and to the point comments.
- Not an opportunity to debate the merits of the comments, but we need to understand the point being made.
- Not here to apportion blame.
- Not here to establish cause of incident.

8.4 Chain of Custody Form



Chain of Custody Record.docx

8.5 Maritime NZ Site Safety Plan Form



V5 MNZ site safety plan.docx

Logistics Request Form

Date	Time
Logistics request form must be authorised by the section leader	
Request from ..... Person's name	☐ OPS ☐ PLANNING ☐ ADMIN ☐ LOGS
Date required by	Status of request: immediate ☐ or within ☐ hrs
Delivery location	
Request	
Supplier (if known)	Authorised by

To be completed by Logistics

Action taken	
Ordered from	
Contact name	Contact phone number .....
Purchase Order Number	Quote
Delivery details	
Replied to requester ..... Please sign	Transferred to Status Board ..... Please sign

8.7 Marine Oil Spill Response – Aerial Surveillance Log

Name:_____ Date:_____ Inc No_____ Log No:_____

Takeoff_____ Time_____ Onsite_____ Depart_____ Landed_____ Time_____

Location_____ Flight Crew_____

Tide: Next High Tide Bluff:_____ Site:_____

Next Low Tide Bluff:_____ Site:_____

Slick Obs : Name_____ Time (Start)_____ Time (Finish)_____

Map Ref:: Name:_____ Lat:_____ Long:_____

Map Ref:: Name:_____ Lat:_____ Long:_____

Map Ref:: Name:_____ Lat:_____ Long:_____

Direction:_____ Length:_____ Width:_____ Shape:_____

Colour: _____

Notes: _____

_____

_____

_____

_____

Boats on Site: _____

_____

Potential Impact on Shoreline: _____

Potential Impact on Wild Life: _____

Wildlife Casualties Found: _____

Weather Condition: Wind:_____ Air Temp:_____ Cloud:_____

Obs Altitude:_____ Sea Condition_____

_____

Boats on Site_____

Report Prepared By:_____ Signed:_____

8.8 Spill Assessment Form



Marine Oil Spill Assessment.docx

8.9 Criteria for the Establishment of Temporary Restricted Airspace

See National Plan Supporting Document – Control and Management of Incident Area

8.10 Briefing Format I-SPEAC-Q

BRIEFING FORMAT

I - SPEAC - Q

I INTRODUCTION

S SITUATION

P PLAN

E EXECUTION

A ADMINISTRATION AND LOGISTICS

C COMMAND AND COMMUNICATION

Q QUESTIONS

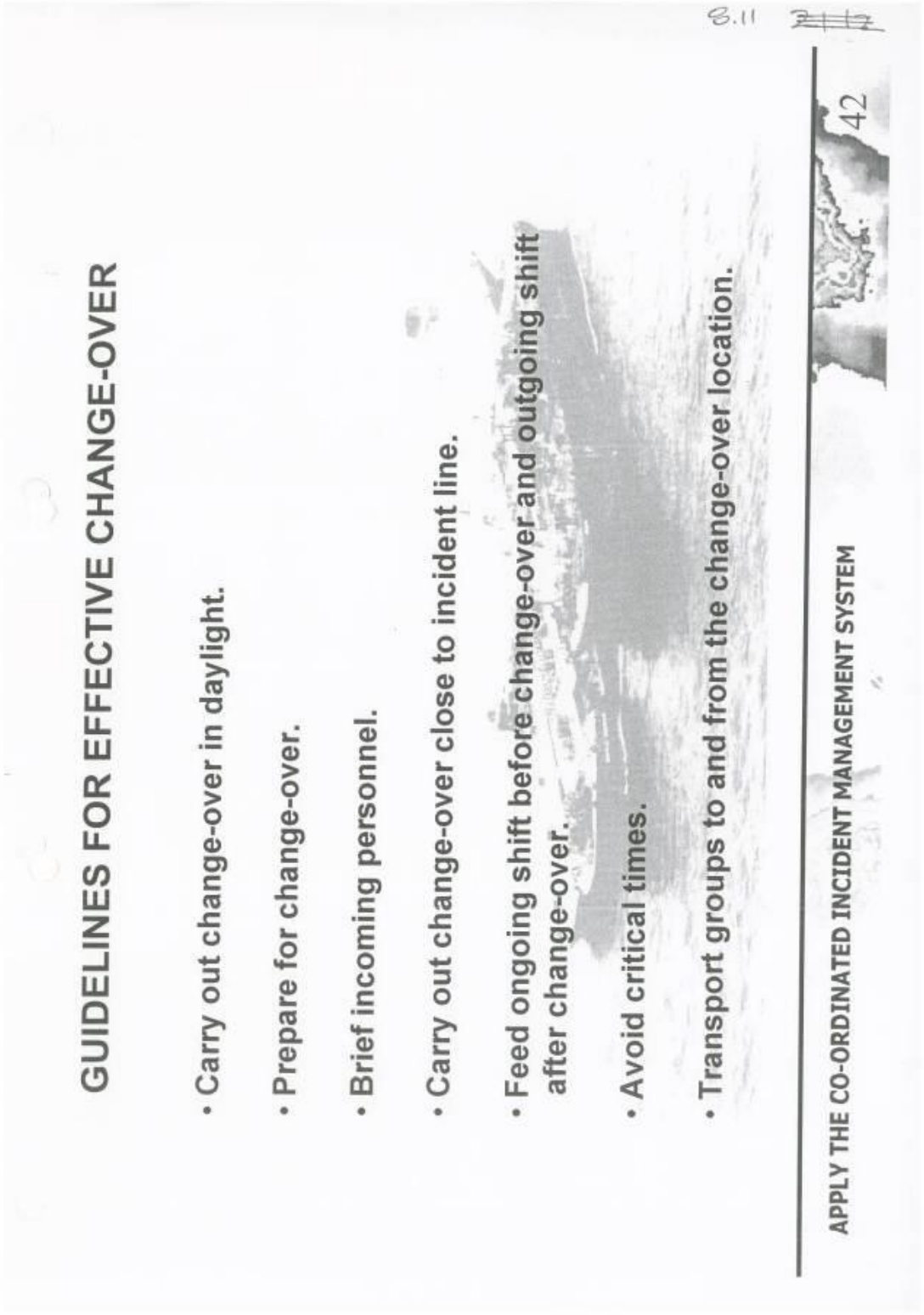
Use maps, display boards and other resources to support briefings.

