

WILDERNESS AND REMOTENESS VALUES OF FIORDLAND WATERS



**PREPARED FOR
ENVIRONMENT SOUTHLAND TE TAIAO TONGA**

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LIST OF ABBREVIATIONS

AIS	Automatic identification system
CMA	Coastal marine area
CSWA	Commercial surface water activity
DOC	Department of Conservation Te Papa Atawhai
ECOS	Ecotourism Opportunity Spectrum
ES	Environment Southland Te Taiao Tonga
FMG	Fiordland Marine Guardians
FNP	Fiordland National Park
IUCN	International Union for Conservation of Nature
MACA	Marine and Coastal Area (Takutai Moana) Act 2011
MOP	Milford Opportunities Project
NZCPS	New Zealand Coastal Policy Statement
NZMOE	New Zealand Marine Opportunities Experience
NZROS	New Zealand Recreation Opportunity Spectrum
RMA	Resource Management Act
ROS	Recreation Opportunity Spectrum
SMRO	Spectrum of Marine Recreation Opportunity
TAMI	Te Ao Mārama Incorporated
TEK	Traditional ecological knowledge
TOS	Tourism Opportunity Spectrum
WALROS	Water and Land Recreation Opportunity Spectrum

EXECUTIVE SUMMARY

Study purpose and objectives

Environment Southland Te Taiao Tonga (ES) is preparing to review the Regional Coastal Plan for Southland, including a potential plan change relating to the management of commercial surface water activities within the Fiordland Coastal Marine Area (CMA). This is because it has been recognised that the Fiordland CMA is under pressure from vessel activity and the wilderness and remoteness values of the fiords are at risk of being eroded. This study provides recreation and tourism information to support the plan review and plan change process.

This study aims to understand wilderness and remoteness values for the fiords in order to address three study objectives:

1. Describe wilderness and remoteness values for each of the five fiord complexes.
2. Identify effects (if any) from commercial boat activity upon wilderness and remoteness values.
3. Discuss how increasing commercial boat activity may impact on these values.

Study method, scope and limitations

Wilderness and remoteness values in this study relate to the recreation and tourism experience of the fiords. The *geographical scope* is the coastal marine environment within the fiords including the whole of the fiord complex (head to entrance/s).

This study gathered information in six ways:

1. Review of relevant legislation, policy and plans.
2. Review of the international research literature.
3. Collation of existing knowledge (data and reports focused on Fiordland).
4. Interviews with 27 key informants: primarily commercial tourism and charter boat operators.
5. Engagement with Te Ao Mārama Incorporated (TAMI) through a facilitated process to ensure a Ngāi Tahu ki Murihiku perspective.
6. Input from the Fiordland Marine Guardians (FMG).

Study limitations were that:

- No tourists/recreationists were interviewed (at the time of the study, New Zealand's borders were closed to international visitors and Auckland was in lockdown owing to the Covid pandemic, dramatically altering the visitor patterns to Fiordland).
- Interviewees had a vested interest in the outcome of Council's plans (most hold permits for commercial surface water activity).

Planning context

The operative Regional Coastal Plan for Southland 2013 (the Plan) seeks to maintain the essential characteristic of the pristine Fiordland CMA including its remoteness and wilderness values. To ensure that recreation and tourism boats do not adversely affect the intrinsic values of the Fiordland CMA, the Plan requires a coastal permit for commercial surface water activities (eg. taking paying passengers out into the fiords in a vessel). No requirements are set out for recreational (non-commercial) use.

The Plan sets limits for commercial surface water discretionary activity for Doubtful Sound/Patea (which has been exceeded), but not for other fiords (effectively focusing use in Milford Sound/Piopiota). The Plan seeks to manage noise effects associated with surface water activities to avoid compromising the tranquillity and peacefulness of Fiordland. It also seeks to integrate the management of the internal waters of Fiordland with the adjoining National Park.

Other relevant public policy includes:

- Fiordland National Park Management Plan 2007 – sets out management intentions for Fiordland National Park which adjoins the Fiordland CMA.

- The relationship of manawhenua with the Fiordland CMA and their engagement with the management of the area is expressed within legislation and planning documents, including Te Rūnanga o Ngāi Tahu Act 1996, Ngāi Tahu Claims Settlement Act 1998, the Marine and Coastal Area (Takutai Moana) Act 2011, and Te Tangi a Tauira: The Cry of the People – Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008.
- The Fiordland (Te Moana o Atawhenua) Marine Management Act 2005 – established the Fiordland (Te Moana o Atawhenua) Marine Area, eight new marine reserves (bringing the total to ten Fiordland marine reserves), a number of small, discrete significant areas known as ‘china shops’, and a unique management regime led by the Fiordland Marine Guardians.

Also relevant is the Milford Opportunities Project (MOP), a multi-agency approach to develop long-term solutions for the management of Milford Sound/Piopiotaahi.

International research literature review

Most descriptions of wilderness and remoteness values are focused on natural environments with little evidence of human modification. This contrasts with the Fiordland waters where motorised transport is required for access (most often provided by commercial operators) and supporting infrastructure exists to facilitate use of the fiords. These characteristics also apply to wilderness marine environments elsewhere and explain why the large body of crowding research (that is primarily terrestrial based) cannot be transferred to marine environments. Crowding relates to the impacts of others upon the visitor experience.

The research literature displays a gap with respect to the impact of perceived crowding on the experiences of visitors on board boats in coastal and marine wilderness environments.

Fiordland-based studies undertaken over the past 15 years indicate that the dimensions of wilderness found in the international research apply to Fiordland. Visitors to Fiordland and its CMA place very high value upon viewing scenery, which exceeds many visitors’ expectations.

Recreation and tourism activity within the fiords

Interviewees provided a picture of recreation and tourism in the fiords.

Activity levels have dramatically changed from pre-Covid times (prior to March 2020) to the current Covid period, as a result of travel restrictions internationally and domestically. This has seen a significant drop in activity in Milford Sound/Piopiotaahi associated with the loss of international visitors, and a dramatic increase in New Zealanders taking tourism/charter trips in Tamatea/Dusky Sound and the Southern fiords. Private recreational boat activity also has increased in the fiords.

Long-term changes include the use of larger vessels and a greater diversity of boat types, extended periods of use, wider geographic dispersion of boats, and increased use of aircraft access to fly boat passengers in and out.

Activity levels and types of use vary between the five fiord complexes. Covid-related changes have altered the relative activity levels between the fiords with Tamatea/Dusky Sound experiencing the most significant growth.

Description of the fiords

For Ngāi Tahu ki Murihiku, Te Mimi o Tū Te Rakiwhānoa (Fiordland CMA) has many deeply held values. Ngāi Tahu Murihiku has developed a vision for Te Mimi o Tū Te Rakiwhānoa which includes (amongst other things) that its future management incorporates humans as part of nature, as opposed to separate from it. Historical use includes journeying through the fiords and contemporary use includes mahinga kai, and both customary and commercial purposes. It is a place that brings whakapapa, people and ahi kaa (continuous occupation) together.

Features that are universal across all fiords include: a very high degree of naturalness, outstanding scenery, large scale (area size and landform), challenging weather, adjoins Fiordland National Park, and simply the uniqueness of Fiordland.

Features that differ geographically include: difficulty of access, activity level, remoteness, human-built infrastructure, natural quiet, type of landscape, extent of connected fiord waterways (fiord complex), and proximity to formally protected areas (Wilderness Areas, Marine Reserves).

Wilderness and remoteness values of the fiords

There was a large degree of congruence amongst interviewees about the wilderness values of the fiords, most commonly defined as the absence of people and human modification.

Elements of wilderness value derived from research elsewhere were all found to apply to the Fiordland waters: remoteness, naturalness, minimal human presence, natural quiet, aesthetic appreciation/scenery, conservation-related activity and personal experience. Least applicable was conservation-related activity (including the presence of protected areas), perhaps because Fiordland National Park surrounds all fiords minimising the effect from the presence of Wilderness Areas and Marine Reserves. Scale was found to be an important element associated with the fiords that was not highlighted in the research literature. This element encapsulates the large size of Fiordland and the nature (steep sides) of the fiord landscape.

Remoteness can be considered one element of the overarching value of wilderness, rather than a distinct value in itself. Nonetheless, it is a very significant element for the fiords because of the difficulty of access associated with the daunting physical environment and weather, and lack of self-drive access with the exception of Milford Sound/Piopiotahi.

Many interviewees voiced the need for a balance between protecting wilderness value and enabling people to visit Fiordland – showing common agreement about the management problem.

Impacts upon wilderness and remoteness values

While interviewees broadly agreed upon the fiords' wilderness value, they differed about whether wilderness value has been compromised by current levels and types of recreation and tourism activity. Across the set of interviewees, some believe that wilderness values of the fiords have already been lost; others believe they remain unaffected by changes in use.

The most common concern is the increasing number of people and boats. This was described in three ways: (1) vessel numbers and visibility, (2) human structures, and (3) people at landing sites. A particular hot issue was moorings.

Operators and their clients

Tourism and charter operators moderate their clients' experience of wilderness. Most common is avoidance of other boats (to minimise encounters), and interpretation and education.

Tourism and charter operators exhibit a strong attachment to the fiords and describe the sector as becoming more environmentally friendly (although it was also suggested by some that informal on-water 'codes of conduct' may be weakening). Some tourism/charter companies support conservation projects and many market the fiords for their wilderness values (or fishing).

Implications for increasing boat activity

Study findings relating to each of the study objectives are summarised below.

Study objective 1: Describe wilderness and remoteness values for each of the five fiord complexes

As described above, the nature of wilderness value for the fiords is broadly agreed by the 27 people interviewed for this study, remoteness was found to be a key element of wilderness (rather than a value in itself), and some differences in wilderness and remoteness values are attributed to specific fiords.

Insight into the significance of the fiords gained from interviews suggests that Fiordland waters may hold international significance for their wilderness value with tourism/charter operators.

While this study focused solely on experiential values, the Fiordland CMA is also likely be valued for non-use reasons (eg. intrinsic value). Non-use values may be more important than experiential values, and may be impacted by the known presence and behaviour of people in the fiords; however, these matters were not investigated in this study.

Study objective 2: Identify effects (if any) from commercial boat activity upon wilderness and remoteness values

Impacts related to boat activity include:

- Seeing other boats/other people (visual intrusion) was the most significant impact on wilderness experience values, although the cumulative effect of increased recreation/tourism activity was important.
- Increased visibility of boats given vessels are bigger.
- More frequent encounters (more boats, travel faster/more movements).
- Boats present in remote locations for longer; use being displaced to previously little-used fiords (especially Northern fiords); leaving boats on (increasing number of) moorings.
- Air access into remote fiords associated with boat cruises.
- Crowding on moorings and at anchorages – health and safety issue.
- Possible loss of boatie etiquette on the water.

A *wilderness use conundrum* is evident – the desire to go somewhere with no/few other people and, by doing so, increasing the chance for others to see people. This is compounded by the requirement for motorised access, impacting on natural quiet.

There was general agreement about the management problem, commonly described as the need to balance the protection of wilderness values with the opportunity for people visit Fiordland. But no agreement that there is an imbalance – that the level and type of use is adversely impacting the wilderness experiential values of the fiords.

Perceptions of the acceptability of use levels and patterns vary: an *acceptability continuum* is evident. At one end, are those who believe wilderness values have already been lost (some say irretrievably) and at the other end are those who believe that current use is not affecting wilderness values of the fiords.

The inter-related elements of wilderness and impacts upon them represent a *wicked problem* (multiple and competing goals with uncertainty about cause/effect relationships). Furthermore, the situation is *messy* (problems that are interconnected – solving one problem will affect another). For example, visitors may value both wilderness and desire (motorised) access – values in conflict with each other. This presents the challenge of measuring trade-offs between (conflicting) values when evaluating acceptable use levels, making it difficult to determine carrying capacity.

Study objective 3: Discuss how increasing commercial boat activity may impact on these values

This study concludes that an increase in boat activity will exacerbate the impact of recreation and tourism activity on wilderness value for the fiords. Specifically:

- The existing amount and type of boat activity is eroding wilderness values for some people. More boat activity will exacerbate this impact.
- It is likely that increased activity will shift people along the acceptability continuum such that they perceive the extent of activity as unacceptable. However, the relationship between the amount/type of boat activity and the proportion of people believing that activity is unacceptable is not clear (carrying capacity is beyond the scope of this study).
- Allocated but unused permits for commercial boat-based tourism represent a ‘wild card’ that could increase use in an uncontrolled manner.
- Use pressure is from various types of boat users, both commercial and private/recreational.

Recreation and tourism activity in the fiords has been shaken up by long-term trends and Covid-related effects such that:

- Displacement is occurring – owing to levels and types of activity, boats are shifting into more remote fiords in order to offer their clients a wilderness experience.
- The role of Milford Sound/Piopiotaahi as a ‘sacrificial’ fiord protecting other fiords has been diminished as the nature of fiord use has changed and use in the more southern fiords has increased (especially Tamatea/Dusky Sound).
- Factors that have traditionally constrained use (notably weather and access) remain; however, technology improvements (to boats in particular) and the increase in domestic tourism products has made it easier to visit.
- Changes implemented as part of the Milford Opportunities Project with respect to Milford Sound/Piopiotaahi may have flow-on effects for other fiords.

- Business (and consent) ownership changes (particularly in the charter sector) may lead to further shifts in use and behaviours.

Management considerations

This study has highlighted many factors that are relevant to ES's decision making, including:

- Patterns of use will continue to change especially once New Zealand's border re-opens to international visitors.
- Long-term trends suggest that use patterns have been changing, including changes in vessel design and use of the fiords resulting in greater geographical coverage (more fiords being visited more often) by an increasingly diverse set of vessels/users. Growth in use includes both commercial and private recreational boats. Some pinch points are evident at moorings/anchorages, land access points (at Milford Sound/Piopiotaahi, Doubtful Sound/Patea), heli-access points, and visitor attraction landing sites.
- Commercial boat use was positively construed – interviewees felt strongly that people should be enabled to visit Fiordland. Given the difficulty of access, most people use a commercial operator to visit the fiords.
- Impact factors are inter-related. Changing one thing has flow-on effects – it is like pulling a thread.
- Concern about un-used consent allocation: a loose cannon that could 'blow' and exacerbate use pressures.

Specific management matters that were raised in interviews include the increase in unconsented moorings, other permanent structures, and the presence of large cruise vessels in the fiords.

With respect to process, operators are keen to help ES – they believe they offer local knowledge and the ability to foresee potential ramifications and flow-on effects from any proposed regulations. Some operators explicitly stated that they are aware that limits may be applied or increased – that they have been expecting this process.

Specific management ideas from interviewees for ES have been compiled separately to this report.

1 INTRODUCTION

1.1 PURPOSE AND SCOPE

Environment Southland Te Taiao Tonga (ES) commissioned this study to provide technical recreation and tourism¹ support for its review of the Regional Coastal Plan for Southland 2013. Information from this report will feed into that review process including a potential plan change relating to section 16.2 which provides direction for the management of commercial surface water activities² within the Fiordland Coastal Marine Area (CMA). This is because it has been recognised that the Fiordland CMA is under pressure from vessel activity and the wilderness and remoteness values of the fiords are at risk of being eroded.

The study's aim is to understand wilderness and remoteness values for the fiords in order to address three study objectives:

1. Describe wilderness and remoteness values for each of the five fiord complexes.
2. Identify effects (if any) from commercial boat activity upon wilderness and remoteness values.
3. Discuss how increasing commercial boat activity may impact on these values.

Values referred to in this report are *experiential values*. They are described by way of perceptions (of place) and developed through experiences. This complements, but differs to, the description of a place through an ecological lens or a definition of naturalness that excludes human perception.

Fiord users were interviewed for this study. They were asked about their perceptions of wilderness and remoteness in the fiords, the level and patterns of fiord use, and whether use was affecting fiord wilderness and remoteness values. Section 1.2 describes the selection of interviewees.

Fiord complexes refers to five distinct geographical areas of Fiordland (Table 1.1, Figure 1.1). The geographic focus for this study is the coastal marine environment within the fiords including the whole of the fiord complex (head to entrance/s).³

Table 1.1: Fiord complexes including locations referenced in the report

Fiord complex	Fiords and specific locations
Milford Sound/Piopirotahi	Milford Sound/Piopirotahi Locations: Anita Bay, Harrisons Cove, Freshwater Basin, Deepwater Basin
Northern fiords	Te Hāpua/Sutherland Sound, Hāwea/Bligh Sound, Te Houhou/George Sound, Taitetimu/Caswell Sound, Taiporoporo/Charles Sound, Hinenui/Nancy Sound
Doubtful Sound/Patea complex	Te Awa-o-Tū/Thompson Sound, Kaikiekie/Bradshaw Sound, Doubtful Sound/Patea Locations: Precipice Cove, Gaer Arm, Deep Cove, Hall Arm, First Arm, Crooked Arm, Secretary Island
Tamatea/Dusky Sound complex	Te Puaitaha/Breaksea Sound, Tamatea/Dusky Sound, Te Rā/Dagg Sound Locations: Cascade Cove, Luncheon Cove, Supper Cove, Vancouver Arm
Southern fiords	Taiari/Chalky Inlet, Rakituma/Preservation Inlet, Moana-whenua-pōuri/Edwardson Sound, Te Korowhakaunu/Cunaris Sound, Isthmus Sound, Te Awaroa/Long Sound Locations: Puysegur Point

¹ For the purposes of this study, tourism means commercial recreation.

² Commercial surface water activities use a boat on a commercial basis; for example, to take paying passengers into the fiords (commercial fishing and ships over 1000 gross tons are excluded). They require a consent from Environment Southland Te Taiao Tonga to operate in the fiords.

³ This differs from: (1) *internal waters of Fiordland*, a term used to define inner fiord waters demarcated by habitat boundary lines, from which commercial fishing is prohibited (Fiordland Marine Guardians 2021); and (2) *internal waters of New Zealand*, defined in the Regional Coastal Plan for Southland 2013 as having the same meaning as in Section 4 of the Territorial Sea and Exclusive Economic Zone Act 1977 (ie. "any areas of the sea that are on the landward side of the baseline of the territorial sea of New Zealand", the baseline being defined in Section 5(1) of the Act as "the low-water mark along the coast of New Zealand, including the coast of all islands" with some exceptions described).

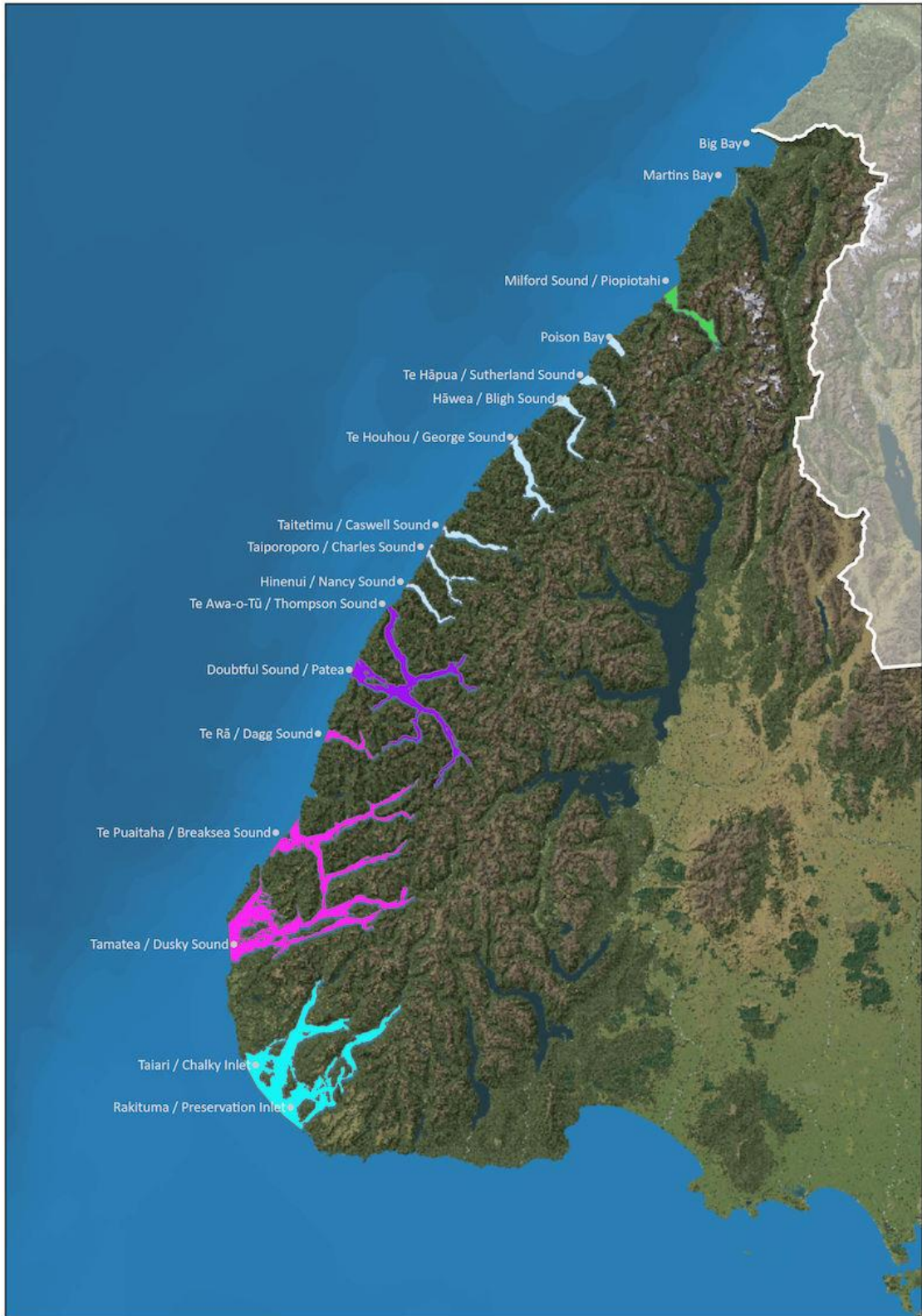


Figure 1.1: Map of Fiordland waters

1.2 METHOD

This study gathered information in six ways (Table 1.2):

1. Review of relevant legislation, policy and plans (see section 2): synthesised the legislation, policy and plans that influence recreation and tourism in Fiordland waters (undertaken by Southern Land and Water Planning – see Robertson and Graham 2022).
2. Review of the research literature (see section 3): summarised the theoretical research literature with respect to key aspects of this study. Relevant Fiordland research was included.
3. Collation of existing knowledge: brought together existing knowledge from data and reports focused on Fiordland, especially the grey (unpublished) literature (undertaken by Southern Land and Water Planning – see Robertson and Graham 2022).
4. Interviews with key informants: undertaken with 27 people to inform understanding of wilderness and remoteness values of the fiords.
5. Engagement with Te Ao Mārama Incorporated (TAMI): used a facilitated process so that TAMI could provide a Ngāi Tahu ki Murihiku perspective on the work.
6. Involvement of the Fiordland Marine Guardians (FMG): received their input at the beginning and end of the study.

Table 1.2: Study methodology

Approach	Details
Review of legislation, policy and plans	
Synthesised relevant legislation, policy and plans	See Robertson and Graham (2022) for a synopsis of this material. Legislation, case law, policy and planning documents were reviewed and relevant aspects summarised. Key information from Robertson and Graham (2022) is presented in section 2 of this report.
Review of research literature	
Searched the international research literature, including Fiordland-specific research	Google Scholar and a library search identified refereed journal articles, outdoor recreation and tourism textbooks/scholarly books and reports. Key words included: experiential values, outdoor recreation, tourism, tourist, marine tourism, coastal and ocean recreation, wilderness, remoteness, encounter/s, crowding, conflict. Particular focus was given to marine areas similar to Fiordland. The summary of this literature is presented in section 3 of this report.
Collation of existing knowledge	
Reviewed existing sources of information about fiord use and values	See Robertson and Graham (2022) for a synopsis of this material. Relevant management agencies were contacted to obtain reports and data. Environment Southland Te Taiao Tonga commercial surface water activity consents data was analysed and summarised by fiord complex. Information from Robertson and Graham (2022) is woven into relevant sections of this report.
Interviews with key informants	
Gathered perceptions and use data from people familiar with the fiords	Interviewees were selected from different types of user (eg. tourism operator, charter boat operator, researcher, commercial fisher) to ensure diversity of views, and from people familiar with different fiords to ensure wide geographic coverage. People with a long experience of Fiordland were targeted. An initial selection of interviewees was made from Environment Southland's database of permit holders. The selection was augmented (beyond permit holders) and reviewed by a couple of Fiordland Marine Guardians who helped ensure the sample provided a wide range of perspectives. A total of 22 interviews were conducted with 27 people:

Approach	Details
	<ul style="list-style-type: none"> • Face to face interviews with 16 people (11 interviews) and telephone/virtual interviews with 11 people (11 interviews). • 4 interviews conducted with multiple people – 3 interviews with 2 people and 1 interview with 3 people. <p>An interview script (questions) was followed (see Appendix 1) and interviews were recorded (audio) for later transcription.</p> <p>Interviewees' names remain confidential and their words anonymous (not attributed). This was done to encourage free and frank responses – see Appendix 2 for Consent Form.</p> <p>Interview data were analysed thematically.</p> <p>Interview findings are presented in relevant sections of this report.</p>
Engagement with TAMI	
Undertook a facilitated process with Te Ao Mārama Incorporated	<p>Two Hui with Te Ao Mārama Board members were held to discuss how to ensure a Ngāi Tahu ki Murihiku perspective within the report and to gather information for inclusion in the report.</p> <p>Check-ins with TAMI staff were undertaken through the study process.</p> <p>Board members reviewed an early report draft and provided comment.</p> <p>This information is interwoven throughout this report.</p>
Liaison with FMG	
Gained input from the Fiordland Marine Guardians	<p>Two meetings with the Guardians were held (virtually) to hear their views.</p> <p>An initial meeting gathered Guardians' views on fiord wilderness and remoteness values, and Guardians provided comment on an early draft report.</p> <p>Input is reflected, as appropriate, throughout the report.</p>

1.3 KEY INFORMANT INTERVIEWS

Twenty-two (22) interviews were conducted with 27 people:

- Cruise tourism operators (4 interviews)
- Tourism/charter cross-over operators (3 interviews)
- Charter boat operators (5 interviews)
- Other water-based tourism operators (2 interviews)
- Aircraft tourism operators (3 interviews)
- Commercial fishers (2 interviews)
- Other (education, research, pilot services) (3 interviews)

Limitations associated with interviews include:

- No tourists/recreationists were interviewed. At the time of the study (November 2021), New Zealand's borders were closed to international visitors and Auckland was in lock-down owing to the Covid pandemic, dramatically altering the visitor patterns to Fiordland. Tourism/charter operators were asked about their visitors' perceptions (see section 8.2).
- Most interviewees have a vested interest in the outcome of ES decisions about commercial surface water activity because they are commercial users, many of whom hold existing consents. Some had applied recently for new/expanded consents, others had sold or purchased consents/businesses recently.
- For these reasons, the sample of interviewees is not representative of the Fiordland user population. Within these limitations, care was taken to include key types of user to ensure as wide a range of views as possible.
- Management agencies were not interviewed. This report is about the experience of users not the agencies that manage the resource.

In this report, direct quotes are used to illustrate points and are presented in italic font with double quote marks, ie. *“quote”*. Where text has been added for clarification purposes, this is indicated by square brackets, ie. [text not part of original quote].

1.4 CULTURAL CONTEXT

Western conceptions of wilderness have historically ignored the presence and role of indigenous people in the environment, although a shift is underway to embrace indigenous people’s traditional use within the definition of wilderness (see section 3.4.4). This deficiency is evident within this study where the concept of wilderness relies heavily upon the absence of people.

Ngāi Tahu Murihiku wish to see the lands, waters and biodiversity of Fiordland managed in a way that is consistent with indigenous concepts of wilderness – whereby humans are a part of nature, as opposed to separate from it, and sustainable customary use is consistent with its protection.⁴

Any concept of wilderness that ignores Ngāi Tahu Murihiku people’s long association of use and beliefs within Fiordland is culturally deficient and incomplete. The fiords are rich with Ngāi Tahu traditional knowledge and taonga. Sharing this knowledge is not always desirable (eg. location of taonga) and where it is appropriate (eg. educating visitors about Ngāi Tahu traditions) it is sometimes done poorly or not at all.

Ngāi Tahu ki Murihiku cultural context with respect to the fiords is provided in section 5.2.

1.5 STUDY SCOPE AND CAVEATS

Out of scope:

- Environment (biophysical) impacts from recreation and tourism activity – the focus for this study is social impacts (related to people’s experience of wilderness and remoteness).
- Management responses to the adverse effects identified within this report – management suggestions from interviewees have been separately provided to ES.
- Assessment of significance for the fiords – while this assessment was out of scope, material to inform an assessment of significance for the Fiordland waters is presented in section 9.1.

Caveats:

- Covid has affected patterns of use – as noted above, during this study Auckland was in lockdown whilst the border had been closed to international visitors since 20 March 2020. It is unclear what will happen to use patterns once New Zealand’s borders re-open.
- The study focus is on values associated with recreation and tourism experiences – examination of non-use values is out of scope, although these values are discussed briefly in order to provide context (section 3.4.1).
- Limitations associated with the selection of interviewees are discussed in section 1.3.

1.6 REPORT OUTLINE

Following the **introduction** (section 1), **study context** is provided by way of a description of relevant legislation and planning documents (section 2), and an international research literature review that provides theoretical context for this study (section 3). Drawing on interview data, **recreation and tourism activity** within the fiords is described in section 4, while a description of the fiords as **recreation and tourism settings** is given in section 5.

Subsequent sections address the three **study objectives**:

⁴ Te Tangi a Tauria: The Cry of the People – Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008.

- Section 6 describes the wilderness and remoteness values of the fiords (**study objective 1**).
- Section 7 discusses impacts upon these values (**study objective 2**).
- Section 8 brings together information about commercial operators and their views on their clients' perceptions and motivations.
- Section 9 outlines the implications associated with increasing commercial boat activity in the fiords (**study objective 3**). Also, this concluding section summarises the study's findings for all three study objectives and outlines management considerations.

A list of **References** follows. Then three **Appendices** present technical information relating to the interviews (question script and consent form) and a review of recreation opportunity planning frameworks that supplements the discussion of these planning tools within the Literature Review (section 3).

2 PLANNING CONTEXT

This section provides legislative, policy and planning context for this study. A more detailed synopsis is provided by Robertson and Graham (2022).

2.1 SUMMARY

This study sits within a Resource Management Act context, specifically it addresses aspects of the Regional Coastal Plan for Southland 2013 (the Plan). The operative Plan seeks to maintain the essential characteristic of the pristine Fiordland CMA including its remoteness and wilderness values. Plan objectives protect the opportunity for remoteness and wilderness experiences and seek to ensure that commercial and private recreational surface water activities do not adversely affect the intrinsic values of the Fiordland coastal environment. Fiordland commercial surface water activities (eg. taking visitors out into the fiords in a vessel) requires a coastal permit under the Plan. Non-commercial (recreational) use is not controlled under the Plan; a code of practice is seen as the most effective way to mitigate effects from recreational users. The Plan focuses use in Milford Sound/Piopirotahi (no activity limits); only the Doubtful Sound/Patea fiord complex has commercial surface water activity discretionary activity limits. The current level of activity has exceeded the limit for the number of discretionary activities. The Plan also provides direction on the management of noise effects associated with surface water activities, with the Plan seeking to avoid noise that compromises the tranquillity and peacefulness of Fiordland CMA.

The Department of Conservation Te Papa Atawhai manages the land down to mean high water mark as Fiordland National Park, and the Plan seeks to integrate the management of the internal waters of Fiordland with the adjoining National Park. Amongst other matters, Fiordland National Park Management Plan 2007 sets out management intentions for the gazetted wilderness areas that adjoin the Fiordland CMA (Glaisnock and Pembroke) and the proposed wilderness area (South West/Cameron Remote Area) which is managed in recognition of its wilderness values, and adjoins large parts of Tamatea/Dusky Sound and the Southern fiords.

The relationship of manawhenua with the Fiordland CMA and their engagement with the management of the area is expressed within legislation and planning documents, including Te Rūnanga o Ngāi Tahu Act 1996, Ngāi Tahu Claims Settlement Act 1998, the Marine and Coastal Area (Takutai Moana) Act 2011, and Te Tangi a Tauira: The Cry of the People – Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008.

The Fiordland (Te Moana o Atawhenua) Marine Management Act 2005 established the Fiordland (Te Moana o Atawhenua) Marine Area, eight new marine reserves (bringing the total to ten Fiordland marine reserves), a number of small, discrete significant areas known as 'china shops', and a unique management regime led by the Fiordland Marine Guardians.

Also relevant is the Milford Opportunities Project (MOP), a multi-agency approach to develop long-term solutions for the management of Milford Sound/Piopirotahi. The project launched a masterplan for Milford Sound/Piopirotahi in July 2021 that makes recommendations to ensure: *"Milford Sound Piopirotahi maintains its status as a key New Zealand visitor icon and provides a world-class visitor experience that is accessible,*

*upholds the World Heritage status, national park and conservation values and adds value to Southland and New Zealand Inc.*⁵

2.2 RESOURCE MANAGEMENT LEGISLATION, POLICY AND PLANS

The purpose of the Resource Management Act 1991 (RMA) is “to promote the sustainable management of natural and physical resources” (RMA s5). The Act defines the meaning of *sustainable management* as a balance between the natural and physical environment and people and communities’ well-being. This balance is evident within the ‘problem’ this report has been asked to examine – use of the Fiordland CMA and protection of its wilderness and remoteness values.

Within the hierarchy of resource management planning documents, regional coastal plans manage activities that occur on the surface water in the CMA. Regional Councils are responsible for the control of activities in relation to the surface of coastal water. The emphasis in the CMA is different to the approach for land-based activities under the RMA. For land, any activity may be undertaken unless it is expressly disallowed in a district plan. For the CMA, the opposite applies – many activities may only be undertaken if expressly allowed. Section 12 of the RMA restricts what can be done in the CMA. Unless certain matters specified in this section are provided for in the Coastal Plan, then they may not be undertaken without a resource consent.

In achieving the purpose of the RMA, section 8 requires the principles of the Treaty of Waitangi (Te Tiriti o Waitangi) to be taken into account. Section 6(e) sets out that matters of national importance include “the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga”. When making decisions, the Council must also have particular regard to specified matters including kaitiakitanga (RMA s7(e)).

The New Zealand Coastal Policy Statement 2010⁶ (NZCPS) guides councils in their day-to-day management of the coastal environment. A number of policies within the NZCPS are relevant to the management of commercial surface water activities including Policy 2 – *In taking account of the principles of the Treaty of Waitangi (Te Tiriti o Waitangi) and Kaitiakitanga this policy recognises and provides for Māori involvement in resource management plans and decision making, and taking into account iwi resource management plans and other recognised planning documents.*

Policy 13 of the NZCPS requires the preservation of natural character and Policy 15 requires the protection of natural features and landscapes.

2.3 REGIONAL COASTAL PLAN FOR SOUTHLAND 2013

The purpose of this study is to inform the review of the operative Regional Coastal Plan for Southland 2013 (the Plan) and a plan change process. This section sets out key aspects of the operative Plan pertaining to this study. Text is drawn from Robertson and Graham (2022).

2.3.1 WILDERNESS AND REMOTENESS VALUES

The operative Regional Coastal Plan for Southland 2013 seeks to maintain the essential characteristic of the pristine Fiordland CMA including its remoteness and wilderness values. It defines these values:

Wilderness is a condition in which there is an extremely high probability of experiencing complete isolation from the sights, sounds and activities of humans. Remoteness is a similar condition, but the probability of experiencing complete isolation from the sights, sounds and activities of humans is reduced from extremely high to high. (Chapter 16:1)

The Plan goes on to state that:

Wilderness and remoteness are becoming increasingly rare values both nationally and internationally. They are values which can either be managed or allowed to establish a new equilibrium in the face of increasing population and access. In the latter process, there is a strong possibility that natural

⁵ <https://www.milfordopportunities.nz/> accessed 22.1.22

⁶ Prepared by the Department of Conservation Te Papa Atawhai on behalf of the Minister of Conservation

character, landscape, wilderness and remoteness values will be significantly diminished if not lost.
(Chapter 16:1)

The Plan sets out objectives to protect the remoteness and wilderness values of the internal waters of Fiordland (Objective 16.1.2) and to ensure that commercial and private recreational surface water activities do not adversely affect the intrinsic values of the Fiordland coastal environment (Objective 16.1.3). The latter is explained as follows:

Recreational activities, whether privately organised or facilitated by a commercial operator, can adversely affect the natural and physical environment and the enjoyment and pleasantness of other people's recreational experience. To protect the environment and the quality of experience people gain from it, users should conduct their activities in a manner that avoids adverse effects on each other and the environmental conditions that attract them to the area. (Chapter 16:4)

Policy 16.2.8 protects the opportunity for remoteness and wilderness experiences in all of the principle [sic] arms, inlets and fiords of Fiordland apart from Milford Sound/Piopiota. The Plan states that: “[i]n these areas there is an expectation of a greater degree of isolation than can be expected in Milford Sound and Doubtful Sound, principally because they are difficult to get to” (Chapter 16:7).

2.3.2 MANAGEMENT OF RECREATION AND TOURISM SURFACE WATER ACTIVITY

The Plan distinguishes between commercial and non-commercial surface water activities. Fiordland commercial surface water activities (eg. taking paying passengers out into the fiords in a vessel) requires a coastal permit under the Plan. Non-commercial (recreational) use is not controlled under the Plan; a code of practice is seen as the most effective way to mitigate effects from recreational users.

Chapter 16 of the Plan manages commercial surface water activities within the CMA. Its policies require **limits to be placed on commercial activities**, and consideration of incidental activities, to ensure there is no reduction in natural character, landscape and amenity values. It does this by implementing a management regime across the fiords which:

- focuses use in Milford Sound/Piopiota by placing no limit on activities, it is noted the physical limitations of the area will largely limit future development and that day visits to Milford Sound alleviate the pressure on other areas;
- places discretionary activity restrictions on day-trip and backcountry trip use in Doubtful Sound/Patea and its associated arms;
- provides for use levels within the CMA as were experienced at 15 February 1997 as this level of use is considered acceptable;
- protects the opportunity for remoteness and wilderness experiences in all of the fiords except for Milford Sound/Piopiota.

In sum, only the Doubtful Sound/Patea fiord complex has commercial surface water activity discretionary activity limits within the operative Regional Coastal Plan. The current level of activity has exceeded the limit for the number of discretionary activities; therefore, any new commercial surface water activity applications for Doubtful Sound/Patea are for non-complying activities.

The Plan manages existing commercial surface water activities in Doubtful Sound/Patea by confining day trips to certain areas of Doubtful Sound including Deep Cove, Hall Arm, Thompson Sound and Crooked Arm east of Turn Point. Commercial day-trip activities are excluded from Bradshaw Sound, Gaer Arm, First Arm and Crooked Arm west of Turn Point. These restrictions acknowledge the natural quiet of Hall Arm and seek to provide areas where people who are actively experiencing the environment or seeking a backcountry experience, can do so without interruption from people who are there for mainly scenic reasons and/or active participation with the environment (whether that be exploring, vegetation and fauna observation, fishing, diving, interpretation, etc). Such activities often involve overnighing in the area on ships or in huts and camps close to the CMA or stopping and visiting the adjoining land and rivers.

Details about activity limits and current consents for commercial surface water activities are provided in Robertson and Graham (2022).

2.3.3 MANAGEMENT OF NOISE

Chapter 16 of the Plan also provides direction on the management of noise effects associated with surface water activities. Noise can impact on remoteness and wilderness values which contribute to people's appreciation of the fiords. The direction in the Plan seeks to avoid noise which compromises the tranquillity and peacefulness of Fiordland. Amongst its policies, are limits on the speed of vessels in Hall Arm the 'sound of silence' (Policy 16.3.3) and requirements to avoid, where practical, or mitigate adverse effects of noise from commercial and non-commercial vessels (Policy 16.3.5).

2.3.4 INTEGRATION WITH FIORDLAND NATIONAL PARK

Chapter 16 of the Plan seeks to integrate the management of the internal waters of Fiordland with the adjoining Fiordland National Park; the Department of Conservation Te Papa Atawhai manages the land in Fiordland down to mean high water mark as Fiordland National Park. The Plan notes that: *The experience of the coastal environment, however, integrates the contribution of the qualities of the land and the sea. It does not recognise administrative boundaries.* (Chapter 16:3)

The Department of Conservation Te Papa Atawhai (DOC) also has advocacy statements regarding what direction it will take in managing land adjacent to the CMA (see Robertson and Graham 2022).

2.4 MANAWHENUA LEGISLATION AND PLANS

The connections and relationships that tangata whenua have with the coastal environment of Fiordland are clearly set out and Fiordland as a place has high cultural values to tangata whenua. The recognition and provision for the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga, kaitiakitanga interests and values of Ngāi Tahu ki Murihiku are to be protected and enhanced. This includes the safeguarding of all cultural heritage and significant sites and places, and customary use rights, as guaranteed by the Treaty of Waitangi, must be recognised in Fiordland.⁷

The relationship of manawhenua with the Fiordland CMA and their engagement with the management of the area is expressed within legislation and planning documents.

2.4.1 TE RŪNANGA O NGĀI TAHU ACT 1996

Te Rūnanga o Ngāi Tahu Act 1996 recognises Te Rūnanga o Ngāi Tahu as a tribal entity (exercising manawhenua and manamoana) and amongst other matters enables participation in RMA matters as a mandated iwi authority. Te Rūnanga o Ngāi Tahu is the iwi authority and overall representative governing body of Ngāi Tahu Whānui being descendants of the Ngāi Tahu, Ngāti Mamoe and Waitaha tribes. Te Rūnanga o Ngāi Tahu is made up of 18 rūnanga papatipu, four of which are manawhenua in Murihiku: Ōraka Aparima, Waihōpai, Awarua and Hokonui⁸.

Definition of relationships with the land/waters may be defined as⁹:

- Tangata whenua – people of the land, local owner-occupier, original inhabitant, the people that hold the tūrangawaewae and the manawhenua in an area, according to tribal and hapū custom.
- Manawhenua – traditional/customary authority or title over land, and the rights of ownership and control of usage on the land, forests, rivers etc. Manawhenua is held by an iwi or hapū rather than individuals. Also refers to the land area (and boundaries, Rohē) within which such authority is held.
- Manamoana – tribal authority over the sea coasts and off shore fisheries, generally accepted as extending iwi manawhenua from the traditional tribal land boundaries into the adjacent ocean as far as New Zealand statutory limits (currently 200 miles off shore).

⁷ Te Tangi a Tauira: The Cry of the People – Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008

⁸ Te Tangi a Tauira: The Cry of the People – Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008

⁹ Te Tangi a Tauira: The Cry of the People – Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008

Ngāi Tahu is today, and was at the time of the signing of the Treaty of Waitangi/Te Tiriti o Waitangi in 1840, the tangata whenua that hold manawhenua and manamoana within the takiwā of Ngāi Tahu Whānui, which includes all of Murihiku, Stewart Island/Rakiura and into the adjacent ocean as far as New Zealand statutory limits, currently 200 miles off shore¹⁰.

Ngāi Tahu ki Murihiku are Treaty Partners in the Regional Coastal Plan review process with ES. Te Ao Mārama Incorporated, established in 1996, represents Murihiku tangata whenua for resource management purposes on behalf of papatipu rūnanga in Murihiku.

Te Ao Mārama have raised concerns regarding the level of activity occurring within the Fiordland CMA, specifically the internal waters.

2.4.2 NGĀI TAHU CLAIMS SETTLEMENT ACT 1998

The Ngāi Tahu Claims Settlement Act 1998 (the Settlement Act) gives effect to the Deed of Settlement signed by the Crown and Te Runanga o Ngāi Tahu on 21 November 1997 to achieve a final settlement of Ngāi Tahu's historical claims against the Crown. The Settlement Act includes the mechanism of Statutory Acknowledgement. A Statutory Acknowledgement is an acknowledgement by the Crown of the special relationship between Ngāi Tahu and an identifiable area (referred to as statutory areas), namely the cultural, spiritual, historical, and traditional association with those areas.

Te Mimi o Tū Te Rakiwhānoa (Fiordland Coastal Marine Area) is a statutory area. The purposes of Statutory Acknowledgements are:

- To ensure that Ngāi Tahu's association with certain significant areas in the South Island are identified, and that Te Runanga o Ngāi Tahu is informed when a proposal may affect one of these areas; and
- To improve the implementation of RMA processes, in particular by requiring consent authorities to have regard to Statutory Acknowledgements when making decisions on the identification of affected parties.

The Crown acknowledges Te Runanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Te Mimi o Tū Te Rakiwhānoa. Schedule 102 of the Ngāi Tahu Claims Settlement Act 1998 sets out and notes (but is not limited to):

- What the fiords of this region traditionally represent.
- That particular stretches of the coastline also have their own traditions.
- Place names along the coast record Ngāi Tahu history and point to the landscape features which were significant to people for a range of reasons.
- The area was visited mainly by Ngāti Mamoe and Ngāi Tahu, who had various routes and nohoanga for the purpose of gathering koko-takiwai (type of pounamu) and manu (birds).
- The area played a significant role in the history of conflict between Ngāi Tahu and Ngāti Mamoe.
- Notable pa and nohoanga occurred in many areas on the Fiordland coast, along with tauranga waka (landing places) occurring up and down the coast.
- There is knowledge that continues to be held by whānau and hapū and is regarded as taonga.
- The fiords are the repository of many kōiwi tāngata (burial places), secreted away in keeping places throughout the region. There are also urupā and many other wāhi tapu in the area.
- Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the area.

2.4.3 MARINE AND COASTAL AREA (TAKUTAI MOANA) ACT 2011

The purpose of the Marine and Coastal Area (Takutai Moana) Act 2011 (MACA Act) is to:

- Establish a durable scheme to ensure the protection of the legitimate interests of all New Zealanders in the marine and coastal area of New Zealand; and

¹⁰ Te Tangi a Taurira: The Cry of the People – Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008

- Recognise the mana tuku iho exercised in the marine and coastal area by iwi, hapū, and whānau as tangata whenua; and
- Provide for the exercise of customary interests in the common marine and coastal area; and
- Acknowledge the Treaty of Waitangi (Te Tiriti o Waitangi).

The provisions of the MACA Act can affect how provisions in regional coastal plans are drafted and applied depending on the types of interests that have been recognised. Three types of customary interests are recognised within the common marine and coastal area of New Zealand under the MACA Act – protected customary rights, customary marine titles and participation in conservation processes.

Environment Southland Te Taiao Tonga has been notified of four applications for recognition of customary marine title and/or protected customary rights that have been filed with the High Court in relation to the Southland CMA. Of relevance to Fiordland, Te Rūnanga o Ngāi Tahu has an application, on behalf of Ngāi Tahu Whānui, over the whole CMA of the Ngāi Tahu Takiwā, including the whole of the Southland CMA.

2.4.4 TE TANGI A TAUIRA: THE CRY OF THE PEOPLE – NGĀI TAHU KI MURIHIKU NATURAL RESOURCE AND ENVIRONMENTAL IWI MANAGEMENT PLAN 2008

Regional coastal plans are required to take into account any relevant planning document recognised by an iwi authority (RMA s66(2A)(a)). In Southland, the relevant planning document is the Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008 (Te Tangi a Tauira: The Cry of the People).

The kaupapa of this plan is “Ki Uta Ki Tai – From Mountains to the Sea”. It is a culturally based natural resource framework developed by and for Ngāi Tahu Whānui and has been identified and advocated as a key tool in assisting Ngāi Tahu achieve more meaningful rangatiratanga and kaitiakitanga in natural resource management. It is about an indigenous understanding of the environment that can be used to help address the wide range of issues rūnanga face with regards to environmental management. Ki Uta Ki Tai is based on the idea that if the realms of Tāwhirimātea (atua of the winds), Tāne Mahuta (atua of all living things), Papatūānuku (mother earth) and Tangaroa (atua of the sea) are sustained, then the people will be sustained.

Section 3.3 addresses Te Atawhenua Fiordland and Section 3.6 provides direction on Te Ākau Tai Tonga (Southland’s Coastal Environment). Section 3.3 notes the key management issues for Ngāi Tahu ki Murihiku in Fiordland are those associated with visitor management (recreation, tourism, and concessions), natural resource use (hydro-electric power development), protection of wilderness areas, species recovery, and customary use of culturally important resources on conservation land.

Section 3.6.6 addresses commercial surface water activities in Fiordland. It discusses amongst other matters the discouragement of discharges of wastewater and ballast water into coastal waters, the impacts of surface water activities on the natural character, beauty or ecology of the region and adherence to Fiordland marine regulations (eg. daily fishing limits and the location of marine reserves).

2.5 FIORDLAND (TE MOANA O ATAWHENUA) MARINE MANAGEMENT ACT 2005

The Fiordland (Te Moana o Atawhenua) Marine Management Act 2005 established:

- The Fiordland (Te Moana o Atawhenua) Marine Area;
- Eight new marine reserves (in addition to the two existing marine reserves);
- A number of small, discrete significant areas known as ‘china shops’; and
- A unique management regime led by the Fiordland Marine Guardians.

The Act acknowledges the importance of kaitiakitanga and recognises the area’s local, national and international importance, unique marine environment, distinctive biological diversity, and outstanding landscape and cultural heritage.

There are 10 marine reserves in the Fiordland (Te Moana o Atawhenua) Marine Area, which are administered by the Department of Conservation Te Papa Atawhai. All fish and marine life in the marine reserves is completely protected with all fishing, both non-commercial and commercial, totally prohibited.

The Fiordland Marine Guardians are community representatives appointed by the Minister for the Environment. They are responsible for advising and working with the management agencies such as the

Department of Conservation Te Papa Atawhai and Environment Southland Te Taiao Tonga to provide cooperative and integrated management of the Fiordland (Te Moana o Atawhenua) Marine Area.

The original formation of the Guardians of Fiordland in 1995¹¹ was a response to concerns regarding the escalating pressures on the Fiordland area resulting from increasing human use, the need for improved and integrated management of the area, and a desire that the community be more involved in the management of Fiordland's marine environment.

The Guardians have sent numerous communications to the Council regarding their concerns about increasing commercial surface water activities in Fiordland CMA, specifically the internal waters.

2.6 FIORDLAND NATIONAL PARK MANAGEMENT PLAN 2007

Waters of the fiords adjoin Fiordland National Park. Most pertinent within the conservation legislation and planning framework is Fiordland National Park Management Plan 2007 which sets out intentions for management of the national park. These are summarised for each fiord complex in Robertson and Graham (2022), including the guidance provided for concessions applications and intentions to work cooperatively with other agencies (including ES and Southland District Council) to ensure integrated management of Fiordland National Park with the CMA.

Adjoining the Fiordland CMA are two gazetted wilderness areas (Glaisnock and Pembroke) within Fiordland National Park, and one proposed wilderness area – the South West/Cameron Remote Area – which is managed in recognition of its wilderness values. Legal designation as a wilderness area under section 14 of the National Parks Act 1980 ensures that these areas are managed to maintain their wilderness values.

The Fiordland National Park Management Plan 2007 uses visitor management settings to provide for a range of recreation opportunities within the National Park, including *Wilderness Areas* and *Remote Experience Areas*. Robertson and Graham (2022) provides a description of these visitor settings and their locations with respect to fiord complexes.

2.7 MILFORD OPPORTUNITIES PROJECT

The Milford Opportunities Project (MOP) is a multi-agency approach to develop long-term solutions for the management of Milford Sound/Piopiotahi. The project launched a masterplan for Milford Sound/Piopiotahi in July 2021 that makes recommendations to ensure:

Milford Sound Piopiotahi maintains its status as a key New Zealand visitor icon and provides a world-class visitor experience that is accessible, upholds the World Heritage status, national park and conservation values and adds value to Southland and New Zealand Inc.

The key concepts are:

- 1. Recognise and develop landscape conservation and cultural experience.*
- 2. Establish a new governance model.*
- 3. Facilitate broader Murihiku and Southland benefits.*
- 4. Charge international visitors an access fee.*
- 5. Introduce a zero emission coach-based transport model.*
- 6. Establish a new Te Anau hub and enhanced developments.*
- 7. Develop multiple experiences along the corridor structured around key nodes.*
- 8. Encourage sustainable practices and use of green technology.*
- 9. Reorganise Milford Sound Piopiotahi to remove visitor conflicts.*
- 10. Modernise infrastructure at Milford Sound Piopiotahi.¹²*

¹¹ Then called the Guardians of Fiordland's Fisheries (<https://www.fmg.org.nz/guardians/history> accessed 29.1.22)

¹² <https://www.milfordopportunities.nz/> accessed 22.1.22

Specific reports (amongst others) were prepared on manawhenua aspirations and values (Kauati 2021) and tourism (Visitor Solutions Limited and Fresh Info Limited 2021), to inform the masterplan. The project is now in its design, planning and implementation stage.

This study complements the MOP, noting that MOP is focused on Milford Sound/Piopiotaahi and largely has a terrestrial focus. Also, while it provides direction about large cruise ships, smaller commercial vessels are not covered in detail. In contrast, this study encompasses a range of commercial vessels (of varying sizes), all the fiord complexes and focuses on the waters rather than a terrestrial national park focus.

3 THEORETICAL CONTEXT – REVIEW OF THE RESEARCH LITERATURE

This section presents a theoretical description of wilderness and remoteness values from the perspective of the recreation and tourism experience in coastal and marine settings. It is based on a review of the international research literature and describes:

- The outdoor recreation and tourism research literatures, placing this study within its broader context, and highlighting research gaps.
- Studies focused on coastal marine wilderness settings.
- The outdoor recreation and tourism experience.
- Experiential values, defining the values of wilderness and remoteness.
- Research on user impacts upon wilderness and remoteness values.
- Mediating factors that influence impacts upon users' perceptions of wilderness and remoteness.
- Relevant material from studies undertaken in Fiordland.

The intent is to summarise relevant research to inform discussion in later sections of this report.