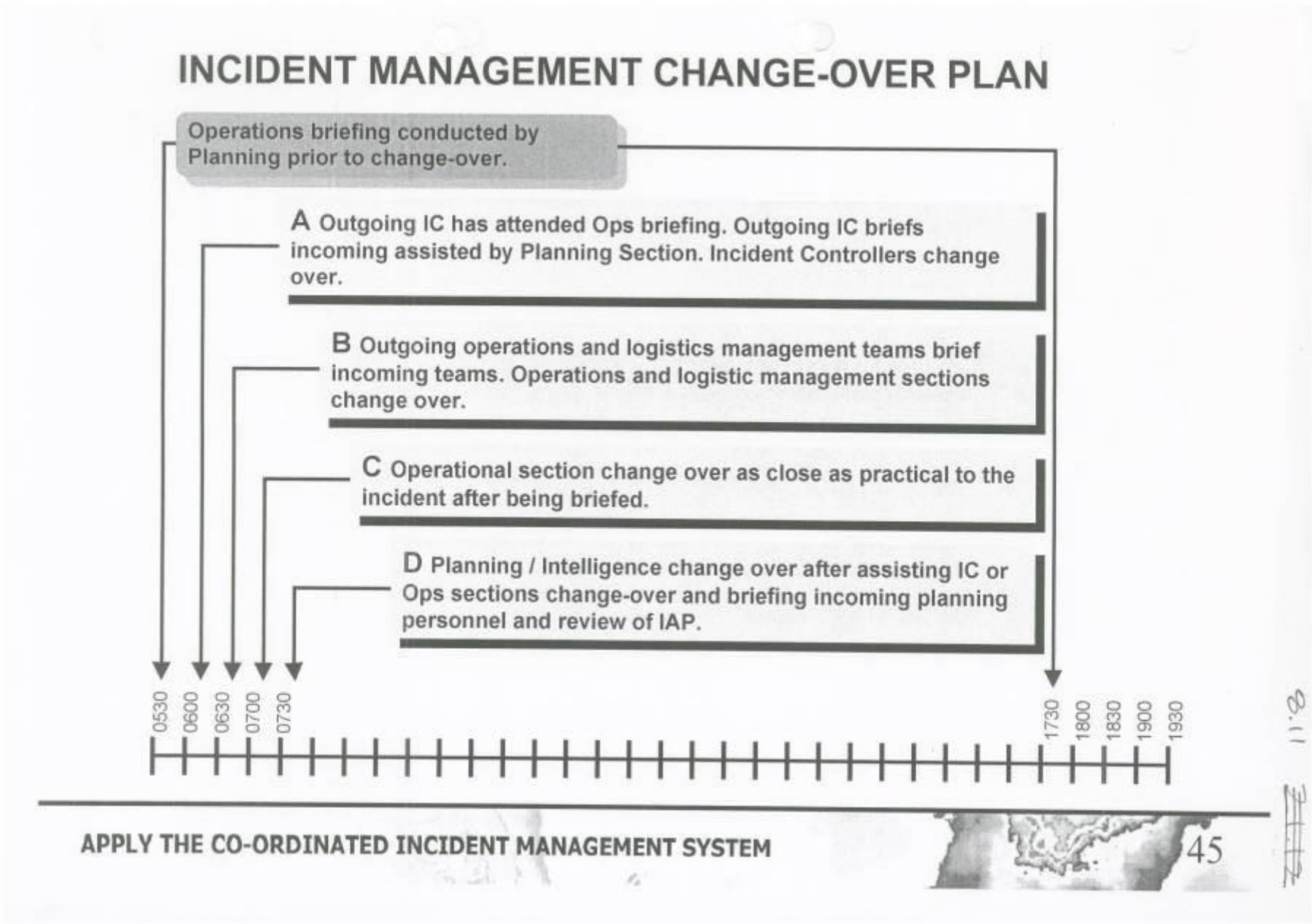
APPLY THE CO-ORDINATED INCIDENT MANAGEMENT SYSTEM

8.10 21.11

46

8.11 Shift Change-overs




INCIDENT MANAGEMENT CHANGE-OVER PLAN
Operations briefing conducted by Planning prior to change-over.
A Outgoing IC has attended Ops briefing. Outgoing IC briefs incoming assisted by Planning Section. Incident Controllers change over.
B Outgoing operations and logistics management teams brief incoming teams. Operations and logistic management sections change over.
C Operational section change over as close as practical to the incident after being briefed.
D Planning / Intelligence change over after assisting IC or Ops sections change-over and briefing incoming planning personnel and review of IAP.
0530
0600
0630
0700
0730
1730
1800
1830
1900
1930
APPLY THE CO-ORDINATED INCIDENT MANAGEMENT SYSTEM
45

8.12 Communications Plan

8.12 ~~Z.13~~

1. Incident Name	2. Operational Period Date Time	COMMUNICATIONS PLAN

3. Radio Channels *Assigned To*	*Function*	*Channel*	*Frequency*	*System*

4. Telephone *Assigned To*	*Landline*	*Cellphone*	*Fax*	*Comments*

6. Other (eg email, Satphone, etc)		

7. Prepared by:	Date/Time

Incident Action Plan Ver: Oct 2001 National Rural Fire Authority