3.1 SUMMARY

Key concepts in outdoor recreation and tourism

- Outdoor recreation research and tourism research has developed into two separate bodies of research literature. However, most theoretical concepts apply to both recreation and tourism visitors.
- At its most basic, recreation and tourism can be described as a person undertaking an activity (passive or active) in a specific place (the recreation setting) for the purpose of achieving a desired experience, with outcomes that may be both positive (benefits) and negative (impacts).
- Touristic experiences differ from outdoor recreation experiences in that they often have less immersion (ie. more passive engagement with the environment) and are mediated by the presence or facilitation of a tourism operator.
- An individual's recreation/tourism experience is shaped by many factors, including the values they attribute to a place such as their values of wilderness.
- Resource managers provide the opportunity for visitors to have high quality experiences through the provision of certain setting characteristics and the management of activities.
- The concept of carrying capacity is the most commonly accepted approach to managing recreation impacts, especially crowding. The concept has moved away from the specification of a limit on numbers of users (recognising this is too simplistic) to specification of the conditions sought (such as a high degree of wilderness value) and what standard is required for each condition (eg. 95% of users say they experienced wilderness).

Recreation and tourism research in coastal and marine wilderness settings

- Few studies have looked at the visitor experience of coastal and marine *wilderness settings*. Most outdoor recreation wilderness research is terrestrial based and focused on individual user

experiences, rather than experiences in which users are in a commercial group setting such as on a boat with others.

- Therefore a research gap exists with respect to the impact of perceived crowding upon the experiences of visitors on board boats in coastal and marine wilderness environments.
- Findings from terrestrial wilderness recreation research cannot be directly transferred to coastal and marine wilderness settings owing to the distinct character of coastal and marine recreation settings, including a reliance on motorised access and the more passive activity associated with cruising.
- New Zealand recreation and tourism studies in marine settings are predominantly focused on marine mammal viewing and its effects.

Wilderness and remoteness values

Defining values

- Experiential values relate to a person's experience. For this study, that is the on-site recreation/tourism visit or trip.
- Social values include other values of the place (other than the visit experience) for example cultural, historic value.
- Non-use values of wilderness (such as intrinsic value) are becoming increasingly more important than use values (such as recreation/tourism).
- Values are personal – people may hold different values for a particular place; they may value different elements of that place in different ways and hold different views on how those elements should be managed.

Defining wilderness

- Wilderness has been defined through various means, which are examined to understand the meaning of wilderness – wilderness settings within recreation planning frameworks, formal land designation of wilderness areas, and perceptions of wilderness.
- A suite of outdoor recreation planning frameworks has been developed to assist resource managers provide for a diverse range of recreation opportunities, based on the principle that by altering environmental/physical, social, and managerial attributes of a place, managers can influence the recreation/tourism experience derived from that place. Wilderness and remote recreation settings have been defined by these frameworks, using environmental/physical, social and managerial factors.
- While the majority of these frameworks are terrestrial-based, some extension to marine settings has occurred. Key elements of the experience described for the classification of 'wilderness waters' are: isolation from the sights, sounds, and activities of humans; no interaction with other recreation user groups; users totally reliant on their own sea/outdoor skills or the skills of others; high risk owing to isolation and dependence on group resources; occurs within a highly natural environment (Taylor 1993).
- Wilderness is a type of formal land protection in some countries including New Zealand. Features of formally protected wilderness areas closely align with elements of the 'wilderness' planning classification, with the addition that some definitions encompass habitation and use by indigenous people.
- Some research has focused on the identification of wilderness properties or elements, noting that wilderness is often defined by what it does not include.
- Perceptions and values of wilderness vary by different types of people; for example, by nationality or activity participation:
 - Tourism research reports that both eco-specialists and eco-generalists (who prefer to travel as part of an organised tour) are more motivated by the presence of attractions (eg. wildlife seldom seen elsewhere) and viewing other elements of the natural environment than an express desire to experience 'wilderness'.
 - An Alaskan study found that different stakeholders (agencies, tour operators, cruise lines, and local residents) perceived wilderness differently. Larger tour operators and cruise industry personnel tended to be less purist than agency personnel and small operators.

- The opportunity to visually experience natural environments (aesthetic appreciation relating to perceptions of scenic beauty) represents an important wilderness value for tourists.

Cultural values as part of wilderness

- Western conceptions of 'naturalness' have historically ignored the role indigenous people have played in areas now regarded as wilderness.
- Some contemporary definitions of wilderness include indigenous people's occupation and use following traditional, sustainable ways of life.
- There is a considerable body of work on how traditional ecological knowledge (TEK) can assist efforts to protect endangered species and steward wilderness.

Wilderness values in marine settings

- Wilderness has largely been defined from a terrestrial basis. Debate exists around the attributes of wilderness for marine settings.
- Safety considerations may be more important in perceptions of marine environments than terrestrial settings; a greater tolerance of structures and the use of equipment may result.

Defining remoteness

- Remoteness has been defined in two ways: (1) spatially and temporally distant; and (2) a less strict version of wilderness ('almost wilderness').
- In the tourism context, often remoteness is associated with visiting destinations that are situated in remote regions (eg. polar regions), taking a global approach to the 'distance' definition.
- Wilderness is commonly considered to contain a remoteness component.

Elements of wilderness and remoteness values

- From analysis of the research literature, seven components or elements of wilderness value have been identified for this study: remoteness, naturalness, minimal human presence, natural quiet, aesthetic appreciation, conservation-related activity, personal experience.
- Remoteness can be considered one element of the overarching value of wilderness.

Impacts on visitors' experience

- Very little research attention has been paid to perceived crowding upon the experiences of visitors on board boats in settings similar to Fiordland.
- Most recreation/tourism impacts research in marine settings has been focused on environmental effects, not upon the visitor experience.
- A conceptual model of perceived crowding has been developed by Dogru-Dastan (2020) from an international review of crowding studies in recreation and tourism contexts. It identifies factors that influence an individual's perception of crowding and their subsequent response to that perception.
- Recreation and tourism related research on perceived crowding shows the inter-connectedness of the factors influencing that perception. Factors range from personal attributes (such as expectations) to visit characteristics (such as whether they are a first-time or repeat visitor) and a myriad of other factors about the individual and their trip, the site and other users present, and situational factors (such as the time of visit and the weather).
- The 'science of values' (Manning and Lawson 2002) describes normative judgements about the amount and type of visitor use able to be encountered during a high quality experience, taking into account that visitors may value both solitude and access, and that these values may conflict. It is difficult to measure these trade-offs when evaluating acceptable use levels, making it difficult to determine carrying capacity.

Fiordland research

- Over the last 15 years, several studies have examined visitor and stakeholder perceptions of Fiordland, and aspects of the recreation/tourism experience.

- A recent (2020) study of stakeholder' values for Fiordland closely match the dimensions of wilderness found in the international research (and reported earlier in this section). The importance of remoteness stood out.
- The high value placed upon natural values and viewing scenery was universal across studies. Scenery was found to exceed expectations in the few studies that investigated this aspect.
- A 2010 Milford Sound/Piopiotahi study found that local tour boats were negatively impacting upon some types of visitors, especially commercial kayakers and divers.

3.2 KEY CONCEPTS IN OUTDOOR RECREATION AND TOURISM

Two distinct research literatures have developed around outdoor recreation and tourism. While they address different areas of interest, they both focus upon visitors to places (Manning 2011). Much of the theory relevant to this study has developed from the more established body of outdoor recreation research; however, most theories and concepts are also applicable to tourism experiences (Higham 1998).

The basic concept of recreation is that people seek experiences in order to realise certain benefits. They do this by undertaking a particular activity in a particular place (the recreation setting), and various benefits (positive effects) and impacts (negative effects) accrue. This is called the 'recreation (or tourism) opportunity' (Figure 3.1).

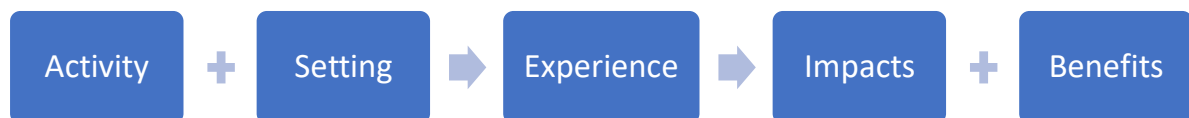


Figure 3.1: Description of the recreation and tourism opportunity

The different components of the recreation (and tourism) opportunity (shown as blue boxes in Figure 3.1) are described below and used to structure this report. Recreation and tourism **activity** in the fiords is described in section 4, while section 5 outlines the characteristics of the fiords as a **setting** for recreation and tourism. The wilderness and remoteness **experience** of the fiords is discussed in section 6 and **impacts** upon this experience documented in section 7. Some of the **benefits** associated with tourism activity are presented in section 8.

Activity:

- A range of activities occur within nature-based settings, from active pursuits (involving greater immersion in the natural environment, high levels of physical activity and commonly described as outdoor recreation) through to passive activities (often associated with more passive 'touristic' activity such as a boat cruise). The term 'immersive activities' is used to refer to pursuits at the active end of the spectrum, characterised by deep absorption in the environment.
- The difference between tourism and recreation activities is becoming increasingly blurred. Tourism now encompasses activity in settings that were once the preserve of 'purist' outdoor recreationists, and a considerable array of hybrid recreation-tourism activities are now commonly sold as tourism products.
- Activities are becoming more diverse over time – new activities facilitated by innovation in equipment and access opportunities.

Setting:

- The natural resource is the 'setting' for visitors' experience.
- Resource managers provide the opportunity for visitors to have high quality experiences through the provision of certain setting characteristics and the control of activities. In other words, managers can facilitate and direct experiences through management of the activity and the setting.

Recreation experience:

- The recreation experience is the psychological and physiological response to participating in a particular recreation activity in a specific recreation setting (Aukerman et al. 2009). It contains

multiple dimensions and engages multiple senses.

- Visitor satisfaction is the commonly accepted measure of the *quality* of the visitor experience, and is related to visitor motivations and expectations (Manning 2011, Moore 1995).
- Expectancy theory (Fishbein and Ajzen 1975) explains that participants seek to fulfil particular needs, motivations or other desired states. Congruence between a visitor's expectations and their perception of their actual experience results in high satisfaction; low satisfaction results when expectations are not met.
- Values underlie and motivate attitudes and behaviour; they guide choices by providing a sense of what is right and wrong, and what is important. Experiential values relate to a person's experience – for this study that is the on-site recreation/tourism visit or trip.
- While recreational experiences are generally considered through the lens of an on-site visit, experiences also can be realised virtually through media, and benefits can accrue from simply knowing a place is there.

Tourism experience:

- The nature of the experience obtained by tourists may differ in some fundamental ways from that obtained by recreationists, even though tourists and recreationists visiting natural areas are both visitors (Manning 2011).
- Tourism experiences are often highly facilitated compared with outdoor recreation. This facilitation is directed and organised by the tourism industry and can be considered a 'mediated' experience. Tourists see places and people (called the 'tourist gaze' by Urry 1990) through the experiences organised by the tourism operator – what they see, how it is explained to them, and so on.
- While outdoor recreationists and tourists might participate in similar activities, the degree of immersion in the environment may vary considerably, alongside key differences in motivations and expectations, including their expectations of wilderness and remoteness.

Benefits:

- *Benefits* is used to describe positive outcomes of recreation and tourism, while *impacts* is used for negative outcomes (Cessford 1999).
- Benefits can accrue at the level of the individual, community or society, and may be social, economic or environmental.

Impacts:

- Effects or consequences from visitors at a site may be positive or negative. Negative effects are termed impacts and result when the physical and social effects of visitors detract from others' desired experiences.
- The focus for this study is social (or experiential) impacts, specifically impacts from recreation and tourism activity on perceptions of wilderness and remoteness. Social impacts impinge upon the quality of the recreation experience. Biophysical impacts from recreation and tourism activity are out of scope.
- Carrying capacity is the primary conceptual model for recreation impacts. The notion has been reframed from 'how much use is too much?' to 'what are the appropriate or acceptable conditions?'. Definition is required for: (1) the desired conditions (values of the area that require protection, such as a high degree of solitude), and (2) appropriate standards for these conditions (judgements of acceptability, such as 90% of visitors say they experienced solitude) (Booth and Espiner 2006).
- Three dimensions of the recreation setting occur repeatedly within the recreation literature to describe the recreational environment and to frame the concept of carrying capacity: resource (natural environment), social (amount and type of use, interactions between users and with the environment) and managerial (facilities, services, rules, maintenance).

3.3 RECREATION AND TOURISM RESEARCH IN COASTAL AND MARINE WILDERNESS SETTINGS

Most research focused on **wilderness environments** has a terrestrial (particularly mountains) focus (Boller et al. 2010, Manning 2011). However, growing visitation to new types of wilderness setting has led to research on coastal recreation areas (eg. Jurado et al. 2013, Kalisch 2012, Needham and Szuster 2013), and tourism in marine environments (eg. Davenport and Davenport 2006, Lusseau 2005, Manning et al. 1996, Orams 1999) and in polar regions (eg. Summerson and Bishop 2012, Watson et al. 2003). Higham (1998) notes that wilderness research is poorly represented in the tourism literature.

Studies on recreation and tourism in **coastal and marine areas** encompasses coastal parks and offshore islands, the tidal-estuary zone, a variety of marine protected areas (including reefs) and deeper ocean, where an array of recreation and tourism activities take place (Orams 1999, Taylor 1993). This literature addresses a variety of activities including beach tourism and surfing (eg. Inglis et al. 1999), snorkelling and scuba diving (eg. Bell et al. 2011), fishing (eg. Barr and Kliskey 2014, van Riper et al. 2012), wildlife viewing (eg. Lusseau 2005, Manning et al. 1996), kayaking (eg. Hawke and Booth 2001, Randall and Rollins 2013), recreational boating (eg. Tseng et al. 2009), and cruising (eg. Davenport and Davenport 2006, Pomeranz et al. 2015).

Needham and Szuster (2013) report the growing popularity of coastal and marine tourism and recreation (which includes participation in activities such as snorkelling, scuba diving, boating, and whale watching) and this is evidenced by a focus on crowding at recreation sites in much of this research.

The focus of New Zealand's marine recreation and tourism research is evident from Booth and Lynch's (2010) stocktake of New Zealand outdoor recreation literature which identified 127 coastal and marine publications. Three quarters of these were about marine mammals, predominantly the effects of wildlife viewing on marine mammals. Other topics included the visitor experience, water safety, marine fishing including fishing rights and their management, site-specific visitor studies, sea kayaking (all of which had a visitor experience focus), surf breaks and aspects of the marine tourism industry (Booth and Lynch 2010).

There is little visitor experience research for **coastal and marine wilderness settings**, both in New Zealand and internationally. The research indicates that coastal and marine wilderness settings differ from most terrestrial wilderness settings in the following ways:

- They require more structured and (intrusive) access provisions – both physical infrastructure, such as wharves, and regulations, such as no-wake zones.
- They rely on motorised transport (boats and aircraft) to provide access to more remote marine wilderness sites.
- Participation in marine recreation activities is often more passive than for land-based activities. Although 'cruising' includes an array of boat sizes and trip options which offer varying degrees of user participation in activities (eg. small boat scenic day and overnight trips, multi-day leisure cruises and expedition cruises) (Manning et al. 1996, Orams 1999).
- Activities occur in an environment in which people do not live and in which visitors are equipment dependent (Orams 1999).

As such, there are a number of caveats associated with the application of research focused on terrestrial (often recreation-based) outdoor activity to coastal and marine settings (and the types of often tourism-based activity which occurs in these settings). Wilderness research has largely focused on terrestrial **wilderness activity**, studying recreationists who seek a self-sufficient and unfacilitated experience in backcountry settings (Higham 1998). In contrast, tourism caters to 'exclusivity' and opportunities for unique experiences. Over time recreation and tourism activity has become less clearly defined (cross-overs). 'Soft adventure' tourism has increasingly taken people into settings that are traditionally backcountry recreation settings. Driven by increases in tourism globally, operators have offered new products and sought new areas as other ones have got busier (displacement). The emergence of two research literatures in part reflects fundamental differences between the activity of outdoor recreation and the activity of tourism.

3.4 WILDERNESS AND REMOTENESS VALUES

The purpose of this section is to describe values and, more specifically, to define *wilderness* and *remoteness* as reported in the outdoor recreation and tourism literature. Particular attention is paid to coastal marine settings.

3.4.1 DEFINING VALUES

A confusion of terminology is used across the wilderness values literature, in part a result of the profusion of concepts used to understand and describe these values. This confusion is exacerbated by different authors using the same terminology to mean different things. For clarity, some of the fundamental terms are defined below.

The term *value* has many meanings. This report refers to the following types of values:

- *Experiential values* – defined by a person experiencing a place; a form of use value.
- *Social values* are beyond the on-site experience of visitors and include cultural values, historic heritage value, etc. These values exist without the need for an on-site trip.
- Values are generally described in respect of their *utility or use value* (they may be associated with direct use, such as for recreation or research, or indirect use such as ecosystem services) or *non-use values* (eg. intrinsic value, pleasure from knowing wild places exist, option to visit in the future, bequest to future generations) (Barr and Kliskey 2014, Johnston et al. 2020).
- Values are described as being held (eg. fairness, respect for life) or assigned (which reflect the importance of some things in relation to others and are commonly reported in economic terms, ie. the worth of something) (Ives and Kendal 2014). Held values are enduring and slow to change while assigned values are often situation specific in respect of both settings and activities (Johnston et al. 2020).

Inherent in experiential value is that different people may interpret their experience of a place differently. By way of example, in New Zealand lupins are valued by some people for their aesthetic beauty in the landscape, while others see them as a weed and a blight on the landscape. The fact they are defined ecologically as a weed and considered detrimental to an area's naturalness illustrates how experiential value may differ to definitions of natural character based on ecological parameters.

Values research has shown that people hold different values for a particular place (setting); they may value different elements of that place in different ways and hold different views on how those elements should be managed (Ives and Kendal 2014). Given this variation in personal experience it is difficult to assign universal recreation experiential values, especially given that values themselves have been described as diverse, subtle and subjective (Hawes et al. 2015).

Values can also be competing and change over time (Pomeranz et al. 2015). Johnston et al. (2020), for example, suggest that, over time, the importance of indirect and non-use values have increased at the expense of those associated with recreation use. Winter and Lockwood (2004) differentiated between intrinsic and instrumental (or utility or use) values and found intrinsic values to be held the strongest. Ives and Kendal (2014) also report that intrinsic values (ie. valuing wilderness in and of itself outside human benefits) are now often ranked highly as a wilderness value. In a public opinion study, Brown and Alessa (2005) found direct use values to generally be less important than ecological, environmental quality, and off-site values.

Despite the multiple ways in which people value nature, the various frameworks for understanding underlying environmental values contain common themes (Ives and Kendal 2014). These include biospheric (nature-centred), social altruistic (human-centred) and egoistic (self-centred) components. More specifically, in research on marine wilderness, Johnston et al. (2020) found three sets of values: environmental protection, emotional well-being, and recreation-related; environmental protection being the most important.

Within the philosophy, psychology and sociology literature, values are distinguished from related concepts such as attitudes, beliefs and norms (Ives and Kendal 2014). Attitudes are statements of people's positive or negative evaluations of a specific object or situation, and are typically expressed as likes or dislikes, or preferences. Beliefs are statements of people's understanding of the world, while "norms are common

understandings about how people ought to behave in a certain context and can operate at the individual or group level” (Ives and Kendal 2014:68). Some researchers equate held values to beliefs and assigned values to attitudes. This illustrates the terminology confusion within the research literature.

3.4.2 DEFINING WILDERNESS

The identification and measurement of wilderness values has generated a substantial literature. How wilderness is defined reflects the values associated with it that are held to be worth protecting (Hawes and Dixon 2020).

The various ways that wilderness has been defined are reviewed in this section in order to identify specific elements or properties of wilderness.

Wilderness as a recreation setting classification

Frameworks have been developed to define outdoor recreation resources, with the purpose of helping resource managers provide a diverse range of recreation opportunities. By protecting and altering key elements of the setting, managers can then influence the nature of the recreation experience derived from that place.

The first of these frameworks was called the Recreation Opportunity Spectrum (ROS) (Clark and Stankey 1979), after which various derivatives were developed, all based on the same principles and approach (synthesised in Appendix 3). ROS remains fundamental to contemporary outdoor recreation planning.

This approach is sometimes called ‘experience-based setting management’ (Manfredo et al. 1983, Floyd and Gramann 1997). Its conceptual basis rests upon the premise that recreation experiences are related to the setting in which they occur, and settings are a function of environmental, social and managerial factors. These three dimensions occur repeatedly within the outdoor recreation literature to describe the recreation setting: environmental (biophysical, natural environment), social (amount and type of use, interactions between users and with the environment) and managerial (facilities, services, rules, maintenance).

In these frameworks, opportunities for outdoor recreation experiences are classified along a setting continuum, from urban to wilderness. The ROS framework adapted for New Zealand (Taylor 1993) includes *remote* and *wilderness* settings (for terrestrial areas) and *remote waters* and *wilderness waters* in respect of water-based opportunities (Kliskey 1998, Taylor 1993) while the Spectrum of Marine Recreation Opportunity (SMRO) includes *semi-remote* and *remote* classes (Orams 1999). Different terms are used in other frameworks (eg. semi-primitive, primitive setting classifications) – the concept remains the same – and these settings are, in part, defined by their degree of naturalness and remoteness (Aukerman et al. 2009, Manning 2011).

A key application of these framework is to inventory the existing supply of recreation opportunity.

The marine opportunities experience is defined (Taylor 1993:24):

- Wilderness waters – “Outside the participating group there is a very high probability of experiencing complete isolation from the sights, sounds, and activities of humans. There is a high probability of no interaction with other recreation user groups. Users generally either totally reliant on their sea or outdoor skills, or totally dependent on the skills of others. There will be high risk associated with activities due to isolation and dependence on group resources. The environment provides a highly natural experience.”
- Remote waters – “The probability of experiencing interaction with others is generally low though not unlikely. The level of challenge, the risk, and use of sea or outdoor skills will be significant. Dependence on groups resources will be significant. A largely natural experience.”

Elements of the setting component of the New Zealand ROS (Taylor 1993:11) include:

- Physical: accessibility (distance, topography, vegetation, travel difficulty), size (area, scale), modification (human alterations, scale of modification).
- Social: user density, conduct of users.
- Managerial: degree of regulation, evidence of regimentation, services and facilities, maintenance operations.

Other inventories of wilderness also offer insight into elements of wilderness. The National Wilderness Inventory in Australia defines wilderness using four indicators (remoteness from settlement, remoteness from access, apparent naturalness, biophysical naturalness) (Summerson and Bishop 2012). Likewise, Bergstrom et al. (2005) defines wilderness in physical, biological and metaphysical (including subjective) terms, and identified a set of social, economic, ecologic and ethical values. The values identified described the attributes, functions and services present in the setting examined (a formally designated wilderness area). These included the preservation of natural and wild places, provision of recreational and experiential settings, and preservation of ecosystem health and biodiversity (Bergstrom et al. 2005).

Wilderness as a formal designation

Wilderness also has a legal definition as a designation for land protection in some countries (Bergstrom et al. 2005, Pomeranz et al. 2015).

The concept of formally protected Wilderness Areas in New Zealand is expressed in two key documents: the wilderness philosophy of advocates and management agencies in the 1970s and 80s which included a Joint Policy Statement (Department of Lands and Survey et al. 1980 in Cessford 2001), and a subsequent interagency Wilderness Policy developed by the government-appointed Wilderness Advisory Group in 1985 after an extensive consultative process (Wilderness Advisory Group 1985 in Cessford 2001).

The wilderness philosophy gives the rationale for establishment of Wilderness Areas which includes an emphasis upon non-use values:

Although the majority of New Zealanders may probably never visit a wilderness area, it certainly does not mean that there will be no benefit for these people. First we must consider the pleasure that individuals may receive by approaching, or being near, such areas; of experiencing the sense of mystery of standing on the threshold of the unknown. Wilderness is just as much a cultural concept as a natural resource. Second, there is the enjoyment to be gained by armchair exploration, through the medium of films and books. And third, there is the possibility that scientific knowledge gained from such unmodified areas may enrich our lives. The wilderness area provides for the preservation of the natural environment; an historical model: land as it was. Besides conservation, the area allows for the observation of long- and short-term changes providing environmental base lines against which the surrounding "unprotected" areas can be compared. Further to this, wilderness areas are our gift to the future. By protecting wilderness areas we keep land-use options open for our children. So, although wilderness areas are primarily to fill a cultural and recreational need, their preservation also has conservation benefits (Department of Lands and Survey et al. 1980 in Cessford 2001:96).

The associated Joint Policy Statement states that development of a common policy on Wilderness Areas "would provide the basis for public appreciation and use of that land, consistent with its preservation in perpetuity" (Department of Lands and Survey et al. 1980 in Cessford 2001:100).

The Joint Policy Statement defines a Wilderness Area as follows (p100):

A wilderness is an area of land of primeval character which is protected and managed so as to perpetuate its natural condition and which:

(1) Generally appears to have been affected primarily by the forces of nature, with any imprint of man's interference substantially unnoticeable;

(2) Is of sufficient size as to make practicable its preservation and use in an unimpaired condition and to give opportunities for solitude and for primitive and unconfined types of recreation.

Everyone has a personal concept of wilderness experience and that concept is important to the individual.

The Joint Policy Statement stipulates how Wilderness Areas should be managed. Amongst other matters, it states that "vestiges of human occupation or modification are not compatible with the wilderness experience" (Department of Lands and Survey et al. 1980 in Cessford 2001:100).

The Statement also includes direction about aircraft landings and overflights, in order to "ensure the preservation of the quiet enjoyment" (Department of Lands and Survey et al. 1980 in Cessford 2001:102).

Prepared five years later, the New Zealand Wilderness Policy (Wilderness Advisory Group 1985 in Cessford 2001) defines the 'wilderness experience' and specifies parameters of Wilderness Areas and their management (not reported here given the terrestrial focus). The wilderness experience is described as:

(a) The idea of wilderness is very personal. It embodies remoteness and discovery, challenge, solitude, freedom, and romance. It fosters self-reliance and empathy with wild nature. Wilderness is therefore principally a recreational and cultural concept which is compatible with nature conservation.

(b) Wilderness recreation is available to everyone and is an important part of the wide range of recreational opportunities that exist and should remain in New Zealand. A wilderness experience can be gained in a variety of natural landscapes but for some people a large natural area is required. However, to retain the widest opportunities for outdoor recreation, management of some large remote areas as wilderness is necessary.

(c) The wild lands of the world are rapidly shrinking and will become rare in the near future. The opportunities New Zealand can offer for wilderness recreation are therefore of international significance (Wilderness Advisory Group 1985 in Cessford 2001:103).

Cessford and Dingwall (2001) writing about 'keeping the wilderness in recreation' noted that maximising the general qualities of wilderness in recreation outside formally designated Wilderness Areas requires management which reinforces perceptions of unaltered natural settings, low-impact and experience-sensitive facilities and services, unobtrusive regulatory presence and minimal apparent visitor numbers.

Some studies look at the impact of wilderness designation on values (eg. Hawes and Dixon 2020, Johnston et al. 2020). Formal designation can be seen as a management action and is not necessarily liked. Johnston et al. (2020), for example, found that people who considered recreation values as important had more negative attitudes toward marine reserves and these attitudes would become even more negative if these areas were to be designated as formal wilderness.

Notwithstanding the above issues, most wilderness definitions (classifications and designations) contain a similar array of features. The IUCN classification of 'Wilderness Areas' focuses primarily on the physical aspects of wilderness and describes a landscape that is largely devoid of humans, whereas Hawes and Dixon's (2020) broader wilderness description allows for greater human presence:

Protected areas that are usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition (IUCN 2021).

Wilderness is land characterised by a high degree of biophysical naturalness, linear remoteness from infrastructure and landscape disturbances, and time remoteness from points of mechanised access, as well as having minimal evidence of modern technological society. Wilderness by this definition can include areas that are or have been sustainably inhabited, utilised and influenced by Indigenous people following traditional, wilderness-based ways of life to (Hawes and Dixon 2020:29).

As these two definitions show, wilderness is often defined by what it does not contain – some studies have employed 'reverse coding' to measure values as people found it easier to describe what these values were not than what they were (Winter and Lockwood 2004).

Perceptions of wilderness

A considerable body of recreation research has focused on the identification of wilderness properties or elements (and the identification of wilderness indicators) as well as on user perceptions of wilderness. While these studies do not explicitly examine values, they often generate data that describe key recreation use (experiential) values associated with different setting types. Often images have been used to elicit responses.

Kliskey and Kearsley (1993), for example, identified four elements of wilderness from backcountry users in New Zealand – absence of human impact, aspects of forest and vegetation, isolation or remoteness, and solitude. Indicators of these wilderness properties included the presence/absence of: developed campsites, maintained tracks and bridges, maintained huts/shelters, hydro-electric development, logging, commercial mining, little human impact, road access, maintained tracks, motorised travel, remoteness from towns or cities, exotic vegetation cover, large geographic area, commercial recreation, minimal other people (Kliskey 1998, Kliskey and Kearsley 1993).

Perceptions and values of wilderness vary by different types of people. While environmental perceptions are derived from subjective experiences they are tempered by cultural and social factors (Cole 2005, Kliskey 1998). Watson et al. (2003) suggest that physical and ethereal qualities of wilderness vary too greatly to be discussed as a general concept because values vary across social groups.

Perceptions of wilderness have been reported to vary from country to country with these differences attributed to life experience and a 'sense of place' unique to that country and its citizens (Barr and Kliskey 2014). Examples reported include different perceptions of 'wild' held by rural and urban Canadian residents and a more utilitarian viewpoint towards wilderness held by the Swiss (with feeling free from rules an important social value associated with wilderness). Higham (1998) found differences by nationality in international visitors to New Zealand according to a nature 'purism' scale; visitors from Japan and Israel tended non-purist, whereas those from Australia, the United Kingdom and the USA were strongly purist.

Higham et al. (2001) examined wilderness perception held by New Zealand domestic recreationists, New Zealand non-users and international visitors. They found that international visitors were neutral towards solitude and the majority could achieve a wilderness experience in the recreational frontcountry. They noted that increasing waterborne traffic in the fiords may threaten their wilderness status.

Perceptions of wilderness also vary by participation in different types of recreational activities (Kliskey 1998). The dominance of terrestrial studies of 'wilderness recreation' in much of the recreation and tourism research literature has led to a focus on those seeking an experience centred around self-sufficiency and independence. Higham (1998), for example, describes recreational wilderness experiences which embrace aspects of autonomy, spontaneity, freedom of action, and mental and physical challenge with a certain degree of risk.

This contrasts sharply with tourism experiences which are undertaken within the structured tourism environment (ie. commercialised and highly facilitated). Boyd and Butler's (1996) spectrum of ecotourism opportunities ranged from eco-specialists to eco-generalists, with eco-specialists being similar to wilderness recreationists in respect of seeking small group experiences, having higher skill and knowledge levels and being more oriented to a natural environment. For both eco-specialists and eco-generalists (who prefer to travel as part of an organised tour), however, the presence of attractions (eg. wildlife seldom seen elsewhere) and viewing other elements of the natural environment was a more important visit motive than an express desire to experience 'wilderness'. As such, the opportunity to visually experience natural environments (aesthetic experiences) represents an important component (value) of wilderness for tourists and also impacts on wilderness values more broadly.

Some wilderness perception research reported in the tourism literature engages with a variety of stakeholders (including tourism operators) and also reflects the spread of tourism and recreationists beyond terrestrial wilderness into marine settings. Pomeranz et al.'s (2015) examination of different stakeholder' (agencies, tour operators, cruise lines, and local residents) definitions and perceptions of wilderness in relation to a wilderness area in Alaska found that the larger tour operators and cruise industry personnel tended to be less purist than agency personnel and small operators. They hypothesise that that may be a reflection of the business models of these large operations (whose scale may be seen as out of place in wilderness where solitude often implies distance from large groups) (Pomeranz et al. 2015).

Other studies have broadened their study participants to stakeholders (Barr and Kliskey 2014). Summerson and Bishop (2012), for example, studied a range of people with an interest in Antarctica. They used a series of images showing a range of activity and pristine scenes to assess perceptions of wilderness in Antarctica and found the lowest assessments of wilderness in the Antarctic context were given to complex infrastructure (eg. stations and associated infrastructure) and large-scale transient activity (eg. ships and aircraft) while images showing minor transient activity (eg. small field parties) and evidence of recent transient activity were generally assessed as having less impact on wilderness. In a departure from the focus on perceptions based on wilderness imagery, Seekamp and Cole (2009) explored the words used by stakeholders to describe solitude, primitive recreation, and unconfined recreation (ie. the meanings) as experiential qualities of wilderness.

In the Antarctic context, Summerson and Bishop (2012) differentiate between wilderness values (relating to large natural areas undisturbed by human activity) and aesthetic values (relating to perceptions of scenic beauty). Brown and Alessa (2005) examined the relative strength of general landscape values as predictors of wilderness value – 'wilderness areas reflect values associated with indirect, intangible, or deferred human

uses of the landscape — life-sustaining, intrinsic, and future values’ (p14). Mace et al. (1999) found that a landscape that is determined to be scenically beautiful also elicits positive ratings of tranquillity, freedom, and solitude. Variations in perceptions of the types of landscape considered to be ‘scenic’ have been reported. In forest settings, for example, aesthetic quality is closely aligned to perceived naturalness (ie. scenic beauty is inversely related to the proportion of the viewed area that has been recently harvested) (Ford et al. 2014). Summerson and Bishop (2012) examined perceptions in relation to aesthetic (scenic) values of Antarctic images and found that the three most preferred images were of mountains and the three least preferred were of coastal ice-free regions. Similarly, wilderness landscape preferences have also been found to vary by country, with a Finnish study finding that virgin forest and open bogs were emblematic of wilderness (Barr and Kliskey 2014).

Shultis (2001) identified differences between popular conceptions of wilderness embraced by the public and political conceptions created by special interest groups, bureaucrats and politicians:

- Unprompted popular conceptions are less purist than political conceptions.
- Most common images (unprompted) of wilderness in study were bush/native forest, no evidence of impact, trees/forest/vegetation, peace/solitude/freedom and remote/isolated.
- Non-users (ie. the public) were found to overstate the role of achievement/challenge, escape, solitude and back-to-nature motivations.
- Users mentioned the less crowded aspects of wilderness and activity-oriented motivations much more than non-users.

While aesthetic values commonly are described by the various attributes of a view/environment, they also incorporate an abstract conceptual idea of beauty which includes a general concept of natural beauty, the beauty of individual objects in the forest (such as trees, ferns, animals), the quality of light and general atmosphere in forests, and an association of the sights, sounds, and smells of a forest with enjoyment (Ford et al. 2014). According to Ford et al. (2014) aesthetic experience is an ‘anthropogenic’ way to value the environment, based on human enjoyment (ie. enjoyment of beauty would be the ultimate end, rather than nature being valued for its own sake for people holding this value) and is largely distinct from a fuller recognition and respect for ecosystems despite being informed by both use and intrinsic values for nature.

3.4.3 DEFINING REMOTENESS

Two ways of defining remoteness are evident in the literature. Most common is the continuum approach (exemplified by the recreation opportunity planning frameworks described earlier) where remoteness is defined as ‘**almost wilderness**’. As such, remoteness is similar to wilderness, but is a less ‘strict’ definition or classification (Kliskey 1998).

In the second approach, **remoteness is defined as spatially and temporally distant**. Spatial ‘remoteness’ is defined by distance from the places where the structures, populations, and activities of modern civilization are concentrated (settlements, roads, etc.) (Boller et al. 2010, Kliskey and Kearsley 1993). Indicators of ‘distance’ have also included size (ie. land area) and accessibility factors, such as, for example, ‘taking two days to walk across’ or being able to be accessed via motorised traffic (Kliskey and Kearsley 1993).

Perceptions of remoteness in marine settings also take account of spatial and time distance factors with respect to distance from terrestrial access points, services and evidence of population or landscape modification. Hawes et al. (2015), for example, used a time remoteness measure (defined as the shortest non-mechanised traveling time from points and corridors of mechanised access) and assigned coastal points where power boat access was possible a time remoteness value of zero.

The New Zealand ROS marine settings classification (Taylor 1993) included three readily accessible waters classes (differentiated by land/sea, land, and sea accessibility) and remote and wilderness waters classified according to land-water access factors and nautical distance (and sailing time) from services and facilities. Oram’s (1999) marine settings also included a (coastal) population measure and distance (offshore) measure (eg. semi-remote marine settings were adjacent to isolated coasts and on waters 1-50 kms offshore, remote marine settings were adjacent to uninhabited coastal areas and more than 50kms offshore).

In the original ROS framework, motorised traffic was a key setting class indicator (ie. the primitive setting class and the first of two semi-primitive classes did not allow for any form of motorised traffic whereas the second semi-primitive class permitted some motorised access). While Taylor’s (1993) remote and wilderness

land settings did not allow motorised access, the distance from motorised access points was a key classification factor. In other words, the two definitional approaches may both be employed as they are within the New Zealand ROS framework.

In the tourism context, often remoteness is associated with visiting destinations that are situated in remote regions (eg. polar regions, distant islands), taking a global approach to the 'distance' definition. Boyd and Butler (1996), for example, report the growth of ecotourism development in the more remote and marginal areas of the world, including the remote landscapes of the polar regions.

While not always explicitly stated, **wilderness is commonly considered to contain a remoteness component**. Hawes and Dixon (2020:23) suggest that few wilderness definitions acknowledge the significance of remoteness – their definition recognises remoteness as:

A measure of landscape integrity, which contributes to the ecological viability and other values of wilderness areas. Requiring a wilderness area to be large does not ensure that it will contain remote country. We propose a descriptive definition of wilderness that recognises its experiential as well as its ecological, Indigenous and other values, and that incorporates remoteness as a defining characteristic of wilderness.

3.4.4 CULTURAL VALUES AS PART OF WILDERNESS

Interest in wilderness has broadened beyond recreation users to accommodate more societal values, including the interaction between subsistence and other wilderness users, and between wilderness and indigenous people (Watson et al. 2003).

It has been suggested that Western conceptions of 'naturalness' have historically ignored the role indigenous people have played in modifying the biota and landscapes of many areas now regarded as 'wilderness' (Hawes and Dixon 2020). Hawes and Dixon (2020) define wilderness to include indigenous peoples.

Outside the recreation and tourism literatures, there is a considerable body of work on how traditional ecological knowledge (TEK) can assist efforts to protect specific endangered species and the role of TEK in wilderness stewardship (Watson et al. 2003).

Hawes and Dixon (2020) note that contemporary definitions of wilderness stress that wilderness includes areas that are or have been sustainably inhabited, utilised or influenced by Indigenous people following traditional, wilderness-based ways of life. While the primary objective of IUCN Wilderness Area protection is to ensure that 'natural areas that are undisturbed by significant human activity' it also recognises the importance of indigenous, cultural and spiritual values:

To enable indigenous communities to maintain their traditional wilderness-based lifestyle and customs, living at low density and using the available resources in ways compatible with the conservation objectives.

To protect the relevant cultural and spiritual values and non-material benefits to indigenous or non-indigenous populations, such as solitude, respect for sacred sites, respect for ancestors etc. (IUCN 2021).

3.4.5 WILDERNESS VALUES IN MARINE SETTINGS

With a few exceptions, wilderness has primarily been defined (and formally recognised) with respect to terrestrial areas (Barr and Kliskey 2014, Johnston et al. 2020). While marine wilderness has attracted some attention in the literature there is debate around the attributes of wilderness across a diversity of marine settings.

In the ocean and coastal setting, marine reserves are often self-identified as 'wilderness' although Barr and Kliskey (2014:1) note that there is "no widely-held, consensus definition of what makes these areas 'wilderness', nor have the human uses that would be compatible, and incompatible, with preserving important wilderness attributes, values and qualities been identified and evaluated". A considerable body of USA literature focuses on issues associated with the formal designation of ocean wilderness (eg. Barr and Kliskey 2014) with some authors suggesting that an ocean wilderness designation provides a greater degree of protection than marine reserves and marine protected areas (Johnston et al. 2020).

According to Johnston et al. (2020:144) the emphasis for “marine wilderness has typically involved perpetuating natural conditions and processes, and evoking notions of areas being pure, pristine, highly biodiverse, unaltered, and untouched”. Cole et al. (2015) did not include ‘wilderness’ as a value in their coastal zone social value typology because it was considered less relevant to coastal settings than ideas of ‘naturalness’.

Inglis et al. (1999) suggest that safety considerations may be more important in evaluations of marine environments than they are in terrestrial park settings, leading to a greater tolerance for structures and equipment use and less emphasis on naturalness.

An illustration of the difference between terrestrial and marine settings is provided by the marine-based frameworks. They emphasise remoteness attributes (rather than naturalness attributes) which highlights the importance of (motorised) access. For example, Orams’ (1999) Spectrum of Marine Recreation Opportunity framework describes a ‘semi-remote waters’ experience which offers the opportunity to experience peace and quiet and to get close to nature while ‘remote waters’ offer solitude, tranquillity and closeness to nature in an isolated environment. While these attributes are experiential qualities of wilderness settings (solitude, closeness to nature etc.), they are focused on the remoteness of the setting rather than its wilderness (naturalness) qualities.

3.4.6 ELEMENTS OF WILDERNESS AND REMOTENESS VALUES

In order to understand the nature of the wilderness experience and potential effects upon it, Table 3.1 summarises key elements of wilderness and remoteness values derived from the research literature. The studies from which these elements were identified were undertaken in various contexts – Table 3.1 is ordered with those most similar to the fiords’ environment presented first.

While this report uses the term *element*, various labels are used in the research literature to describe the component parts of wilderness value, including attributes, values, adjectives, characteristics, properties, qualities and levels.

From an analysis of Table 3.1, seven common elements of wilderness have been identified. These are summarised in Table 3.2.

Table 3.1: Components of wilderness and remoteness described in the research literature

Descriptor (context)	Elements of wilderness (and remoteness)	Author/s
Wilderness attributes <i>Ocean and coastal places</i>	Amount of boat traffic, amount of noise, presence of human-made structures, ‘naturalness’, opportunities for solitude, and opportunities for preserving ecosystems and biodiversity.	Barr & Kliskey (2014)
Wilderness values <i>Marine environments</i>	Intrinsic values, biodiversity preservation, spirituality, personal wellbeing, aesthetic beauty, conservation of charismatic marine species.	Johnston et al. (2020)
Most important wilderness values <i>Marine reserves</i>	Protect marine species, water, or plants that have value even if humans do not benefit from them, protect habitat for marine species.	Johnston et al. (2020)
Common adjectives describing wilderness <i>Terrestrial (NZ)</i>	Natural, beautiful, unspoilt, inspiring, restful, free, challenging, wild, valuable, remote, exciting, mountainous, roadless, unique, alive, educational, forested, sacred, good, pure.	Wilson (1979) reported in Kliskey & Kearsley (1993)
Levels of wilderness <i>New Zealand</i>	Wilderness areas of pristine ecology, phenomenal wilderness, legal wilderness, perceptual wilderness.	Higham (1998)
General properties of wilderness <i>Terrestrial (NZ)</i>	Absence of human impact (artificialism), aspects of forest and vegetation (naturalness), isolation or remoteness, and solitude.	Kliskey (1998), Kliskey & Kearsley (1993)
Common characteristics of wilderness attitudes <i>Terrestrial (NZ)</i>	Solitude, freedom, naturalness, aesthetic appreciation, spiritual values, and mystical dimensions of the wilderness experience.	Kliskey (1998)

Descriptor (context)	Elements of wilderness (and remoteness)	Author/s
Experiential qualities of remoteness <i>Terrestrial areas (Switzerland)</i>	Tranquillity, solitude, and pristine nature.	Boller et al. (2010)
Experiential qualities of wilderness <i>Terrestrial (high-use destination)</i>	Solitude, primitive recreation, and unconfined recreation.	Seekamp & Cole (2009)
Wilderness landscape values <i>Terrestrial</i>	Life-sustaining, intrinsic, and future values.	Brown & Alessa (2005)
Wilderness values <i>Australia</i>	Remoteness from settlement, remoteness from access, apparent naturalness and biophysical naturalness.	Hawes et al. (2015)
Values of wilderness <i>Terrestrial</i>	Ecological, Indigenous, experiential, sociocultural and intrinsic, are often coexistent and complementary.	Hawes & Dixon (2020)

Table 3.2: Summary of wilderness elements

Wilderness element	Element definition	Comments
Remoteness	Isolation. Distance from population/civilisation. Difficulty of access.	May be moderated by access required for safety purposes.
Naturalness	Natural, pristine, non-modified nature, wild, vegetated, mountainous, marine species (etc). No evidence of human modification (structures) – presence and visibility.	Absence of human modification a key feature. Relates to both use values (appreciation, enjoyment) and intrinsic values.
Minimal human presence	Absence/low numbers of other visitors. Minimal human activity. Type of activity: some activities more acceptable.	Fosters feelings of solitude, remoteness. Acceptable activities may include indigenous food gathering, subsistence, historic settlement. Non-commercial activity may be more acceptable than commercial activity.
Natural quiet	Absence of non-natural noise.	Common references to aircraft and other forms of motorised transport. A component of naturalness, associated with human presence and remoteness.
Aesthetic appreciation	Scenery appreciation. Scenic, beautiful, tranquil, unspoilt.	Perception of scenic beauty. Associated with naturalness and human presence (including noise).
Conservation related	Formal protection designation. Conservation management activity (eg. pest control, rules). Biodiversity/species protection.	Knowing a species/area is protected and managed. Relates to both intrinsic value (including bequest, life-sustaining, future values) and use value (opportunity to view rare or charismatic species).
Personal experience	Spiritual, wellbeing, solitude, freedom, primitive recreation, risk, challenging, sacred, mystical, educational.	Relates to both use value (enjoyment, benefits) and intrinsic value.

3.5 IMPACTS ON VISITORS' EXPERIENCE

A long history of concern over the effects of increasing use on the quality of the recreation experience is evident from the research literature (Manning 1999). Research on crowding at recreation and tourism sites has explored the notion that there is some level of visitor use beyond which the quality of the visitor experience diminishes (Manning 1999). Key terms are:

- **Social carrying capacity** – provides a framework for examining and managing this problem. Research has shown that the relationship between parameters of use and aspects of the visitor experience is complex because of the multifarious aspects of human behaviour, perceptions and values (Booth and Cullen 1995).
- **Crowding** – is a perceptual measure (rather than a numerical count) with perceptions of crowding strongly related to visitor expectations. Crowding occurs when a recreationist perceives that the number of people present is interfering with the realisation of their desired experience (Booth and Cullen 1995).
- **Conflict** – arises from competing activities/uses, between groups of similar users, and between users and other stakeholders.

There is a large outdoor recreation literature about crowding, and the associated concept of conflict (especially between different types of recreational activities), predominantly focused upon on-site interactions between different user groups. While similar crowding issues occur with respect to tourist experience, crowding in the tourism literature reflects the broader range of tourism environments with an emphasis on commercial host-guest and tourist-resident encounters, and larger scale destination sustainability (Sharpley 1999).

The tourism research indicates that while ecotourism in a given location generally starts by appealing to small numbers of visitors (eg. expert specialists) who require minimal infrastructure and have little ecological or social effect, these are replaced later by greater numbers of visitors (eg. general wildlife tourists) who may demand enhanced infrastructure which impacts significantly on setting naturalness (Davenport and Davenport 2006). Because wilderness and remoteness are defined in part by the absence of people and of evidence of human activity (see Table 3.2), impacts upon these values are altered by the presence of people.

Marine tourism experiences (especially those occurring away from the shoreline) include visitors interacting with the commercial operator/guide, with others in their own group or other passengers on their boat, in part as a result of dependence on facilitated boat (and sometimes air) access to the setting.

3.5.1 IMPACTS RESEARCH IN COASTAL AND MARINE SETTINGS

While a large body of research has addressed recreation and tourism impacts in coastal and marine areas, the primary focus has been biophysical impacts. Most studies have centred on high use, high density constrained sites (such as small marine protected areas, surf breaks and coral reefs) – quite different to the marine setting of the fiords.

Very little research attention has been paid to the effects of encountering other boats upon the experiences of visitors (themselves on board boats) in settings similar to Fiordland. Indeed, a research gap is evident with respect to the impact of perceived crowding upon the experiences of visitors on board boats in coastal and marine wilderness environments.

Key areas of research on environmental impacts are the effects of boats (and support infrastructure) on shorelines and water quality, and the impacts of both boats and visitors on wildlife (Davenport and Davenport 2006, Needham and Szuster 2013, Warnken and Byrnes, 2004). Specific environmental impacts reported in this literature include habitat damage to breeding areas and disruption to natural habitats, wake damage to shorelines (Davenport and Davenport 2006), damage caused by visitors handling coral, standing on reefs, feeding marine species, or getting too close to marine mammals (Needham and Szuster 2013) and the emittance of polluting substances by boats, physical damage by boat anchors and propellers (Warnken and Byrnes 2004).

While Warnken and Brynes (2004) considered the environmental impacts of different types of tourism vessels (operated either by or for tourists) in respect of mooring/launching sites, in transit to specific marine destinations and in open water destinations, much of this research has focused on constrained spatial sites

– within which there is both potential for greater impacts and it is easier to measure impacts – such as marine protected areas, reef systems and the tidal coastal zones which attract surfers, snorkellers, divers and other outdoor recreationists. Although many of the higher use zones are located close to urban population centres or occur along the seashore, these sites also provide access to the offshore coastal and more expansive ‘blue water’ marine areas classified by Taylor (1993) and which are key settings for wildlife tourism encounters (Orams 1999, Ziegler et al. 2019).

Studies of crowding in coastal and marine settings have similarly focused on constrained high use areas (eg. Bell et al. 2011, Inglis et al. 1999, Needham 2013). High density wildlife viewing sites have also attracted considerable attention (eg. Ziegler et al. 2019). Davenport and Davenport (2006) attribute experiential crowding and conflict issues to increased (over)demand in restricted spatial sites.

Socio-cultural impacts arising from tourism are well documented in the tourism literature (eg. Sharpley 1999) and have been identified with respect to marine tourism (Orams 1999). Socio-cultural impacts have been linked to globalisation and, in particular, the spread of tourism and tourists into remote regions of the world, although to some extent growth is restricted by both the cost of travel and remoteness (Sharpley 1999, Watson et al. 2003). As noted in section 3.4.3, tourism has spread into many peripheral and polar regions which offer experience of settings which contain both wilderness and cultural elements (Boyd and Butler 1996, Watson et al. 2003).

Watson et al. (2003), however, note that while ‘wilderness’ represents a key visitor attraction factor in regions such as the arctic north, tourism can also impact negatively on local community and culture. This includes the exploitation of native cultures for financial gain and the effects of increasing numbers of tourists (many of whom are seeking unique experiences) with respect to crowding, impacts on environmental and cultural values and increased constraints on realisation of traditional values (Watson et al. 2003).

On a more positive note, it has been suggested that globalisation may amplify the importance of traditional forms of nature contact for those cultures that see it as part of their identity (Watson et al. 2003). Others have suggested that indigenous people have embraced wilderness preservation as a way of protecting their culture and heritage (Cessford 2001, Hawes and Dixon 2020). The importance of wilderness is reinforced by Watson et al. (2003:6) who suggest that “protecting places as wilderness may be a significant means of protecting traditional lifestyles in a global world”.

3.5.2 CROWDING FRAMEWORK

Dogru-Dastan (2020) has reviewed the crowding literature published between 2000 and 2019 (n=178) in the contexts of tourism and recreation and developed a framework for conceptualising crowding (Figure 3.2).

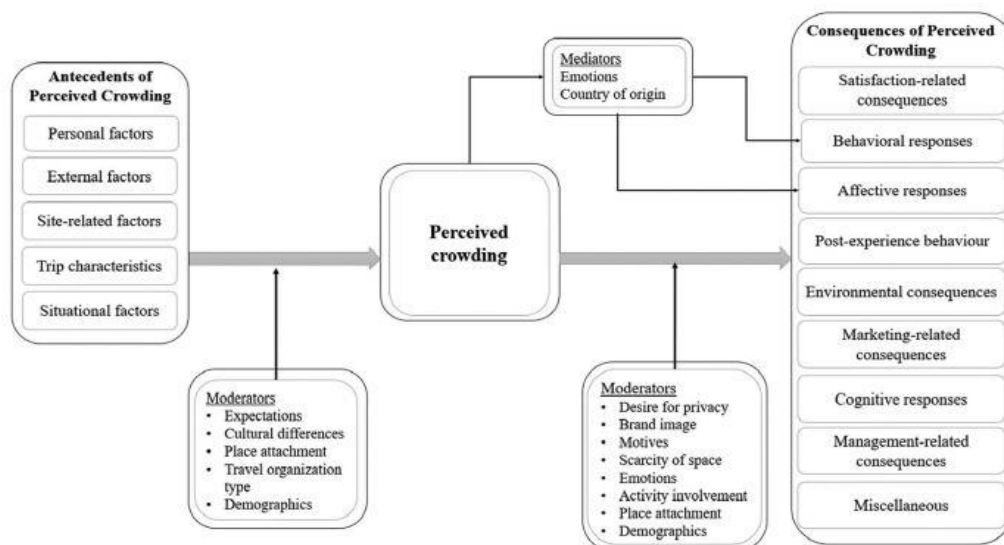


Figure 3.2: An integrated framework of perceived crowding in the contexts of tourism and recreation (Dogru-Dastan 2020:8)

Of particular interest is the identification of antecedent and moderating factors that influence perceptions of crowding, as well as factors that influence responses and consequences subsequent to crowding being perceived. The key antecedents of perceived crowding identified by Dogru-Dastan (2020) are shown in Table 3.3 alongside the percentage of research attention each has attracted. Antecedent and moderating factors both act to influence an individual’s perception of crowding.

Research on crowding with respect to marine-based outdoor recreation and tourism to date has been on antecedent factors and mediators/moderators, rather than on consequences. As such, the research literature represents a description of key issues (and some consequences) with respect to crowding but not the answers.

Table 3.3: Antecedents of perceived crowding (identified by Dogru-Dastan 2020)

Antecedents of perceived crowding (% of research attention)	
Personal factors (40.3%)	Socio-demographic variables, country of origin, norms, past on-site experience, motivations, tolerance levels, past activity experience, preferences, expectations, place attachment, time orientation
External factors (25.6%)	Use levels, behaviour of others, encounter levels, number of vehicles, similarity between groups, distance between users
Site-related factors (19.4%)	Site facilities, resource/setting type, environmental conditions on site, resource availability/accessibility, distance of site, management strategies, popularity of attraction, price of service
Trip characteristics (7.4%)	Length of trip, travel companions, activity type, travel organisation type, frequency of travel, and travel mode
Situational factors (7.2%)	Time of visit, place of contact, weather conditions

The key factors found to influence crowding in outdoor recreation and tourism in marine settings are described below. They represent the majority of the antecedent and moderating factors identified by Dogru-Dastan (2020).

3.5.3 MEASURING ENCOUNTERS (RESEARCH METHODOLOGY)

Considerable attention has been given to ways to measure crowding in marine settings. Particular challenges exist around the measurement of subjective norms and visitor expectations, and understanding variations associated with different visitor groups. Needham (2013), studying crowding in coastal and marine areas in Hawaii, suggests that the following attributes should be measured when addressing social capacity issues: encounters (subjective counts of the number of other people that an individual remembers seeing in a setting), norms (standards that individuals use for evaluating activities, environments, management actions, or conditions as good or bad, better or worse) and crowding (subjective negative evaluation that this number of encounters or people observed is excessive).

The most appropriate encounter measures have been debated, for example, boats or people, numerical or visual. Numerical measures rely on people being able to recall what they have experienced and are suggested to be effective only in low density settings (Ziegler et al. 2019). Research in higher density settings often employs visual measures (eg. showing respondents manipulated images of different numbers of boats) rather than relying on visitors’ reports of their on-site experience (eg. Inglis et al. 1999, Kim and Shelby 2011, Summerson and Bishop 2012).

The type of crowding measure employed also varies according to the type of activity under examination. Crowding with respect to boat-based wildlife viewing, for example, has been examined with respect to the number of other boats as well as the number of other people on board the vessel, whereas in-water crowding might involve other swimmers/divers, the number of other tourists on the boat and the number of other boats (Ziegler et al. 2019). Because most users were not usually visible at the site (as a result of being underwater, on covered boats, or within a line of sight blocked by waves and other boats), Bell et al. (2011) measured encounters, crowding and norms with respect to the number (and size) of boats at a high-use marine protected area used for snorkelling.

Ziegler et al. (2019) suggest that the perspectives used in images to assess encounters and norms vary more in marine environments than in terrestrial settings. Swimmer norms, for example, may differ from underwater and above water, while boat norms and encounters may be viewed from land, on board and aerial perspectives.

Seekamp and Cole (2009) identified considerable variability in the definition of experiential qualities of wilderness. They found variations in how people described the nature of their wilderness experience and subjectivity in how perceptions associated with expectations, encounter norms and crowding were defined. 'Solitude', for example, was defined as being alone (expressed in various ways – eg. completely alone, alone with a group, time spent alone and the subjective nature of alone), as well as with respect to encounters (expressed, for example, as with other groups, evidence of other groups, evidence of past groups, sound of other groups, behaviour of other groups). Other examples highlighted were the subjectivity with respect to the acceptability of mechanised/motorised equipment, different management strategies, and the desirability of different types of behavioural regulations (Seekamp and Cole 2009).

While Manning and Lawson (2002) describe these measures (and the information they gather) as the 'values of science', they also report a growing body of literature that addresses the corresponding 'science of values'. Science of values are normative judgements about the amount and type of visitor use that can be encountered without unacceptable impacts, taking account of the fact that visitors may value both solitude and access, and that these values may conflict (Manning and Lawson 2002). It is difficult to accommodate (and measure) these trade-offs when evaluating acceptable use levels, making it difficult to determine carrying capacity.

3.5.4 TOUR BOAT PASSENGERS' NORMS

In the only study found that well replicated the Fiordland environment and its use, Manning et al. (1996) examined tour boat passenger encounters (both hypothetical and observed) with four types of watercraft (cruise ships, tour boats, pleasure boats, kayaks/canoes) and aircraft in Glacier Bay National Park, Alaska. With respect to personal norms associated with the number of watercraft/aircraft seen, ratings were consistent across all types of watercraft and aircraft: perceptions of pleasantness declined as vessel/aircraft numbers increased. The exception was encounters with kayak/canoes which added to the enjoyment of most visitors.

In this study, Manning et al. (1996) were investigating norm congruence (also called 'norm-impact compatibility) – how well visitors' normative standards match their crowding/impact assessments. 'Normative standards' are "standards that individuals use for evaluating activities or environments as good or bad, better or worse" (Vaske et al. 1986 cited in Manning et al. 1996:127). Results were mixed and suggest that the reliability of using visitors' evaluations of appropriate standards for a setting to address carrying capacity remains unsatisfactory.

3.5.5 INFLUENCE OF BOATS AND THE MARINE ENVIRONMENT

As might be expected, norms, encounters and crowding perceptions in marine settings are commonly focused on the number and type of vessels present, as well as on spatial and behavioural aspects of vessel operation. The behaviour of a vessel encountered, or the timing of an encounter, can impact on how it is evaluated (Manning et al. 1996). Lusseau (2005), for example, undertook casual interviews with boat skippers and reported social issues with respect to the behaviour of 'other' tour boat operators during dolphin interactions, and tensions between dolphin-watching permit holders and non-permit holders. In an examination of the effects of mass tourism and related transport infrastructure on coastal ecosystems, and the impact of different types of personal leisure transport on the coastal environment, Davenport and Davenport (2006) reported conflict between motorised and non-motorised activity participants.

The impact of expectations on crowding perceptions has been investigated in a variety of marine settings. Bell et al. (2011), for example, found that people visiting a snorkelling site on smaller boats were slightly more likely to have expectations of escaping crowds, although the majority of respondents (even those on bigger boats) expected to do so.

Inglis et al. (1999) also note perceptual differences between marine and terrestrial environments. Marine settings, for example, can be open and featureless with no physical or biological attributes to block out others, have impaired underwater visibility and fewer auditory or olfactory cues to indicate the presence of

other users. Inglis et al. (1999) found crowding thresholds to be more than two times higher under the water surface than above water (ie. people felt less crowded underwater). Whereas Ziegler et al. (2019) found swimmer crowding to be a better measure than boat crowding with respect to impacts on experience in whale shark watching.

Warnken and Byrnes (2004) acknowledge risk to the human experience through the presence of human-made items (ie. infrastructure/boats) in otherwise little developed natural scenery and from encountering noise from boat engines.

Needham (2013) suggested that the number of other users is sometimes under-estimated (as a result of their spatial distribution and clustered groupings) while factors such as noise, the type of activity group encountered, and discourteous behaviour may lead to over-estimation. Clustered groupings (common in marine and underwater settings) was also reported by Inglis et al. (1999) while, in a lake setting, Kim and Shelby (2011) found there to be more concern about crowding on the lake than at access areas, suggesting that users perceive more crowding when encounters are moving.

Others have discussed (but not researched) indirect impacts on the visitor experience arising from environmental impacts on the coastal and marine resource (Davenport and Davenport 2006). Boyd and Butler (1996), for example, note the importance of maintaining the quality and ecological integrity of the resource base in which ecotourism is being undertaken in order to ensure that it remains attractive to tourists and other users.

Boyd and Butler (1996) suggest that, while the quality of the natural environment is important, the quality of the recreation experience for the ecotourist themselves is also impacted by the levels and nature of interaction between groups of users.

Several authors have noted challenges associated with marine settings, but not terrestrial settings, with respect to the preservation of wilderness values. These challenges are related to the nature of marine activities and, in particular, the reliance on motorised transport for access to the recreation/tourism setting, alongside a greater reliance on equipment, safety facilities and the use of life support mechanisms (eg. scuba equipment) (Barr and Kliskey 2014, Inglis et al. 1999, Tseng et al. 2009).

3.5.6 ACTIVITY AND VISITOR CHARACTERISTICS

Variations in norms and crowding perceptions have been reported in relation to different activity and user characteristics. Many of these factors represent both antecedent and mediating/moderating factors (Figure 3.2).

More specialised and experienced visitors (recreationists) have been found to hold more fully developed and strongly held normative standards (ie. what they find appropriate) than first-time visitors participating in a non-specialised activity (eg. tourists on tour boats) (Manning et al. 1996). The Last Settler Syndrome (Nielsen et al. 1977) explains that visitors set their norms at the level of use they encounter on their first visit. Changes in use prior to subsequent visits can then lead to a mismatch between expectations and reality, resulting in low satisfaction. This is less relevant for tourists (who are often first-time visitors to a site) while experience of crowding may impact significantly on repeat visitors (who may have a strongly developed place attachment).

Place attachment (or sense of place – Eyles 1985) incorporates the geographical aspect of ‘place’ into recreation motivations. People (recreationists) develop an attachment to a place through frequent visits, and this influences their motivations, expectations and perceptions for that place.

A number of participant characteristics/factors have been reported to impact on tolerance for/perceptions of crowding. Ziegler et al. (2019) found that nationality, specialisation, reported encounters, and swimmer behaviours all affected whether a respondent felt crowded at the site with respect to swimmer numbers. Other studies have reported mixed results with some confirming variance in perception, but not crowding. Kalisch (2012), for example, hypothesised that crowding effects would vary by day or season of use and found that, while this variation did occur, there were very low levels of crowding reported. Likewise, local visitors rated levels of encounter higher than tourists, but no significant differences with respect to crowding perceptions were found. There was also no evidence to indicate variations in crowding perception among different activity groups and, although visitors with past experience did not report greater crowding

perceptions than first time visitors, it was noted that displacement may have already occurred with repeat visitors (Kalisch 2012).

Inglis et al. (1999) differentiated visitors to a snorkelling site (according to their level of experience and familiarity with the marine environment, including the specific research site) and found that, on average, tourists were most tolerant of large numbers of other people and (activity) novices found the presence of boats to be more acceptable. Respondents who were more experienced (specialised) in respect of marine recreation were less tolerant of the human-made structures than were novices.

Jurado et al. (2013) adapted the social carrying capacity model to a mature coastal destination in Spain and identified an indicator of the proportion of tourists who perceive overcrowding and are predisposed to leave (representing one of the few studies to consider behavioural responses to perceived crowding). The study found high status tourists (eg. mature, high income and education levels) to be less tolerant of crowding, which contrasted with terrestrial studies that found younger people to be less tolerant.

3.5.7 TRANSIENT ACTIVITY EFFECTS ON WILDERNESS PERCEPTION

In the only study found that discussed transient activity effects upon wilderness perceptions, Summerson and Bishop (2012) measured participants' assessments of wilderness based on photographs showing transient activity and infrastructure. Their results indicate a difference between the effects upon wilderness perceptions from infrastructure and transient activity in the Antarctic context.

They describe 'transient' activity as being short duration (people, vehicles, evidence of their passing (such as tracks in the snow)), as well as single season field camps. In comparison, infrastructure is more permanent (in place for multiple years) and includes structures, marked routes, airstrips, etc. They sub-divide these categories further: 'major transient' (ships, aircraft or heavy vehicles); 'minor transient' (light vehicles or people on foot); 'complex infrastructure' (multiple buildings and structures); and 'minor infrastructure' (one or two structures only).

In their study, the lowest assessments of wilderness were given to complex infrastructure and to large-scale transient activity, while images of minor transient activity were generally assessed as having less impact on wilderness. The presence of infrastructure also impacted on aesthetic wilderness preferences – minor levels of transient activity were more tolerated.

3.5.8 COMPATIBILITY OF ACTIVITIES

The compatibility of different activities within marine settings has attracted some research attention and is often focused on the different size and types of access vessels (including aircraft). Barr and Kliskey (2014) measured perceptions of different activities compatibility with wilderness: compatible, likely compatible, maybe or maybe not compatible, and incompatible. 'Compatible' human uses (activities) of ocean settings included guided wildlife viewing, snorkelling, sailboat tours, kayak/canoe tours, while 'likely compatible' ones included recreational non-consumptive activities, subsistence and cultural food gathering. Recreational fishing and collecting food were 'maybe or maybe not compatible' and guided motorboat tours and recreational motorboating, commercial fishing and shipping were 'incompatible'.

While Barr and Kliskey (2014) note the general incompatibility of commercial activities in wilderness settings, they suggest that many marine setting studies do not allow for the reality (and necessity) of motorised transport and facilitated access.

A wider array of activities is described by Barr and Kliskey (2014) in comparison to those considered in terrestrial settings, including some which represent consumptive resource use (and which were rated as incompatible). While compatibility represents a value judgment, Lusseau (2005) reported, in a study of the Fiordland scenic cruise industry, the possibility that visitors who encounter activities that do not match their expectations may ultimately compromise the sustainability of tourism operations.

Dogru-Dastan (2020) reported one study which found that visitors' perceptions of exclusiveness and uniqueness were negatively affected due to the feeling of being cramped in the cruise travel space (tourism growth itself impacting negatively on experience).

3.5.9 SOUND IMPACTS

A growing body of literature has addressed the impacts of sound on both the visitor experience and aesthetic value assessments (Kim and Shelby 2011, Mace et al. 1999, 2004). Mace et al. (2004) note the potential for both noise and air pollution to detract from the enjoyment of the visitor experience, with air pollution impacting on visibility-related attributes which are an important part of an enjoyable recreation experience aesthetic. According to Mace et al. (2004:8) “people place a high value on clear vistas and natural quiet, yet visibility and noise problems are becoming more and more intrusive in national parks and wilderness areas”.

Sound is commonly assessed according to whether it is natural or human in origin and judged with respect to the extent to which it is in harmony, or incongruent, with the setting (Kim and Shelby 2011). Even loud natural sounds (eg. turbulent waterfall) may be evaluated positively whereas low levels of mechanised sound may not be tolerated (Mace et al. 1999). Kim and Shelby (2011) suggest that a number of sound factors warrant more research attention, including the effects of intermittent sound and of different volumes or combinations of sound. While consideration of the impact of sound (and sometimes smell) has extended the research parameters beyond reliance on visual data and represents a more comprehensive experiential understanding of norms and encounters (Ford et al. 2014, Kim and Shelby 2011), the majority of ‘sound impact’ research has been undertaken in terrestrial areas (and in relation to helicopter noise) (Mace et al. 2004).

Helicopter noise interferes with many attributes considered to be important to the visitor experience (levels of tranquillity and solitude) and even affects the perceived aesthetic quality of landscapes (Mace et al. 2004). Mace et al. (1999) found that helicopter noise resulted in lower evaluations of national park scenic landscapes, solitude, tranquillity, freedom, and naturalness, regardless of the reasons for the flight (eg. tourist overflights, backcountry maintenance, hiker rescue). In a national park setting, Benfield et al. (2010) found that the presence of air traffic, ground traffic, and human voices significantly decreased ratings of serenity with the effects strongest for scenes that were high in scenic beauty. A considerable amount of research into the impact of aircraft noise on the (terrestrial) outdoor recreation experience has been undertaken in New Zealand (Booth and Lynch 2010).

Mace et al. (2004) point out that because noise from aircraft, snowmobiles, and other forms of mechanised transportation is likely to be intermittent and not under the control of the typical visitor, the potential for it to cause stress and annoyance is increased.

Few studies have specifically addressed boat noise on visitor experience, although Davenport and Davenport (2006) discuss noise-related safety issues and noise pollution in relation to the use of personal watercraft in coastal environments. Mace et al. (2004:22), however, also raises the point that “the source of noise is often another recreationist whose production of the sound is an important aspect of his or her enjoyment of the setting”.

3.6 FIORDLAND RESEARCH

Several studies have examined visitor and stakeholder perceptions of Fiordland.

Values that stakeholders attributed to Fiordland were elicited in a 2018 study; 20 in-depth interviews were undertaken with people who regularly spent time in the Fiordland National Park area. The work was undertaken for the Department of Conservation Te Papa Atawhai to inform the development of a new island and coastal biosecurity plan for the region (Edge Hill 2020). Questions asked about stakeholders’ values, activities and behaviours. One question asked interviewees what three things they valued most about coastal Fiordland (encompassing the fiords and outer coast). Their responses were grouped into six themes (Table 3.4).

Table 3.4: Keywords and phrases used by contributors in response to question ‘What three things do you value the most about coastal Fiordland?’, arranged by theme (Edge Hill 2020:23)

Landscape and seascape	remote rugged unforgiving natural beauty wilderness wild changing landscape ‘untouched-ness’ vast changeable unchanged ‘back to nature’ beautiful breath-taking remote scenic fantastic beauty rugged splendour islands scenery under the water views everything magnificent terrific pristine beauty remoteness unspoilt
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Biodiversity	Wildlife lush abundance plentiful seabirds marine life dolphins humpbacks southern right whales penguins conservation sea life dolphins joyous creatures abalone crayfish
Water	clear beautiful water clean water open coast pure ocean royal blue water
Weather	changeable fierce big blow back off the bluffs big ocean swell
Recreation, human history, stewardship, family, exploration	history 'our love of the place' connection to family whakapapa memories life-style community kaitiakitanga hunt and gather be part of it back to nature no coverage hunting fishing sightseeing absence of people beautiful place for recreation settlement brewery fossick swim wander the hills fascinates explore the caves and overhangs difficult to get to fine balance unspoilt respect
Feelings, sounds, emotions, spiritual	reconnection pounding heart sacred enjoyment untouched privilege freedom dead quiet still silent gorgeous beauty everything touch smell taste remote privacy wonderful sharing enjoyment isolation aura feel like you are part of it

Also relevant to the present study is the following analysis of interview comments (quoted in full from Edge Hill 2020:23-25):

In addition to the words and phrases [in Table 3.4], contributors expressed value through the experience of being connected to or part of nature:

"When there is a roll it really means it – you get that big ocean swell especially along the Caswell Bluffs you get the big blow back off the bluffs. You can be right in the thick of it rolling around, doing the haka, trying to land pots and you don't actually feel like you are in danger – you feel like you are part of it".

"Well – look I enjoy sailing because it takes us back to an environment that is really completely unchanged. The conditions that you face at sea today are exactly the same as what you would have faced 100s of years ago. And that is appealing to me – it is back to nature."

"When you are over there 'you touch it' and everyone else that goes there says the same thing. The things you see you when you dive! But, it can be heaven or hell – I've been over there in winter and it can be 30 degrees and in summer it can be really dangerous."

"The more I got to see the more I loved it. Especially the islands and the water. I love to fossick around. I could swim around the islands I swam all the way down Acheron Passage one day between Breaksea and Wet Jacket snorkelling along the shoreline...You still see a lot when you are on the water but when you are in the water you see so much more.....I'll go and check out all sorts of things... wander up the hills for a bit of a look. It fascinates me."

Value was also expressed in terms of the area's inaccessibility, remoteness, and the fact that getting there is not an every-day occurrence for most people.

"Growing up in Te Anau, Fiordland was always over the other side – it was very special, and you didn't get to it very often."

"Going into the heart of coastal Fiordland was not a 'family thing'. The opportunities or experience of the area through your family/parents is the minority of people's experience – as charter operators, fishing, DOC staff etc. – everyone else is quite disconnected from this experience and the area."

"The beauty of the area is absolutely breath-taking. The fact that it is so remote and so difficult to get to add to the reward when you get there. You can see a very scenic spot - some fantastic country driving to Milford - but I don't get the same kick when I am in that environment as when I can get there on my yacht."

Some contributors reflected on the restorative properties of time spent in the fiords and coastal Fiordland including comments like: *"I can live for years on a week in Fiordland."*

Others expressed what they value most in terms of risk, including over-crowding, non-sustainable use (eg. of fisheries, safe anchorages, the wilderness experience), too much radio coverage and traffic,

marine rubbish and spills, abandoned vessels, rats or mice getting onto rodent-free islands, and concern that international visitors may value the area less and be less inclined to take care of it.

“We go into Charles and it’s dead quiet, just still, silent, no planes, no kayaks....no one there – and it’s gorgeous. You go into the Irene...around to Golden Arm – just no one there....and we come back from a trip and into Milford and it’s [makes plane noises] ...kayaks, boats, people ripping around at 100 mph to outdo each other or whatever they are doing..... we just can’t wait to unload and get out of there.”

“Milford is the opposite side of the coin – you have these glorious mountains and it’s stupendously beautiful and then all of a sudden you are surrounded by cruise ships and tourist boats and you think “what are you doing here?” – I want this to myself and it spoils the experience....”

“In Dusky, you can feel as though you are the only person there. We don’t want the masses down there, but we do want to be able to introduce people to that experience, so it is a very fine balance. I think the fact that it is isolated is what makes it attractive.”

Two user studies of the Fiordland (Te Moana o Atawhenua) Marine Area (FMA) were undertaken for the Fiordland Marine Guardians (FMG) and agencies associated with FMA management. A user monitor for the FMA to measure users’ activities and perceptions was designed and implemented in 2007 and 2010 (Booth et al. 2007, Booth and Espiner 2010).

A two-phase approach was developed, comprising: (1) a questionnaire survey of commercial and recreational FMA users, and (2) key informant interviews. The user survey was developed as the monitoring tool and to establish baseline data, whereas the interview programme was an interpretive method used to supplement and validate the survey data. All survey data were analysed by user sub-group: commercial fishers, recreational fishers/boaties, tourism operators/employees, commercial boat passengers (termed ‘visitors’ in this report) and ‘other’ users, a category which includes researchers, and non-commercial divers and kayakers. Commercial boat passengers were excluded from the 2010 study because the FMG/agencies felt that their views would have changed little since 2007 and their responses was not the primary information required.

The values held for the FMA remained constant between 2007 and 2010, with ‘beautiful scenery and views’ rated as its most important value. Other values that were rated as very important were (Booth and Espiner 2010:22):

- Presence of unique wildlife.
- A wide variety of marine species.
- Absence of marine pests and weeds.
- High water quality.
- Remote wilderness places.
- Peace and quiet.

Dominant motivations for visiting Fiordland were ‘to experience the special character of Fiordland’, ‘to experience nature’, and ‘to view scenery’. The following motivations rated highly (Booth and Espiner 2010: 26):

- To experience the special character of Fiordland.
- To experience nature.
- To view scenery.
- To work.
- To see a new place.
- To see wildlife.
- To catch fish/shellfish.
- To experience wilderness.
- To experience a quiet place.
- To pursue recreational activities.

Figure 3.3 presents the results of opinions gathered on how the 'quality of the Fiordland Marine Area had changed over the last five years'.

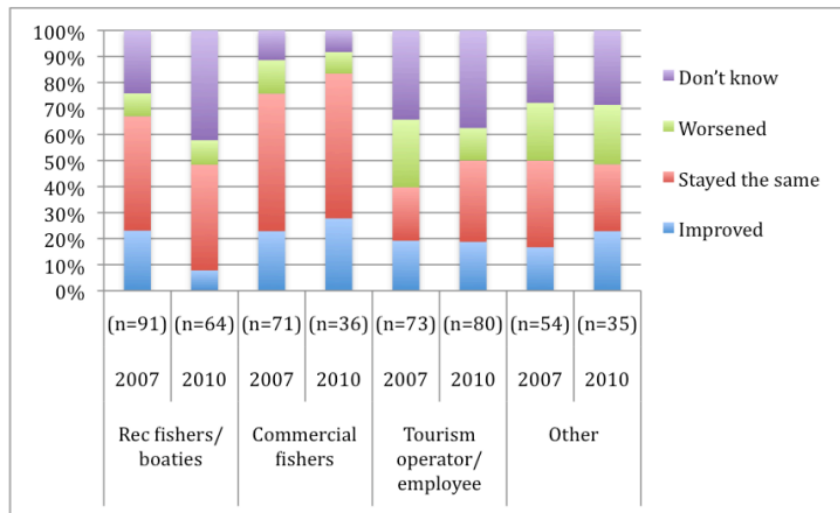


Figure 3.3: FMA users' assessment of trends in quality of the FMA over the past 5 years (Booth and Espiner 2010:29)

Two visitor studies in Milford Sound/Piopirotahi were part of the Fiordland Integrated Coastal Management Project (FICOMP) which aimed to develop a holistic approach to managing human activity in Fiordland.

A benchmark study of visitor use was undertaken in 2008 (Lindis Consulting 2008) to identify what users value about Milford Sound/Piopirotahi, in order to establish baseline data for an ongoing monitoring programme. Visitors and people who worked there were surveyed about their values, expectations and experiences of Milford Sound/Piopirotahi in February and April 2008 (n=1123). The study's geographic focus was the village, the fiord and the land immediately adjacent to the fiord.

Visitors' motivations for going to Milford Sound/Piopirotahi are summarised in Figure 3.4. Workers responses to a question about what they valued the most about Milford Sound/Piopirotahi are presented in Figure 3.5. The importance of natural values is clear from both sets of responses, with visitors also strongly identifying personal experience/activity motives.

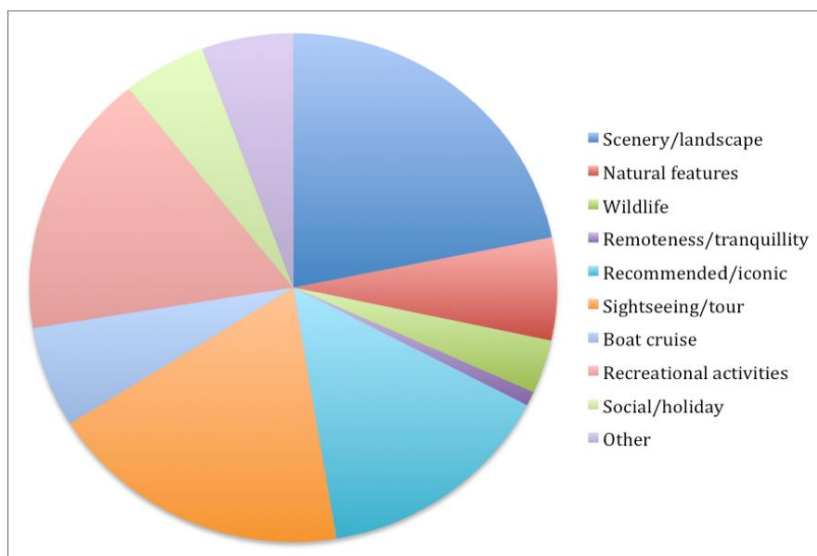


Figure 3.4: Main reasons for visit (visitors' responses, n=1368) (Lindis Consulting 2008:16)

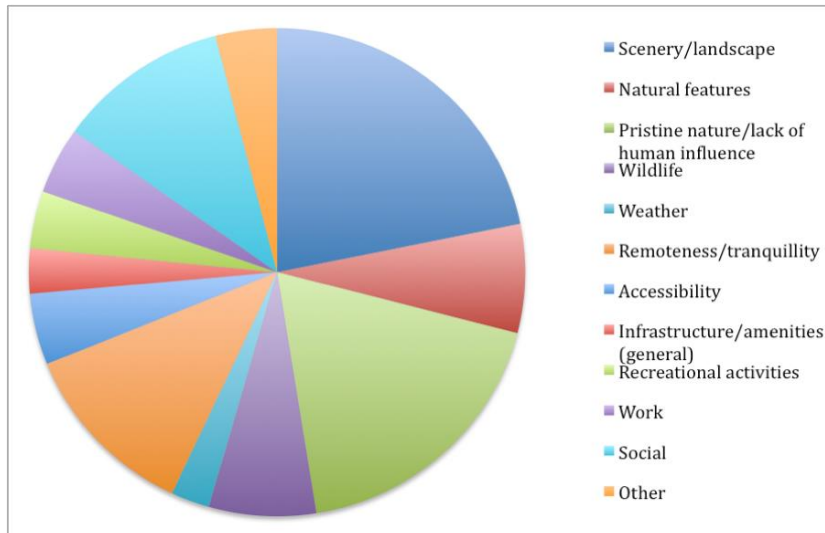


Figure 3.5: Workers' values (n=472 responses) (Lindis Consulting 2008:18)

Three dimensions of the visitor experience stand out as exceeding expectations: the scenery/landscape, the weather, and aspects of Milford Sound/Piopirotahi tourism including the quality of the tourism operations. In combination, nature-based dimensions accounted for 43% of all comments from visitors about things that were better than they had expected.

For the 173 people who thought some aspect of their experience was worse than expected, 66% of their responses were associated with human factors (eg. village infrastructure/amenities).

The first implementation of the Milford Sound/Piopirotahi user monitoring programme (Booth 2010) measured the values held by users for Milford Sound/Piopirotahi and their perceptions of attributes which may add to, or detract from, their experience. The user monitor applied a carrying capacity approach. It collected data for specified indicators relating to the visitor experience, and then matched responses against acceptability thresholds that had been pre-determined by the FICOMP stakeholder group. In this way, conditions of the visitor experience that exceeded agreed levels of acceptability were identified.

Approximately 600 visitors and 230 workers were surveyed in February and April 2010 – 388 of these were boat cruise passengers (of whom 204 were surveyed on the return leg of their cruise, the others *intended* to go on a cruise later in their visit). Findings relate to perceptions of the village, as well as the fiord and land immediately adjacent to it.

Viewing the natural scenery and landscape is the most highly valued opportunity amongst visitors to Milford Sound/Piopirotahi. This was true for all types of user (except for large cruise liner passengers, who rated taking a cruise on the fiord slightly higher). Boat cruise passengers expressed the most important values of Milford Sound/Piopirotahi (in order of importance) as: natural scenery, cruise, peace and quiet, wildlife.

Both New Zealand and international visitors rated their experience of the natural scenery highly. The mean score was 6.3 (on a 7-point scale where 7 was 'could not have been better') for both New Zealand visitors and international visitors.

Responses relating to the effects upon their experience from certain attributes (eg. number of visitors, amount of development) are not reported here as results will be strongly influenced by perceptions of the village. However, the effect of 'local tour boats' upon the visitor's experience exceeded acceptability thresholds (which were defined by the percentage of responses where the attribute had a negative effect upon their experience):

- The 25% acceptability threshold was exceeded for 'local tour boats' by responses received from commercial kayakers/divers (33% said they had a negative effect upon their experience).
- The 15% acceptability threshold was exceeded for 'local tour boats' by private boaties (24%) and hunters/ climbers/trampers (16%). Also exceeding this threshold were: New Zealand visitors (17%), repeat visitors (17%) and April visitors (18%).

Users were asked to name one change to make Milford Sound/Piopiotaahi better and, if they could keep one thing exactly the same forever, what would that be. Written comments reinforce responses to other questions and identify users' future desires for Milford Sound/Piopiotaahi (Booth 2010:46):

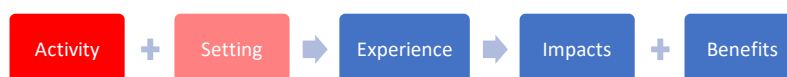
- The high value placed on natural scenery and landscapes.
- Desire for things to stay the same – most people do not want to see Milford Sound/Piopiotaahi change. Comments related to both the natural and built environment. In terms of the built environment, they especially focused on keeping a check on commercial development.
- Prominence of concerns about aircraft – people wanted fewer aircraft, less noise.
- Some interest in limiting or managing numbers of visitors and cruise boats.
- Desire for more walking tracks.
- Some visitors' desire for more information and eateries.
- Workers' concerns with traffic and infrastructure (e.g. rubbish system, accommodation, village facilities).
- Comments about the weather and sandflies were common.

A University of Waikato master's thesis on (large vessel) **cruise tourism in Fiordland** (James 2003) contained the following relevant information:

- Part of what makes Fiordland an area of national significance and a popular tourist destination is the unique geology, climate and natural environment that provides the remote wilderness atmosphere.
- The size of vessels and numbers of people onboard has the potential to detract from any feelings of wilderness that other users of Fiordland might experience; however, the relatively immense scale and topography of the fiords reduces visual impact of the cruise liners.
- Within Fiordland, a more specific planning classification for cruise tourism may be derived through using distance-based categories (ship to shore) and human influences (ranging from easily accessible to remote). This was contrasted with Orams (1999) Spectrum of Marine Recreation Opportunity (SMRO).
- Noise transmitted on outside decks of the ship travels readily over water and can interfere with the wilderness and remoteness values of the fiords.

Lusseau's (2005) examination of the **sustainability of the scenic cruise industry in Doubtful Sound/Patea** reported increases in scenic cruise activity and focused on effects upon wildlife (bottlenose dolphins) rather than the visitor experience.

4 RECREATION AND TOURISM ACTIVITY WITHIN THE FIORDS



This section provides an overview of recreation and tourism activity within the fiords. As outlined in section 3.2, the diagram above represents the recreation and tourism opportunity. While the primary purpose of this section is to describe recreation and tourism activity, it also introduces the fiords as recreation/tourism settings (which is expanded upon in section 5).

This section outlines:

- Changes in recreation and tourism use patterns resulting from the Covid-19 pandemic.
- Opinions about use patterns post-Covid.
- Long-term use patterns across the fiords.
- Types of recreation and tourism activity.
- Differences in recreation and tourism use between fiord complexes.

The purpose is to provide context for subsequent discussion within this report and to identify factors driving changes in use patterns. Information in this section is drawn from interviews and Robertson and Graham (2022). Material quoted directly from interviewees is indicated in italics and double quote marks.

4.1 SUMMARY

- Activity levels have dramatically changed from pre-Covid times to the current Covid period, as a result of travel restrictions internationally and domestically.
- Covid related changes primarily relate to the loss of international visitors significantly reducing tourism activity at Milford Sound/Piopiotaahi and the increase of New Zealanders seeking domestic destinations driving a large increase in charter trips in Tamatea/Dusky Sound and the Southern fiords. The purchase of private recreational boats increased significantly during the Covid period.
- Opinions vary about likely visitor patterns once New Zealand's border re-opens to international visitors.
- Irrespective of Covid-related changes in use, recreation and tourism activity in the fiords has been increasing over time. Activity changes include the use of larger vessels and a greater diversity of boat types, extended periods of use, wider geographic dispersion of boats, and increased use of aircraft access to fly boat passengers in and out.
- Use is constrained by Fiordland's remoteness (difficulty of access).
- A wide range of types of vessels facilitate recreation and tourism within Fiordland waters: large cruise ships (liners), tourism cruise boats (day and overnight cruises), charter boats, syndicate boats, private recreational boats, small expedition cruise vessels, kayaks (operating off a cruise vessel or from land), dive boats, and tenders (off bigger vessels). See Figure 4.1.
- Activity levels and types of use varies between the five fiord complexes. Covid-related changes have altered the relative activity levels between the fiords.

4.2 COVID RELATED CHANGES IN USE

Interviewees described fiord recreation and tourism activity by differentiating between two time periods: pre-Covid and during Covid. At the time that study interviews were conducted, the New Zealand border was closed to international visitors and Auckland was in lockdown.

The Covid pandemic dramatically changed recreation and tourism patterns in Fiordland from March 2020 when movement across New Zealand's border was heavily restricted: *"Covid did two things – it stopped people coming in, but it also stopped people going out [of New Zealand]. And the tourism spend that would otherwise be spent outside New Zealand, a portion of that was applied to New Zealand."*

The drop in international visitors led to a **dramatic decrease in mainstream tourism cruises**, most severely impacted was Milford Sound/Piopiotaahi given its reliance on international visitors. Some Milford Sound/Piopiotaahi based tourism operators re-located vessels south to Tamatea/Dusky Sound and the Southern fiords. Large cruise ship visits ceased from March 2020 when the Government banned them from entering New Zealand waters. Cruises, dive and kayak trips continued to operate in Milford Sound/Piopiotaahi albeit at dramatically reduced levels.

In contrast, the domestic market "discovered" Fiordland and **charter activity increased significantly** to satisfy demand from New Zealanders for multi-night overnight cruises. The nature of these trips is described in section 4.5.2.

Use of the fiords by **private recreational boats increased**, with recreational boat purchases accelerating during the Covid period. See section 4.5.3 for a description of changes in private recreational boats.

Covid led to a **'shake up' within the industry** – quite a few changes occurred in business ownership (including permits for commercial surface water activity).



Figure 4.1: Photos showing some of the types of boats used in the fiords

Photo credits (clockwise from top right): Kerri-Anne Edge Hill, Jerry Excell, Kay Booth, Ministry of Primary Industries, Ministry of Primary Industries.

4.3 PREDICTIONS ABOUT USE PATTERNS POST-COVID

Interviewees were asked their opinions about use patterns once New Zealand’s borders re-open and New Zealanders are free to travel domestically and internationally. A wide range of views were expressed, summarised as follows:

Tourism cruise market

- Milford Sound/Piopiotahi will take years to ‘recover’, but it will. Although the days of mass tourism (large coaches/lunch cruises) are likely over.

- Mainstream tourism operators talked about the increase in the ‘conscious’ tourist, environmental sustainability and regenerative tourism – that these long-term trends will drive post-Covid tourism trends (lower volume, higher yield products): *“not chasing down that buffet lunch, high volume, coming down to eat your lunch and then go again [market]. Actually having people who really want to engage with the geography of the place and everything it’s got.”* This will mean tourists who stay longer, perhaps working remotely as they travel. The opportunity this presents is to reset the product for higher yield/spend visitor – a couple of operators called this market ‘high-end exclusive’.
- At Milford Sound/Piopiotaahi, this may translate to longer cruises (say 2 hours rather than 1.5 hours), stronger engagement with guests, more education, and guests more engaged. This might lead to large commercial boats (300-400 passengers) becoming redundant as passengers seek more personal and exclusive trips on smaller boats.
- Tourism operators expect demand to return for 1-night overnight trips. If this eventuates, it is likely that operators will re-direct vessels back to overnight cruises in Milford Sound/Piopiotaahi and Doubtful Sound/Patea, maintaining week long trips in Dusky and the Southern Fiords in the winter months.

Charter boat market

- Given New Zealanders have now *“discovered Dusky”* and *“Dusky is now on the map”*, some interviewees expect this market to maintain demand. Others felt that demand would drop off as New Zealanders return to overseas destinations.
- Linked to this were views that the Southern fiords and Tamatea/Dusky Sound use would decrease or remain the same (depending on views about demand for charters) and because mainstream tourism vessels will shift back to Milford Sound/Piopiotaahi and Doubtful Sound/Patea.

Private recreational boats

- Many people believed that recreational boat use will be maintained as people use their new boats. Some predict ongoing increases in recreational boats in Fiordland.
- A few interviewees commented on large yachts and motor cruisers. They felt that this market would continue to increase. One influencing factor was articles in international yachting and cruising magazines that say Fiordland is a place you’ve really got to go to – there’s quite long lag times with those sort of things.

4.4 LONG-TERM TRENDS IN USE (NOT COVID RELATED)

Separate to Covid-related effects, interviewees described trends in recreation and tourism activity in the fiords over the long term. In summary, this included:

- Use becoming more diverse – both in terms of types of vessels and users.
- Busy periods extended – no longer just busy in the summer months.
- Vessel size is increasing – boats can travel further and stay in remote fiords for longer.
- Increase in numbers of super yachts and motor cruisers (50-80ft) coming into fiords; often fly in their friends/family.
- Enhanced technology on boats (improved safety) and in communications.
- Demand for shorter trips (passengers are time poor) driving helicopter access to boats – vessels remain in remote fiords for longer (move the guests not the boat).
- Two interviewees made the point that in the 1960s there was many more vessels in Fiordland waters than now – c.300 vessels working in the crayfishing industry. Their view was that the numbers of boats has dropped over the longer term.
- Increased use of aircraft for access – *“The coastal trip, as you can imagine, gets pretty rough sometimes and they didn’t like it and this is the main reason [people fly in/out] and it saves a lot of time for some of the other boats – some of them are quite slow – it takes them ages to go down the coast and that is part of the reason they use helicopters.”*

- Fewer hunters and fishers – more people “*who just want to go and look ... just to say they have been there and just want to see it.*”
- Fuel remains a limiting factor – the need to refuel, in part, drives boat movements.

One interviewee described use of the fiords as follows:

- Fiordland’s wilderness value has remained high because it is protected by its remoteness (difficulty of access) – you can’t walk there (can walk to Dusky, but you can’t explore the fiords by foot) and few people have suitable boats. The area’s physical and climatic characteristics make it hard to get to.
- Use of the fiords has been controlled to date because the barrier to entry is high – you either need to own your own boat and have good sea skills, or go with a tourism/charter operator. Increasingly, this involves a flight which is expensive. In effect, the fiords are ‘means tested’ – you need money to go there. This is a barrier to entry and it has kept use levels low.
- Fundamentally this will not change (unless more road access is put in, deemed unlikely).
- While terrestrial Wilderness Areas protect the recreational experience (foot access only), the fiords are different because you need a boat or aircraft (motorised) for access.

4.5 DIFFERENT TYPES OF USERS

Recreation and tourism users of the fiords are best described through the type of boat that they use. These include large cruise ships (liners), mainstream tourism cruise boats, charter boats, syndicate boats, private recreational boats, small expedition cruise vessels, kayaks (operating off a cruise vessel or from land), dive boats, and tenders (off bigger vessels). The primary types of users discussed by interviewees are described in this section.

4.5.1 TOURISM CRUISE BOATS

- Cruise boats have been offering on-water fiord experiences on Milford Sound/Piopiotaahi for many decades. Cruises are offered as day trips (several hours) and one-night overnight trips on Milford Sound/Piopiotaahi and Doubtful Sound/Patea.
- These trips provide the easiest way for visitors to experience the fiords from the water; they are how most people experience the fiords.
- To cruise on Doubtful Sound/Patea, passengers first journey across Lake Manapouri by boat and over Wilmot Pass by coach to Deep Cove (the boat access point for the fiord).
- Prior to Covid, some of the tourism cruise boats (and charter boats) operated on a seasonal rotation. During the summer months, they offered one-night overnight trips on Milford Sound/Piopiotaahi and Doubtful Sound/Patea. In the winter months (typically April-November) they shifted to multi-day cruises in Tamatea/Dusky Sound and the Southern fiords. During Covid, the shift south became (temporarily) permanent.

4.5.2 CHARTER BOATS

- Charter boats began operating in Fiordland in the mid 1990s with an initial focus on fishing trips (passengers taking home chilly bins full of crayfish and blue cod). The high fishing pressure led to changes in the management of the fisheries and an effort to refocus charter trips on the Fiordland experience. The charter industry evolved to become more diverse – attracting more families and couples. Charter passengers are mostly New Zealanders.
- Charter boat trips can be separated into two main types: fishing (sometimes referred to as ‘fishing, shooting, hunting’ trips) and eco or adventure charters (nature/history/adventure activity trips).
- Interviewees referred to an increase in charter vessels and that a small number of new boats had been purchased/built. Boats from the North Island had visited Fiordland for the first time during Covid.
- Interviewees talked about illegal charter vessels operating in the fiords.

- The growth in demand from New Zealanders for week-long cruises is associated with a product that can be described as follows: *“We take our passengers away one week at a time. We always leave from Doubtful Sound and, depending on weather conditions, we’ll visit all the fiords right down to Preservation Inlet. Which takes seven days to do that. And then they’ll fly out and another lot will fly in. And we’ll do the same trip in reverse. And the focus of the whole, it’s not just carting them around in the boat, but getting off and doing shore excursions.”*
- It is common to use a helicopter flight to reach or depart from vessels (fly in/out) using helipads on boats or landing sites – in Tamatea/Dusky (Supper Cove in particular) and the Southern fiords.
- Use increased particularly in Tamatea/Dusky Sound, but anywhere south of Doubtful Sound/Patea has experienced a large increase in boats.
- The Auckland 2021 lockdown had a big effect (loss of business) and showed that the charter clientele was dominated by Aucklanders.
- Increased advertising to the domestic market (alongside exposure to Fiordland through reality television shows) has lifted the awareness about Fiordland and for these trips.
- One interviewee commented that multi-day cruises in New Zealand are only available in Fiordland or around Rakiura, and very recently, the Bay of Islands.

4.5.3 PRIVATE RECREATIONAL BOATS

- Interviewees described a large increase in numbers of private recreational boats during Covid. For example, more than 30 boat trailers were reported at Milford Sound/Piopiotahi boat ramp in a single day.
- This increase in use may be driven by supply (redistribution of overseas travel funds to purchase recreational ‘toys’) and demand (resulting from a growing awareness of Fiordland opportunities from increased advertising and more people recreating close to home during Covid).
- Recreational boats are changing. They are bigger with more reliable and powerful motors, have better navigational instruments and radio communications (better weather forecasting), and they are able to carry more fuel. Boats that were typically 5-6m in length are now more often 8-10m.
- As a result, recreational boats now travel further and stay away longer. They are now more suited to travel down the coast and can access fiords that previously were too risky a destination. They can travel quickly and are now visiting Tamatea/Dusky Sound and George Sound, for example, sometimes travelling in convoy.
- The result is that other boats encounter recreational boats more often and in more places.
- One charter operator commented that with more Kiwis boating in the fiords, the standard of behaviour on boats will detrimentally alter (they had previously commented on *“yahoing”* and noisy drinking in evenings).

4.5.4 OTHER TYPES OF BOAT

- **Significant increase in large private yachts and motor cruisers over past 10 years:** 50-80 foot (15-25 metres) international yachts and motor cruisers are now spending more time in Fiordland, both New Zealanders and international visitors. Sometimes they fly family and friends to/from their boat while in Fiordland waters.
- **Syndicate boats:** Owned by a group of people who share boat ownership and use, syndicate boats do not require a consent to operate in the fiords (they are not deemed commercial operations)¹³. One tourism operator believed that syndicates resulted in some inexperienced people operating boats in Fiordland and that they represented a high risk for accidents.
- **Small expedition cruise vessels:** These vessels often spend a few months in Fiordland and the remainder overseas or in locations such as the Bay of Islands or Marlborough Sounds.

¹³ The Regional Coastal Plan for Southland definition of Commercial Surface Water Activities excludes activity for which a reasonable charge is made towards recovery of reasonable expenses incurred in undertaking the activity.

4.6 FIORD COMPLEXES

Recreation and tourism activity varies geographically, with fiords attracting different levels and types of activity. Changing use patterns as a result of Covid have altered relative levels of activity between fiords.

4.6.1 MILFORD SOUND/PIOPIOTAHU

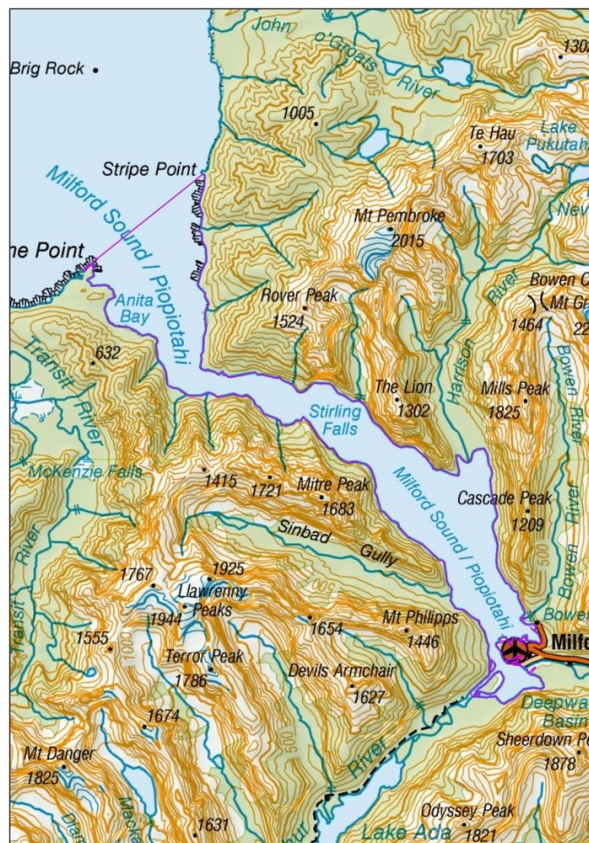


Figure 4.2: Map of Milford Sound/Piopiotahi

Milford Sound/Piopiotahi (Figure 4.2) is different from all other fiords – visitors can drive to the fiord with their own vehicle; they do not require the use of a commercial operator or their own boat to get there. State Highway 94, known as the *Milford Road Journey*, is the only public road access to any of the fiords. Visitors can also fly to the Milford aerodrome in Fiordland National Park (and take scenic flights from there). Milford Sound/Piopiotahi visitors can experience the fiord on-water via a cruise, kayak or dive trip, or by launching their own boat.

Visitor infrastructure facilitates cruising on the fiord, diving and kayaking activities, and private recreational boat use. Freshwater Basin is the main terminal for cruise boat tourism, while sea kayaking, ecotourism ventures and recreational boats operate out of Deepwater Basin via the boat ramp and wharves. The village provides visitor services such as a hotel, café, bar, toilet facilities and visitor vehicle parking.

Visitor attractions include the iconic Mitre Peak, 162-metre Lady Bowen Falls, and Milford Sound Discovery Centre and Underwater Observatory (accessible by boat).

The Milford Track ends with a short boat ride, giving approx. 7,000 trampers¹⁴ each year a brief on-water experience of the fiord.

Milford Sound/Piopiotahi is a national tourism hot spot, predominantly for day visitors. It is well established as one of New Zealand's most popular visitor attractions and iconic destinations in the world.

Prior to Covid (March 2020), the visitor patterns for Milford Sound/Piopiotahi can be described as follows (data drawn from Visitor Solutions Limited and Fresh Info Limited 2021):

- 870,000 visitors went to Milford Sound/Piopiotahi in the 2019 calendar year. The number of people visiting Milford Sound has grown by 69% over the last 13 years, or 4.1% per annum. Almost all of this growth has occurred in the last five years.
- Visitors to Milford Sound were predominantly from overseas (83%). According to the International Visitor Survey, more international visitors to New Zealand go to Milford Sound/Piopiotahi (and other locations in Fiordland) than to any other attraction covered by the survey. This demonstrates Fiordland and Milford's importance as a pre-eminent New Zealand visitor icon.
- The Milford Sound/Piopiotahi experience is predominantly centred around boat cruises and first time/one-off visitors. Around 95% of visitors to Milford Sound/Piopiotahi take a cruise.

¹⁴ <https://www.doc.govt.nz/about-us/our-role/managing-conservation/recreation-management/great-walks-management/great-walks-visitor-numbers/> (accessed 30.1.22)

- Most visitors are at Milford Sound/Piopiotaahi in the middle of the day (approx. 11am-3pm) and use is highly seasonal, with 62% visiting in November-March and 27% arriving in the two busiest months (January and February).
- There was an average of 50 boat cruise departures per day in the 2018/19 summer season (October-April), compared with 28 per day in the winter season (May-September 2019). Average boat capacity has been estimated as between 23% (August 2019) and 52% (February 2019), with an average across the year of 40% (noting that peak months/times may experience 100% utilisation).
- Because of the high volume of boat traffic in Milford Sound/Piopiotaahi, the boats work on a timetable and travel in a one-way circuit around the fiord, in order to limit boat interactions.
- Large cruise ships visit Milford Sound/Piopiotaahi, with ships typically entering the fiord early in the morning or late afternoon/early evening, avoiding the middle of day high-use period. There were 222,000 international cruise ship passengers on 140 large cruise ship visits in the year ended June 2019.

Most (but not all) interviewees, including the Milford-based tourism operators, believed that Milford Sound/Piopiotaahi had issues with high visitor volume around midday pre-Covid (some said it was “*out of control*”). Milford Sound/Piopiotaahi operators said it was busy only for a limited period of the year (and the middle of the day) – the rest of the time it was not. They felt that better management of transport/boats and transport technological improvements could address the volume issue. One Milford Sound/Piopiotaahi operator felt it had “*developed an unfair reputation of being congested*”.

Milford Sound/Piopiotaahi is the only fiord to reduce levels of activity owing to effects from the Covid pandemic, notably the closure of New Zealand’s border to international visitors. However, private boat access from Deepwater Basin has seen high use levels during Covid times: “*Last summer [2020/21], you could hardly get a car park in Milford with all the boat trailers that were there. That’s a real indicator ... they’re not just going out for a day because the boats are huge. They’re going down the coast and staying.*”

A dominant theme in interviews was that Milford Sound/Piopiotaahi had a level of use that other fiords should avoid. Many interviewees described Milford Sound/Piopiotaahi as ‘sacrificial’ with the intent that Milford Sound/Piopiotaahi be ‘sacrificed’ (concentrate use there) in order to protect the other fiords: “*At the end of the day people will go where they can get to ... Milford and probably Doubtful ... are a sacrificial lamb for the rest of Fiordland ... you have to have these places, and manage them, and that saves those other places ... and that happens the world over.*”

Fiordland National Park (FNP) adjoins Milford Sound/Piopiotaahi, as it does all of the fiords. Along the northern boundary of Milford Sound/Piopiotaahi is the Pembroke Wilderness Area, and the Piopiotaahi Marine Reserve is in Harrisons Cove.

A fishing fleet operates out of Deepwater Basin in Milford Sound/Piopiotaahi. Fishing boats from Bluff, Riverton and elsewhere, also operate in these waters¹⁵. Certain harvested stocks are depleted. Easy access has been available to these fiords for many years and as a result it (along with Doubtful Sound/Patea) is the most fished of the fiords¹⁶.

4.6.2 NORTHERN FIORDS

The Northern fiords (Figure 4.3) have traditionally received very low levels of use. This was explained by interviewees to be a result of difficulty of access (requires open sea travel which is uncomfortable for clients and challenging for recreational boats), limited anchorages, less scope for cruising (cf. fiords further south) and fewer opportunities to get off the boat and do walks:

- “*You spend a lot of time on the open sea and there’s only really a couple of fiords that have things to see and do inside them. Long story short, the passages on the open sea between the fiords kills it from a customer’s perspective. Whereas we can do a 6-nights 7-day trip down on the [southern fiords] with 3 hours between Doubtful Sound and Breaksea Sound, then another 3 hours between*

¹⁵ Regional Coastal Plan for Southland 2013

¹⁶ Fiordland Marine Conservation Strategy 2003

Dusky Sound and Chalky/Preservation. The rest of your holiday you're inside the fiords which is not exposed to sea swell."

- "If you were stuck up at Bligh, you could do the whole thing in 45 minutes."



Figure 4.3: Map of the Northern fiords

- *“A lot of recreational boaties won’t go south of Poison Bay because they realise they are getting into tiger country – they are happy to go 10 miles down the coast, but it’s too exposed on the coast ... no coastguard is going to come and pull you out of trouble – it’s that exposure and the sea conditions that stops people – unless it’s a good day, you are in seasick country.”*
- *“In the northern fiords you spend a lot more time on the coast – it’s easy to jump in between. And going hunting and fishing is the main activities – there is no walks, no history sites ... there is not much protection for kayaking or exploring.”*

Use of these fiords includes:

- Some charter operators who cruise north from Doubtful Sound/Patea.
- Private recreational boats coming from Milford Sound/Piopiota and Doubtful Sound/Patea.
- Groups of the *“really big boats that come in for a week”* and cruise right through the fiords including the Northern fiords.
- Hunters dropped off (by aircraft) during the roar.
- *“The odd tramper into George Sound Hut”* – experienced trampers can use the unmarked route from George Sound to Caswell Sound via the Overlander Ridge and Stillwater Valley¹⁷.
- Real Journeys (now RealNZ) used to take cruise trips there from Milford Sound/Piopiota.

One charter operator (based in Doubtful) described their use of these fiords:

- *“[I did] the odd charter north – I used to go up the Caswell Sound quite a bit ... if I was only doing a 2 or 3 day charter, I’d go to Caswell, Nancy, Charles.”*
- *“You hardly ever see anyone – the only one you would see is the odd fishing boat coming in to do something – Nancy Sound is quite busy with recreational boats because it’s only a hop, skip and a jump from Thompson Sound and they slowly creep up to Charles Sound – the odd bigger one goes there, but pretty much I never see anyone in Caswell Sound.”*

Use of the Northern fiords is increasing as some operators have sought out more remote fiords (displacement owing to increasing busyness of other fiords) and recreational boaties now able to access these fiords more safely with more seaworthy vessels. This increase in use was referred to by some interviewees as being mainly *“hunting, fishing, shooting trips”* and resulting from a *“search for remote experience taking more boats into the Northern fiords.”*

The six fiords and Poison Bay open directly to the sea, with few internal arms. Many offer poor shelter: eg. *“Bligh isn’t a particularly safe place to be from a weather perspective. It’s a fair weather place to hang out.”*

Sutherland Sound is unique in having an estuarine character as a result of the outer fiord being constricted by a sandspit. This restricts boat access.

Bligh Sound and Sutherland Sound are surrounded by the Glaisnock Wilderness Area (Fiordland National Park), along with the northern boundary of George Sound. Overlaid on these zones is a Wapiti Hunting Area which is popular for recreational hunting within the National Park, particularly during the roar (April).

4.6.3 DOUBTFUL SOUND/PATEA

Milford Sound/Piopiota and Doubtful/Patea are different from other fiords owing to easier access. Other than these two fiord complexes, access to the fiords is difficult (and expensive) – requiring aircraft access or a long boat trip (access points being Bluff, Riverton, Doubtful Sound/Patea, Milford Sound/Piopiota). Use levels reflect access difficulty.

Access to Doubtful Sound/Patea is via Wilmot Pass Road combined with boat access across Lake Manapouri. Seventy vehicles are permitted to use the Wilmot Pass Road (not including Meridian and RealNZ’s vehicles as they park in private facilities). These 70 vehicles are used by a mixture of recreational syndicates, commercial fishers and tourist companies.

Deep Cove is the only base for boats within the fiords outside Milford Sound/Piopiota. It houses infrastructure (wharves, pontoons and moorings) for boats to access the fiord complex and open seas

¹⁷ [Caswell Sound Hut: Fiordland National Park: Fiordland region \(doc.govt.nz\)](#)

beyond. Some cruise companies and charter operators use Deep Cove as their base. Visitors can enjoy a day or overnight (1 night) cruise from Deep Cove, as well as kayak trips and fishing. See Figure 4.4.



Figure 4.4: Map of Doubtful Sound/Patea

There is a campsite at Hall Arm which is managed by the Department of Conservation Te Papa Atawhai as a formed campsite and another existing informal campsite at Crooked Arm. A number of other informal campsites exist within Doubtful Sound/Patea at which freedom camping can occur but are not managed as formed campsites by the Department¹⁸.

Cruise ships use Te Awa-o-Tū/Thompson Sound, and restricted parts of Doubtful Sound/Patea.

Doubtful Sound/Patea is increasingly seen as offering an alternative experience to Milford Sound/Piopirotahi because of its accessibility and in response to perceptions of Milford Sound/Piopirotahi's busyness. A shift occurred when the 2020 floods cut off Milford and use switched to Doubtful Sound/Patea – this increased its use.

Hall Arm in Doubtful Sound/Patea is commercially promoted as the 'Sound of Silence'¹⁹.

Doubtful Sound/Patea contributes to the remote educational experience of school children who visit the Deep Cove Hostel. Annually, over 2,500 children stay at this facility for a few nights while on class camps. As part of that educational experience, and as a means of appreciating their natural heritage, the children take a launch trip on commercial tourist ships based at Deep Cove, as well as engaging in tramping, fishing and nature study activities in, on and around Deep Cove.

The steep-sided fiords support marine species unique in the world. Species composition is largely influenced by the patterns of water circulation that develop in the fiords. After heavy rain in Fiordland, a dark brackish layer of fresh water (from river inflows) floats over the seawater. This layer filters the sunlight and creates very dark but clean marine habitats at quite shallow depths. It is for this reason that black coral can be found at shallow depths²⁰. The ecological importance of the fiords is partially recognised by the marine reserves at The Gut/Te Awaatu Channel, near the entrance to Doubtful Sound/Patea²¹.

Freshwater is diverted into the CMA at Deep Cove via the tailrace from Lake Manapouri through the Manapouri power station.

Doubtful Sound/Patea and Te Awa-o-Tū/Thompson Sound are important thoroughfares for a range of ships wanting access to facilities or the road end at Deep Cove. They also provide access to anchorages or bases within the fiords themselves, for example, Blanket Bay and Deep Cove.

Doubtful Sound/Patea (to a lesser extent than Milford Sound/Piopirotahi) is also a fishing base for the open Fiordland waters. Easy access has been available to this fiord for many years and as a result it (along with Milford Sound/Piopirotahi) is the most fished of the fiords²². A significant fishing fleet operates out of Doubtful Sound/Patea. Fishing boats from Bluff, Riverton and elsewhere, also operate in these waters²³.

4.6.4 TAMATEA/DUSKY SOUND

Access is by air or boat; predominantly boats access Tamatea/Dusky Sound and Te Puaitaha/Breaksea Sound from Doubtful Sound/Patea. See Figure 4.5.

Tamatea/Dusky Sound has experienced the largest increase in use as a result of Covid of any fiord, associated with the growth in charter trips. Some interviewees believe Tamatea/Dusky Sound is now the busiest fiord (more boat movements) than Milford Sound/Piopirotahi and Doubtful Sound/Patea.

Use and users of the Tamatea/Dusky Sound complex may be summarised:

- The large increase in week-long cruises (Covid related) has attracted more New Zealanders to visit Fiordland, predominantly Tamatea/Dusky Sound.
- One operator runs a day-trip (fly in/out) but otherwise Tamatea/Dusky Sound is about multi-day (overnight) trips.
- Large cruise ships use restricted parts of Te Puaitaha/Breaksea Sound and Tamatea/Dusky Sound – the routes vary depending on the size of the ship.

¹⁸ Fiordland National Park Management Plan 2007

¹⁹ Fiordland National Park Management Plan 2007

²⁰ Fiordland National Park Management Plan 2007

²¹ Regional Coastal Plan for Southland 2013

²² Fiordland Marine Conservation Strategy 2003

²³ Regional Coastal Plan for Southland 2013

- Private recreational boats are now travelling to Tamatea/Dusky Sound from Doubtful Sound/Patea.
- *“Dusky and Breaksea – there are a lot more bigger boats turning up down there – these are the ones from further north, and you can’t drive round there pretty much in the winter months (that seems to be the busiest time, but I don’t spend a lot of time down there in the summer) ... in the winter it didn’t matter where you went during the day ... I think I counted 5 different boats in one day down there and that was not only with the boats that are there now but foreign boats (like from out of the area – like up north).”*

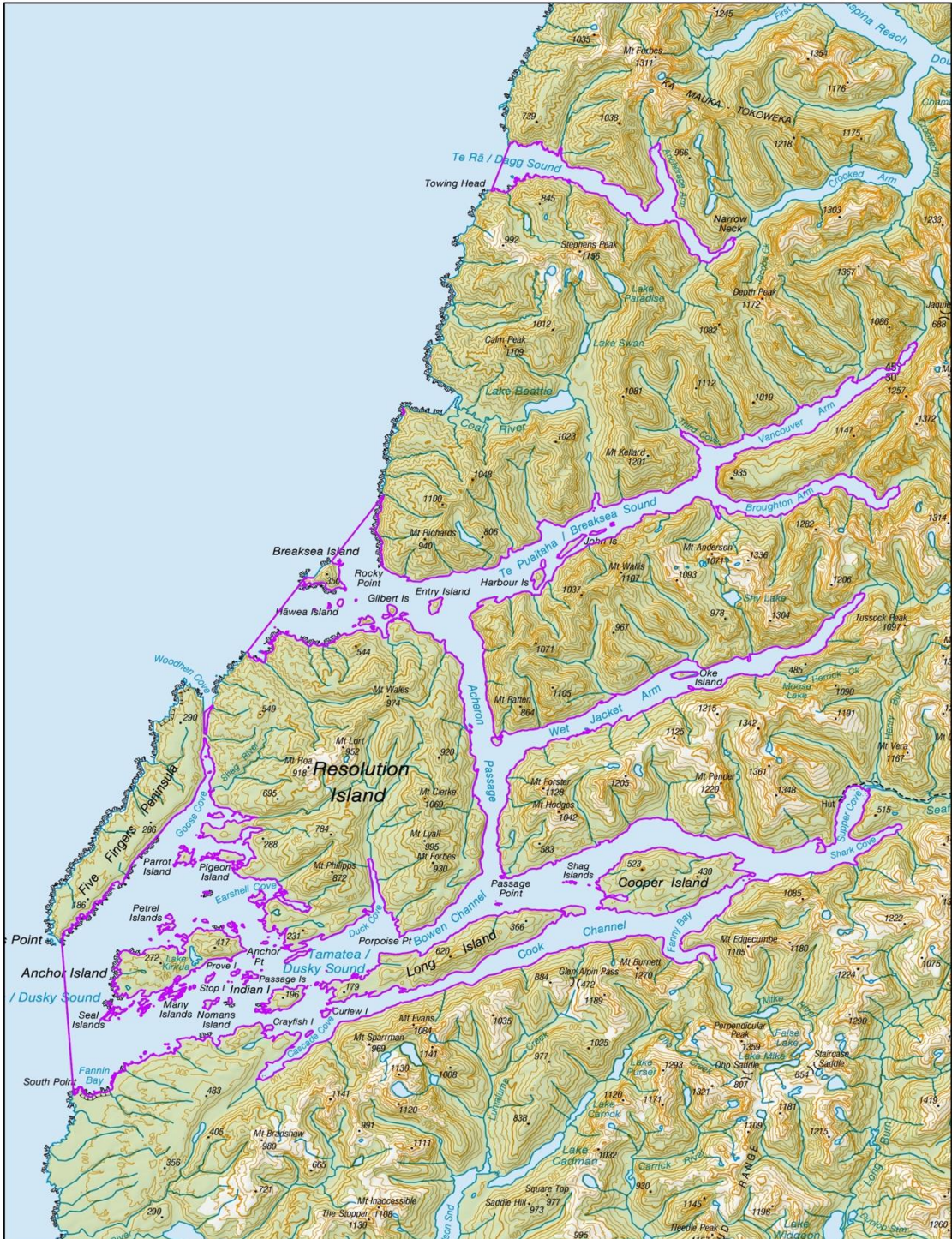


Figure 4.5: Map of Tamatea/Dusky Sound

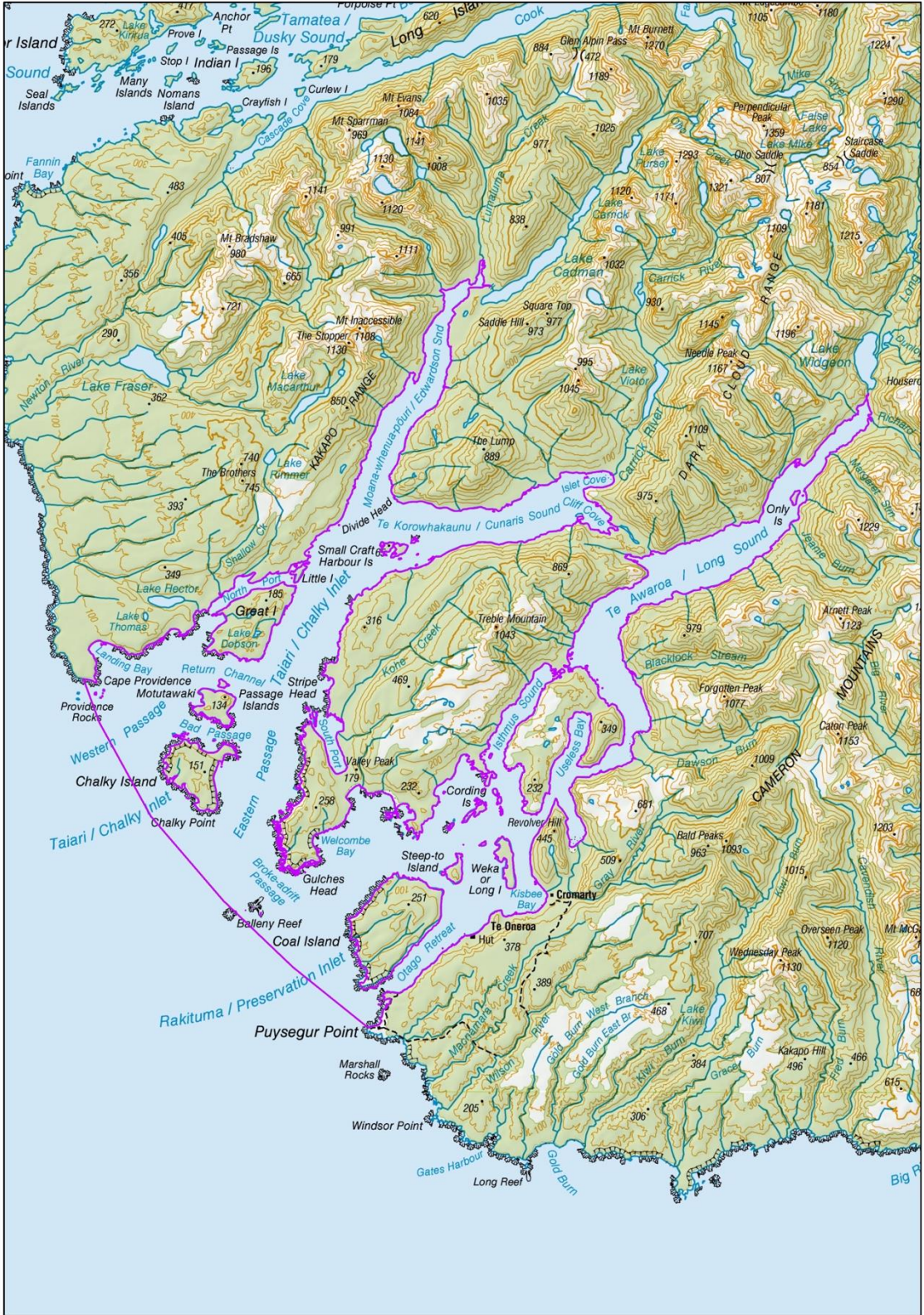


Figure 4.6: Map of the Southern fiords

Supper Cove is a high use aircraft landing site for trampers and, particularly, change-over flights for boat guests.

Luncheon Cove is used for moorings. There are locations in Tamatea/Dusky Sound where anchoring and mooring is not allowed due to high biological and natural values. A barge within Cascade Cove is used as a base for commercial surface water activities.

The Dusky Track (from Lake Hauroko to Lake Manapouri) offers a two-day optional detour to Supper Cove in Tamatea/Dusky Sound, offering views over the Fiordland landscape²⁴.

Together with the Southern fiords, Tamatea/Dusky Sound is rich with heritage and archaeological values with several important archaeological sites of Māori and European at or above mean high water mark. These include Pigeon Island, home to Richard Henry the international conservation pioneer, and Captain Cook journeys.

History was a theme of many tourism and charter operators' comments. Their clients (New Zealanders) were attracted by that, with Captain Cook being frequently mentioned: *"Dusky is on people's radars ... [there is] a lot of interest in history and that's the holy grail of colonisation by the pakeha in New Zealand – Captain Cook sailing into Dusky."*

4.6.5 SOUTHERN FIORDS

The Southern fiords (Figure 4.6) have traditionally received low use, largely as a result of their distance from ports (access difficulty). Boat access to Taiari/Chalky Inlet and Rakituma/Preservation Inlet is primarily from Doubtful Sound/Patea, but boats also come from Riverton and Bluff. Air access occurs.

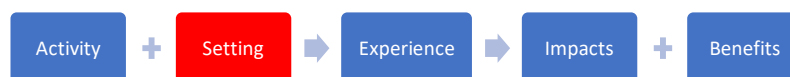
They have become more busy during the Covid period.

These fiords are rich with heritage and archaeological values. Rakituma/Preservation Inlet was the scene of early mining and timber milling activities. Several important archaeological sites of Māori and European origin exist at or above mean high water mark, especially in Rakituma/Preservation Inlet. Tourism cruises, charters and recreational boats access these sites by boat.^{25 26}

Their attractions were summed up as: *"a great combination of things for people – you have history, protected waters, it's great diving."*

The South West/Cameron Remote Zone in Fiordland National Park (which is managed as wilderness) adjoins the southern coastline of Tamatea/Dusky Sound and adjoins much of the coastline of the Southern fiords.

5 DESCRIPTION OF THE FIORDS



This section focuses on the **setting** attributes of the fiord complexes and describes the fiords in terms of their values to Ngāi Tahu and with respect to the commonalities and differences between fiords in terms of their recreation and tourism values. Information in this section is sourced from relevant documents, Robertson and Graham (2022), and from interviews.

5.1 SUMMARY

- For Ngāi Tahu ki Murihiku, Te Mimi o Tū Te Rakiwhānoa (Fiordland CMA) has many deeply held values. Ngāi Tahu Murihiku has developed a vision for Te Mimi o Tū Te Rakiwhānoa which includes

²⁴ [Dusky Track: Fiordland National Park, Fiordland region \(doc.govt.nz\)](#)

²⁵ [Heritage sites: Fiordland National Park \(doc.govt.nz\)](#)

²⁶ Regional Coastal Plan for Southland 2013

(amongst other things) that its future management incorporates humans as part of nature, as opposed to separate from it. Historical use includes journeying through the fiords and contemporary use includes mahinga kai, and both customary and commercial purposes. It is a place that brings whakapapa, people and ahi kaa (continuous occupation) together.

- Features that are universal across all fiords include: a very high degree of naturalness, outstanding scenery, large scale (area size and landform), challenging weather, adjoins Fiordland National Park, and simply the uniqueness of Fiordland.
- Aspects of the fiords that differ geographically include: difficulty of access, activity level, remoteness, human-built infrastructure, natural quiet, type of landscape, extent of connected fiord waterways (fiord complex), and proximity to formally protected areas.

5.2 NGĀI TAHU KI MURIHIKU VALUES

5.2.1 TE MIMI O TŪ TE RAKIWHĀNOA (FIORDLAND CMA)²⁷

Te Mimi o Tū Te Rakiwhānoa represents, in tradition, the raised-up sides of Te Waka o Aoraki. The waka (canoe) foundered on a submerged reef and its occupants, Aoraki and his brothers, Rāraki, Rakiroa and others, were turned to stone. The brothers stand now as the highest peaks of Kā Tiritiri o te Moana (the Southern Alps). The fiords at the southern end of the Alps were hacked out of the raised side of the wrecked waka by Tū Te Rakiwhānoa, in an effort to make it habitable by humans. The deep gouges and long waterways that make up the fiords were intended to provide safe havens on the rugged coastline with stocks of fish, forest and birds to sustain travellers.

For Ngāi Tahu, traditions such as these represent the links between the cosmological world of the atua (gods) and present generations. These histories reinforce tribal identity and solidarity, the continuity between generations, and document the events that shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

Particular stretches of the coastline also have their own traditions. For example, the koko-takiwai (a type of pounamu) which is found in Piopiotahi has its basis in a visit to Piopiotahi by the waka Tairea. A woman, Koko-takiwai, and her children, known as Matakirikiri, were left behind by the Tairea and were turned into varieties of pounamu.

Place names along the Fiordland coast record Ngāi Tahu history and point to landscape features significant to Ngāi Tahu for a range of reasons.

Te Mimi o Tū Te Rakiwhānoa was visited mainly by Ngāti Mamoe and Ngāi Tahu, who had various routes and nohoanga for the purpose of gathering kai and other taonga. The area played a significant role in the history of conflict between Ngāi Tahu and Ngāti Mamoe; a number of Ngāti Mamoe took refuge in the isolation of the fiords, and several battles between Ngāti Mamoe and Ngāi Tahu took place there.

The tūpuna (ancestors) had considerable knowledge of whakapapa, traditional trails, tauranga waka (landing places), places for gathering kai and other taonga, ways in which to use the resources of the area, the relationship of people with the coastline and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

The fiords are the repository of many kōiwi tāngata (burial places), secreted away in keeping places throughout the region. There are also many other wāhi tapu in the area, including examples of rock art in Chalky Sound. Urupā are the resting places of Ngāi Tahu tūpuna and, as such, are the focus for whānau traditions. Urupā and wāhi tapu are places holding the memories, traditions, victories and defeats of Ngāi Tahu tūpuna, and are frequently protected in secret locations.

The mauri of Te Mimi o Tū Te Rakiwhānoa represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with Te Mimi o Tū Te Rakiwhānoa.

²⁷ From Ngāi Tahu Claims Settlement Act 1998; Schedule 102 Statutory acknowledgement for Te Mimi o Tū Te Rakiwhānoa (Fiordland Coastal Marine Area)

5.2.2 NGĀI TAHU VISION FOR FIORDLAND

Te Tangi a Taurira: The Cry of the People – Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan (2008:86) contains the following vision for Te Mimi o Tū Te Rakiwhānoa:

- *That the lands, waters and biodiversity of Fiordland are managed in a way that is consistent with indigenous concepts of wilderness – whereby humans are a part of nature, as opposed to separate from it, and sustainable customary use is consistent with the protection of this special place.*
- *That the pristine waters of Fiordland are used as a baseline for water quality policy in other areas of Fiordland.*
- *That throughout the Fiordland region, we keep up with best practice and new technologies, to minimise the impacts of tourism, development and other human activities.*
- *That tourism and visitor activities are concentrated in areas where infrastructure already exists (eg. Milford Sound), as opposed to opening up new areas for development, and that existing areas of development are managed in a co-ordinated, sustainable way.*
- *That Ngāi Tahu development rights are recognised and given effect to in future development of Fiordland lands, waters and other resources.*
- *That the “sounds of Fiordland” (eg. the dawn chorus) are restored, through effective and appropriate pest control operations and species recovery programmes.*
- *That Ngāi Tahu cultural heritage values associated with Fiordland are protected and enhanced, mō tātou, ā, mō ngā uri ā muri ake nei, for all of us and the generations that follow.*
- *That the lands, waters, sea, air and natural resources of Fiordland are managed in an integrated way.*

5.2.3 CULTURAL ASSOCIATIONS WITH FIORDLAND²⁸

Historical

Manawhenua have a long association with Te Mimi o Tū Te Rakiwhānoa. Because of its attractiveness as a place to establish permanent settlements, including pā (fortified settlements), the coastal area was visited and occupied first by Ngāti Mamoe and later by Ngāi Tahu. Battles sites, urupā and landscape features bearing the names of tūpuna (ancestors) record this history. Prominent headlands, in particular, were favoured for their defensive qualities and became the headquarters for a succession of rangatira and their followers. Notable pā and nohoanga occurred in many areas on the Fiordland coast.

While there have been few permanent settlements, Ngāi Tahu have visited extensively, primarily attracted by koko-takiwai and kākāpō. The area also offered many other mahinga kai to sustain parties on their arduous expeditions, including a range of manu (birds), fish and kaimoana resources.

The traditional routes followed are of significance, as are the places they journeyed to. These routes reflect the nomadic lifestyle of Ngāi Tahu and the rich resources of Te Waipounamu and Te Mimi o Tū Te Rakiwhānoa. Ngāi Tahu travelled for economic and social reasons, and for survival. Oral maps, marked tracks and tools left in situ assisted manawhenua when travelling. Three significant routes of relevance are:

- Tarahaka Whakatipu: from Martins Bay up the Hollyford Valley and over into the Routeburn Valley to the Dart River (similar route to the current-day Hollyford and Routeburn Tracks).
- Ara Tawhito: an inland route for transporting koko-takiwai traversed over what is now known as the Milford Track, over Ōmanui (McKinnon Pass), down the Waitawai (Clinton River), across Te Anau (Lake Te Anau), and down the Waiau River to Te Ara a Kiwa (Foveaux Strait).
- Sea route around the fiords that links Piopiotahi to Murihiku. This was the main route for transporting koko-takiwai from the northern end of the fiords.

²⁸ From Cain, A. (2016). *Fiordland and Islands Freshwater Management Unit: Snapshot of Ngāi Tahu Uses and Associations*. Prepared for Environment Southland and Te Ao Mārama Incorporated by Kauati, New Zealand, and Ngāi Tahu Claims Settlement Act 1998; Schedule 102 Statutory acknowledgement for Te Mimi o Tū Te Rakiwhānoa (Fiordland Coastal Marine Area)

The tūpuna had a huge knowledge of the coastal environment and weather patterns, passed from generation to generation. This knowledge continues to be held by whānau and hapū and is regarded as a taonga. The traditional mobile lifestyle of the people led to their dependence on the resources of the coast.

From Piopiotahi to Pusyegur there were various kaika, nohoanga and urupa. Various archaeological sites are recorded along this stretch of coastline. Its significance includes:

- Well known as a place of use and occupation for Ngāi Tahu historically and currently.
- Associations with Aoraki and his brothers, Tū Te Rakiwhānoa, Maui, Tamatea, Koko-takiwai, and Matakirikiri.
- High concentrations of middens and other archaeological material.
- Oral accounts of nohoanga and kaika throughout the fiords and offshore islands.
- Kōiwi tāngata (burial places).
- Marine and freshwater species caught, birds (weka, kakapo, sea birds, etc.), plants (including kelp), soils, waters and pounamu harvested and manufactured.
- Fishing fleets and factories, notably crayfish, based at Milford Sound/Piopiotahi and Doubtful Sound/Patea (modern).
- Tourism, particularly ‘eco-tourism’, and education ventures (modern).
- Customary harvests of pounamu and marine species (modern).

Contemporary

Te Mimi o Tū Te Rakiwhānoa is still of great importance to Ngāi Tahu for mahinga kai, and customary and commercial purposes. In addition, as places that bring whakapapa, people and ahi kaa (continuous occupation) together.

The cultural significance of Te Mimi o Tū Te Rakiwhānoa has been formally recognised as a statutory acknowledgement under the Ngāi Tahu Claims Settlement Act (1998) in addition there are nohoanga and Topuni recognised in Fiordland. Dual place names have also been formally recognised by the New Zealand Geographic Board for the fiords – more recent official place names reference Te Reo names first and English second, whilst place names formally recognised earlier follow the convention of ‘English/Te Reo’.

The commercial arm of Te Rūnanga o Ngāi Tahu has interests in fisheries as well as tourism. Doubtful Sound/Patea and Milford Sound/Piopiotahi are important fishing ports for Ngāi Tahu fishing interests. Sought after species include: crayfish, paua, rawaru (blue cod) and tio (oysters). In addition to commercial interests, customary takes of pounamu, shellfish, fish, tuna (eels) and inaka (whitebait) are still highly valued.

Specific to Milford Sound/Piopiotahi, the Milford Opportunities Project sets out the aspirations and values of manawhenua for that place (Kauati 2021:13):

Ngāi Tahu kaumātua, historian and Māori place names expert, Tā Tipene O'Regan, describes Te Rua o Te Moko [Fiordland] as the ‘cradle of mythology’ for southern Māori. Te Rua o te Moko is a highly important place in the Ngāi Tahu landscape, being the last great work of Tū Te Rakiwhānoa, who was the carver of rock, shaping Te Waipounamu (South Island) and making it fit for people to live in. Piopiotahi is located in the northern stretches of Te Rua o Te Moko.

Ngāi Tahu are tangata whenua and eight papatipu rūnanga (including from within and beyond the Southland regional border) exercise manawhenua over Piopiotahi. It is their expectation that the manawhenua narrative, recognising Tū te Rakiwhānoa and Hine Tītama, is the context in which to consider appropriate and inappropriate development and management.

Manawhenua see the Milford Opportunities Project as a means to address matters such as the expression of Ngāi Tahu rangatiratanga and kaitiakitanga in Te Rua o te Moko and provide economic pathways for Ngāi Tahu Whānui. Manawhenua are supportive of considered, sustainable development in Piopiotahi and the Milford Corridor to recognise the mana of the place and to enable everyone to experience its wairua.

5.3 COMMON FEATURES OF THE FIORD COMPLEXES

It was apparent from interviews that some aspects of the fiords are common to all fiord complexes:

- Very high degree of naturalness (Figure 5.1).
- Outstanding scenery.
- Scale – large size of Fiordland, and sheer fiord walls.
- Weather – dictates all use in Fiordland.
- Adjacent to Fiordland National Park.
- Uniqueness of Fiordland – internationally unique, “*uniquely Fiordland*”.

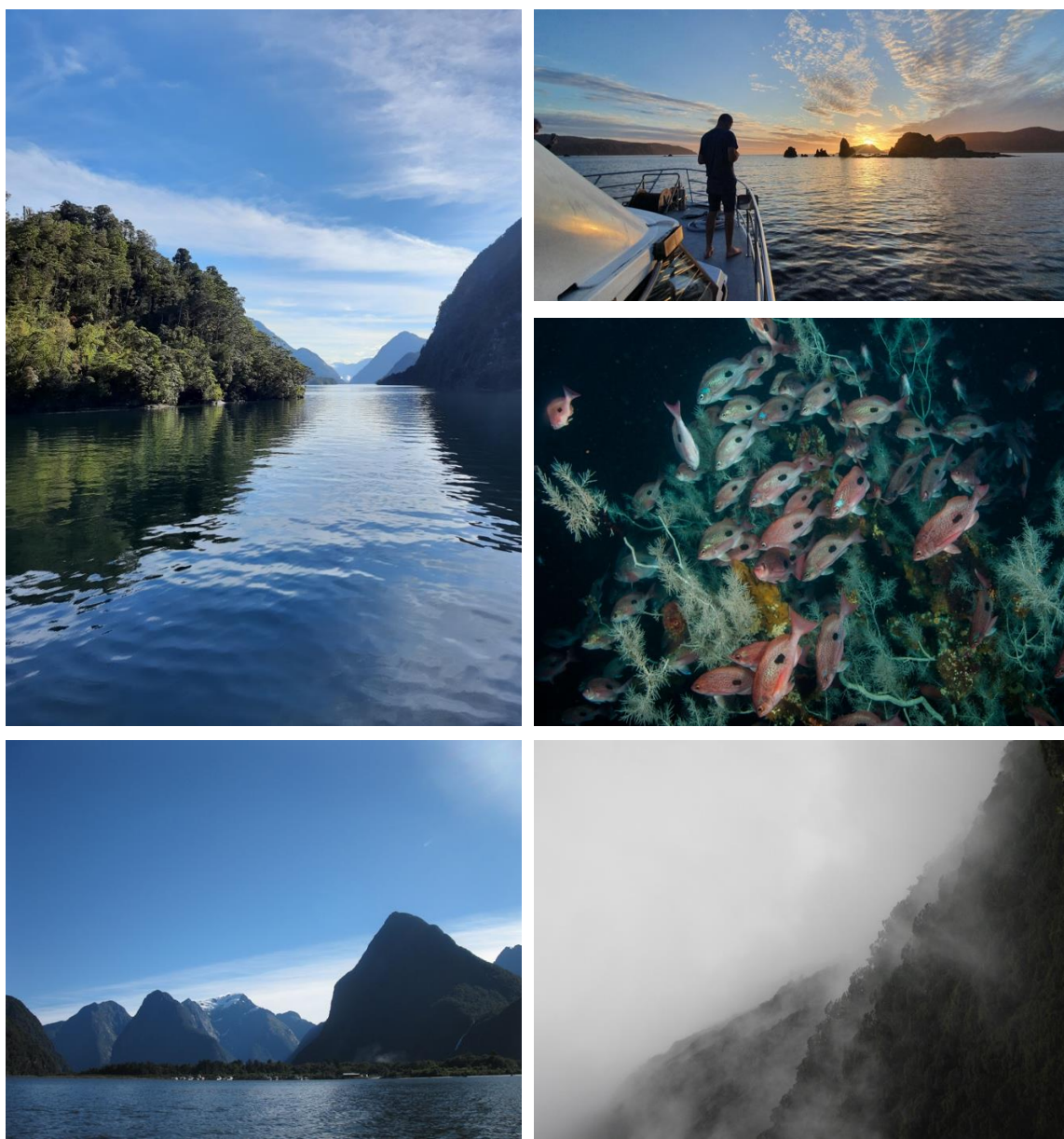


Figure 5.1: Photos showing the naturalness of the fiords

Photo credits (clockwise from top right): W. Simpson, Malcolm Francis, Kay Booth, Jude Wilson, John Carter

5.4 DIFFERENCES BETWEEN THE FIORD COMPLEXES

Some characteristics of the fiords differentiated them, as summarised below.

Difficulty of access:

- Milford Sound/Piopirotahi and Doubtful/Patea are entry points, there is helicopter and floatplane access throughout (some restrictions), and boat access from Riverton and Bluff.
- Spectrum of access difficulty – Milford Sound/Piopirotahi (road access) and Doubtful Sound/Patea (road/boat) are different to the rest; their ‘barrier to entry’ is much lower (travel is quicker/cheaper, self-drive). All other fiords require aircraft or boat access, which is expensive and requires a commercial trip (for most people).

Level of recreational and tourism activity:

- Milford Sound/Piopirotahi and Doubtful/Patea receive day use – all the other fiords are multi-day/overnighting destinations (with the exception of one operator running fly in/out day trips into Tamatea/Dusky Sound).
- These two fiords are international visitor destinations; all other fiords are dominated by domestic visitors, largely dictated by access: *“[It’s] always been New Zealanders in Dusky and the southern fiords – before and during Covid. International visitors are time poor and because it is about New Zealand history – the average international visitor is more into New Zealand cultural history than early European history.”*
- *“Pre-Covid you used to explain to clients that Milford was the one that was sacrificed with high traffic ... with Doubtful being quite managed but still for the people that want to explore a little bit more (higher frequency but capped numbers) and then the remainder of Fiordland was wilderness – only a handful of boats, harder to access and at that stage most people were traveling up and down the coast – that was the ‘faraway place’.”*
- *“I think it’s more about the volume and I think with Milford, you almost have to take it out of the equation because ... it’s a tourist product whereas the southern fiords are more of a wilderness experience – because they are down there for 5 or 7 days and you don’t see many, or any, other boats. When you come into Milford and when those people see those boats they are not disturbed by it because they know that it’s Milford ... but if you saw 10 boats doing circles in Dusky Sound or Preservation Inlet they would have a different view of it.”*
- *“The concentrated effect is the biggest impact on the wilderness – I don’t want to push that Dusky is getting ruined too much, because next minute they will ruin other areas [shift to other fiords]. The sacrificial lamb was Milford and then in my eyes it went Milford and Doubtful, because they were starting to do whatever they wanted in there [Doubtful], but now it is sacrificial Milford, Doubtful and Dusky.”*
- *“Milford and Doubtful have been marketed, so people know about them and will want to go to them. People are discovering Dusky ... I don’t think people will know very much at all about any of the other fiords.”*

Degree of remoteness:

- As previously described, remoteness is directly related to access.
- A spectrum was apparent with respect to perceptions of remoteness – from least to most remote: Milford Sound/Piopirotahi, Doubtful Sound/Patea, Tamatea/Dusky Sound and finally the Southern and Northern fiords.

Extent of human-built infrastructure:

- Fiord access points in Milford Sound/Piopirotahi (Freshwater Basin, Deepwater Basin) and Doubtful Sound/Patea (Deep Cove) provide bases for resident boats (fishing, tourism, recreation) and facilitate other boats to pick up/drop off passengers. Infrastructure to support this activity includes toilets, wharves, boat ramps, etc. Freshwater Basin at Milford Sound/Piopirotahi houses a large visitor terminal streamlining boarding for cruise boat passengers.
- Milford Sound/Piopirotahi village offers a range of accommodation and Deep Cove Hostel (outdoor education lodge) in Doubtful Sound/Patea is available to the public when not being used by schools.

Otherwise, land-based accommodation within the fiords is limited to a few Department of Conservation Te Papa Atawhai huts and campsites, and Kisbee Lodge in Rakituma/Preservation Inlet which can cater for around 20 paying guests.

- Spread across all fiords are permanent water-based structures – moorings, pontoons, barges, etc. The extent of these structures relates broadly to the amount of use the area receives. Some relate to fishing activity rather than recreation/tourism activity.

Degree of natural quiet:

- Linked to access and complex size is the extent of aircraft noise (fixed-wing aircraft, helicopter and float plane).
- Milford Sound/Piopiotaahi has an airport and is a base for scenic flights. It receives the most aircraft use/noise (by far).
- Tourism/charter guest change-over flights have increased into Tamatea/Dusky Sound (particularly Supper Cove) and the Southern fiords. Rakituma/Preservation Inlet has more heli-access site options which spreads the intensity of use.

Type of landscape:

- The fiord walls get steeper as you go north – Southern fiords are more undulating with steep mountains or islands as backdrops, whereas the north has the more dramatic landscape of sheer fiord walls associated with glaciated valleys.
- *“The fiords change from about Dagg Sound north – they get very tight and high and steep. Whereas south of Dagg – like at Preservation and Dusky – everything opens up, and you have over 70 islands scattered through Dusky so it looks quite different to the rest. And Preservation and Chalky look different to the northern fiords. Doubtful is dramatic, and Milford – that snapshot looking at Mitre Peak is stunning.”*
- These physical differences affect boat visibility – Milford Sound/Piopiotaahi offers an out and back trip, whereas in Tamatea/Dusky Sound *“you can hide yourself away in nooks and crannies and have a real wilderness experience”*. The larger complexes offer different arms that spread boats out.
- The landform of the fiords also dictates landing options. For example, Te Hāpua/Sutherland Sound and the Southern fiords offer opportunities for passengers to get off the boat and walk (popular with passengers).

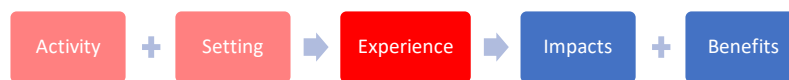
Extent of connected fiord waterways (fiord complex):

- Some fiords have extensive internal waterways while others do not (linked to physical attributes).
- Internal waterways provide opportunities for safe anchorage, calm water for cruising (can cruise for multiple days within large complexes like Tamatea/Dusky Sound) and the opportunity for boats to disperse (avoid each other).
- *“The southern fiords have got shelter and places you can hide. Those northern fiords are more exposed – not as many places to anchor or hide from the weather... you can get 10m swells on the open sea.”*

Proximity to protected areas:

- While all fiords are surrounded by Fiordland National Park, some are adjacent to Wilderness Areas or contain Marine Reserves or ‘China Shops’.

6 WILDERNESS AND REMOTENESS VALUES OF THE FIORDS



This section addresses Study Objective 1: Describe the wilderness and remoteness values for each of the five fiord complexes. It is based on interview data. Interviewees were asked about their wilderness and remoteness values for the fiords and whether these differed by fiord. This section presents:

- Perceptions of the wilderness values of the fiords.
- Perceptions of the remoteness values of the fiords.
- Key elements that comprise these values.

As shown in the diagram above, this section discusses values associated with the recreation/tourism **experience**; however, the interview data also address activities and the fiord setting itself. Interviewees talked about both their own values and experiences, and also their clients’.

6.1 SUMMARY

- There was a large degree of congruence about the wilderness value of the fiords, most commonly defined as the absence of people and human modification.
- Remoteness value was commonly defined as: (1) difficult access, and/or (2) a less strict version of wilderness.
- Oftentimes, interviewees saw wilderness and remoteness as very similar or interlinked. It is suggested in this study that wilderness is the primary or overarching value, of which remoteness is a key element.
- Elements of wilderness value derived from research elsewhere were all found to apply to the Fiordland waters: remoteness, naturalness, minimal human presence, natural quiet, aesthetic appreciation/scenery, conservation-related activity and personal experience.
- Least applicable was conservation-related activity (including the presence of protected areas), perhaps because Fiordland National Park surrounds all fiords minimising the effect from the presence of Wilderness Areas and Marine Reserves.
- Scale was found to be an element associated with the fiords that was not highlighted in the research literature. This element encapsulates the large size of Fiordland and the nature (steep sides) of the fiord landscape.
- All interviewees considered the fiords to be unique. Most people made this comment in an international context.
- Many interviewees voiced the need for a balance between protecting wilderness value and enabling people to visit Fiordland – showing common agreement about the ‘problem’.
- Comments about the different fiord complexes indicate particular values attributed to them.

6.2 WILDERNESS VALUES OF THE FIORDS

There was a large degree of congruence about the wilderness value of the fiords.

Wilderness value was most commonly defined as the **absence of people and human modification**, with references made to the absence of: buildings, permanent structures, barges, moorings, infrastructure, roads, human impact/manipulation, boats, helicopters, *“nothing that shouldn’t be there”*, and simply *“don’t see anybody”* (not listed in any particular order). A related notion of being removed from civilisation was raised by a few – being away from normal life (roads, cars, people, communication), a place to escape to, *“there are so few places you can go now that you actually have that experience of being removed, totally removed”*.

References to **nature** featured strongly (but are less dominant than the absence of human presence/modification). Nature was commonly described as being 'untouched' with a variety of other descriptors used including unspoiled, pristine, wild, rugged, raw, clean, forested hillside, natives, untouched ground. Occasional mention was made to the fiords being unchanged: "*Scenery as it was 10,000 years ago.*" The value of ecosystems was mentioned and the integration of the land and water was highlighted by some – "*it's all integrated, that's what Fiordland is – it's the water and the mountains together.*"

Quite a few also described wilderness in terms of **their experience**, including the opportunity to experience the natural environment without distraction, peace and quiet, tranquillity, solitude, connecting to place, magical encounters, "*other worldly*", thinking you were the only one to have been there, being self-reliant. One interviewee mentioned the connection with historical culture, that Māori had moved through Fiordland – traditional use/journeys was an important element of wilderness to them.

The congruence of interviewees' definitions of wilderness shows common ground with respect to the fiords' wilderness value.

Individual **elements of wilderness** derived from the research literature for this study (see section 3.4.6) were explored with interviewees – remoteness, naturalness, minimal human presence, natural quiet, aesthetic appreciation, conservation-related activity and personal experience.

Interviewees confirmed that all of these elements apply to the fiords, albeit not everyone agreed that conservation-related activity was an important element of their fiord wilderness value. While this finding was not examined further, it may be that the presence of Fiordland National Park adjacent to all fiords dampened the significance of this element (cf. findings reported in the research literature comparing areas with and without any conservation protection/activity).

Scale was found to be an element associated with the fiords that was not highlighted in the research literature (but is referenced in the Recreation Opportunity Spectrum planning framework). This element encapsulates both the large size of Fiordland and the nature of its landscape from the on-water experience – especially the height and vertical aspect of the fiord walls.

While the interviews asked about each element separately, some interviewees commented on the **intertwined nature of these elements**: "*It's a full sensory experience – it's all of these things together, intertwined. Sight, sound, smell, the whole lot.*"

6.3 REMOTENESS VALUES OF THE FIORDS

This section identifies how people define remoteness value of the fiords.

Interviewees defined remoteness in terms of: (1) **access**, and/or (2) a **less strict version of wilderness**. This accords with the findings from elsewhere (identified in the research literature).

The most common definition of remoteness was access, usually described as the difficulty of getting there: eg.

- "*Remoteness is the ease of getting there. Being remote is being difficult to get to. Fiordland is all remote because you need a boat or helicopter or a floatplane to get there.*"
- "*The remoteness ... I mean it's not far away from anywhere, but Dusky and Doubtful are difficult to get to from the landward side and they are difficult to get to from seaward because the weather is so changeable and most of the time pretty atrocious down off Puysegur – that's why you don't get the yachties in there – there are no marinas in there with yachties staying for months on end because it's inhospitable – it's all evidence that it is a wilderness – it's too hard for people to stay there long-term.*"
- "*Fiordland holds a real mystique in people's hearts and it's because of access – no matter whether you are walking, flying by float plane, flying by helicopter, or going by boat ... into deep dark Fiordland ... it's committing – it's hard to get to – you have to be well-organised and that will never ever change.*"

Some consider access includes communications (especially cell phone cover): remoteness is about going "*off the grid*" and "*putting the phone down and enjoying the moment.*"

The difference in access between Milford Sound/Piopirotahi (drive in) and Doubtful Sound/Patea (boat/drive in), and the other fiords (long boat trip or fly in) was commonly raised, and the importance of access emphasised: *“It’s all about access points”*.

Interviewees felt the journey to get into Fiordland enhanced remoteness because it is through a challenging environment, recreationists need the *“nous to get in there”* and the right boat: *“the journey enhances the remote feeling”*. Some talked about the journey as an important aspect of the experience. For a few, a helicopter trip (for access) enhanced the perception of remoteness.

Acknowledgement was given to different perceptions of remoteness by some – eg. *“For someone from overseas Milford is pretty remote, but for us [New Zealanders] it’s not.”*

Difficulty of access was mentioned as a positive attribute: *“I wouldn’t like Fiordland to end up like the Marlborough Sounds and it probably never will because of its remoteness – its remoteness protects it.”*

Remoteness was also characterised in similar ways to wilderness (albeit a less strict version) eg. remoteness being impacted by expectations of seeing people, the presence of other boats and structures, that remoteness was being away from other people: *“If a place looks busy, it doesn’t look remote.”*

Some interviewees saw wilderness and remoteness as *“one and the same thing”*, while other responses identified remoteness as one element of wilderness, that they are inextricably linked – *“remoteness ... caused the wilderness, because they’re remote, isolated, not easy to get to, they took time to get to, they took effort”* and *“you need to get remote to get true wilderness.”*

It can be construed that **wilderness is the primary/overarching value, of which remoteness is a key element.**

6.4 FIORD UNIQUENESS AND ‘PERSONALLY VALUED THE MOST’

Interviewees were asked **whether they thought the fiords were unique**. There was universal agreement that they were, with most people making comparisons with other places around the world (Patagonia, Chile, fiords of South America, Norway, Greenland, Alaska, Canada). Statements were made such as: *“there’s nowhere else like it”* and *“uniquely Fiordland”*. Responses highlighted unique attributes of the fiords and reinforced the definitions of wilderness value described above:

- Unchanged naturalness: *“the fiords haven’t really changed in a natural sense. They’re the way they were and have been for 10,000s years.”*
- Minimal human presence: untouched, no one lives there.
- Natural elements: eg. the bush running into the sea, underwater ecosystem (frequent mentions of the ability to see black coral and of the freshwater layer).
- Scientifically important underwater ecosystem.
- Recreation activities: eg. *“where can you take people in such a beautiful setting and then be eating crayfish for lunch, blue cod the next day, some paua, some scallops, you can shoot a deer – there’s no place like that in the world including the underwater side of it”*.

With respect to the wilderness and remoteness values they had been discussing, interviewees were asked what they **personally valued the most**. The responses emphasised naturalness of the fiord environment (including mention of the fiords not changing for centuries), recreational opportunities, and personal experiences (such as solitude):

Unchanged naturalness:

- *“It’s almost, but not quite, as James Cook and other early explorers found it – there are places there where things haven’t changed for 400 or 500 years ... it’s as near to a wilderness as you are going to get pretty well anywhere in the maritime field.”*

Naturalness:

- *“It’s world class under the water – literally one of the top 10 scuba diving places in the world”*.
- *“Its natural state – it’s as close to what we can get at the moment [to natural] ... everything seems to be on the right track with reserves, the islands being predator free, and things like that.”*

- *“Just probably the uniqueness and the fact ... where the mountains meet the sea – for me that makes them unique.”*

Scenery:

- *“The beauty.”*
- *“I still like the scenery because every day [even though I’ve been there a long time] I still take about 50 photographs ... there’s always something different every day.”*

Personal experience:

- *“For me it’s the disconnect from civilisation ... and the reconnect with the stuff that is really important ... it comes back to that quiet and no other activity – it’s just you in that space and nothing else and no outside input, to just be in that moment.”*
- *“It’s that peacefulness ... if you find the right corner you can just be you in the remote environment with everything surrounding you – underwater, on the surface, in the forest.”*

6.5 ELEMENTS OF WILDERNESS VALUE

Interviewees were asked how well the seven elements of wilderness (and remoteness) value that had been identified from the research literature applied to the different fiords. As noted earlier, all elements were confirmed as relevant to the fiords (conservation-related activity the least so). Enquiry into each element further explained interviewees’ wilderness values. The element ‘remoteness’ is discussed above.

6.5.1 ELEMENT OF NATURALNESS

Enquiry into naturalness as a specific element of wilderness served to reinforce points already made, indicating the significance of this element in people’s perceptions of wilderness value.

Fiordland’s grandeur and scale was raised by many interviewees. A couple of people commented that seeing a boat/helicopter/cruise ship/waterfall gives people an idea of the tremendous scale of the fiords.

The naturalness of the fiords included both land and water for most people, and the underwater environment was mentioned by some.

A common theme was the unchanging naturalness of the fiords:

- *“People [clients] talk to me so many times – that this hasn’t changed a lot since Captain Cook arrived in 1773. I probably hear that 3-4 times from customers every week.”*
- *“70% of the sounds is like it was 300 years ago.”*

Fiordland as an extreme environment came up occasionally:

- *“When you are in Fiordland realistically you will often be 8-12 miles from any small piece of land where you can land [aircraft], that’s not completely covered in bush and vertical, it’s so committing and it’s not the kind of place that’s user friendly for people generally – it’s hard out.”*
- A couple of interviewees mentioned that you cannot control Fiordland, it controls you.

It was common for interviewees to emphasise the naturalness of Fiordland and then acknowledge that access points have infrastructure – for most people this was accepted and acceptable:

- *“There is a huge amount of Fiordland that is wilderness now ... basically it’s all wilderness – you have Milford Sound and Deep Cove which are entry and exit points and you have got to have some sort of infrastructure there.”*
- *“Even the Predator Free [conservation programme] places have to have tracks, people and infrastructure.”*

6.5.2 ELEMENT OF MINIMAL HUMAN PRESENCE

As already mentioned, the absence of people, boats and permanent structures was a common denominator in the way that interviewees defined wilderness. Asked further about this element of wilderness, different

aspects of this element became apparent. Because the answers were in the negative (how human presence/modification impacted on wilderness), these responses are discussed in section 7.3 *Impact factors*.

6.5.3 ELEMENT OF NATURAL QUIET

Answers to the question about natural quiet largely elicited responses about non-natural noises that impact on natural quiet (the sounds of nature). People didn't comment on aspects of natural quiet *per se*, except in the context that natural noise can sometimes drown out non-natural noise. Responses about impacts on natural quiet are provided in section 7.3 *Impact factors*.

6.5.4 ELEMENT OF AESTHETIC APPRECIATION

When asked about aesthetic appreciation, unanimously interviewees saw this as a big part of the Fiordland experience:

- *"Scenery, that's all it is really, that's the main part of it [the experience of the fiords]."*
- *"Seeing the place just blows them [clients] away ... and if there's no-one there, it makes it better. It's just the scenery – they've never seen anything like it – it's the scenery, the mountains, even the waterfalls."*

Many people thought aesthetic appreciation doesn't differ geographically – all of Fiordland was seen to offer high aesthetic appreciation value: *"The place and the scale of the place is so big that aesthetically everywhere is pleasing."* Although a few mentioned Milford Sound/Piopiotaahi as 'the jewel in the crown' with respect to scenery. A couple of interviewees highlighted the scenic values below the surface of the water.

Some interviewees expressed personal preferences for certain fiords/places or aspects of the scenery, often linked to personal attachment to a place.

For some, the differences in aesthetic appreciation values were linked to presence or extent of adverse elements:

- Aesthetic appreciation varied depending on the presence of human structures – the barges and moorings specifically.
- *"It's almost aesthetic pollution for want of a better word."*
- One interviewee talked about the increasing amount of rubbish on the tideline – in the context of its potential to detract from pristine scenery.

In contrast, the aesthetic appeal may be enhanced by solitude and the scale of the landscape:

- *"The scenery is just phenomenal – there is nothing like waking up in the morning and looking down Vancouver Arm and looking at the layers of hills as the sun is coming up and the mist hanging ... especially when you are the only boat in there – you can't beat that – or if you kayak, you just feel like the smallest ant with those towering mountains around you."*

Yet another perspective was that even though some fiords are busier than others, their beauty remains: *"Milford is the busiest fiord and [yet] I absolutely love it – every time I come back inside from the coast, it blows me away."*

6.5.5 ELEMENT OF PROTECTED AREAS AND CONSERVATION-RELATED ACTIVITY

Interviewees were asked two questions: (1) whether the presence of designated Wilderness Areas and Marine Reserves made a difference to their perception of wilderness and remoteness value; and (2) whether conservation-related activity influenced their perception of wilderness and remoteness value. They were not asked about Fiordland National Park *per se* – given the national park surrounds all of the fiords, it would not differentiate between fiords.

Designated Wilderness Areas and Marine Reserves

For most people, their sense of wilderness was not influenced by the presence of designated Wilderness Areas adjoining the fiords and Marine Reserves within them. Several people made comment that all of Fiordland is wilderness with one person commenting that visitors wouldn't know about the formally protected Wilderness Areas – to them all of Fiordland is wilderness.

A couple of charter operators felt it did add to their wilderness values. One operator commented that: *“you also have an expectation that its wilderness and its remote and its protected. That’s something that I think is quite a common theme internationally – that it is protected.”*

Discussion about Marine Reserves mostly took the form of positive comments about their value (although this wasn’t what was asked) including: protection of the black coral, underwater habitat, breeding ground for fish, marine mammal habitat, and opportunity for education. Or simply that it was good to have them; to provide places for nature. No-one was negative about Marine Reserves, except one person who questioned whether they made any difference as activities did not appear to be restricted within them.

Several operators mentioned that Marine Reserves were not visible above the water except for their markers but that a difference can be seen underwater:

- *“You can see a massive difference on the line [delineating the reserves].”*
- *“Some operators will take guests to dive in an open area, and then they take them and let them dive in a Marine Reserve ... customers see a big difference.”*

Conservation-related activities

Asking them about conservation activity, interviewees were positive about the conservation activities underway. However, the influence these activities have upon people’s wilderness and remoteness values differed, as the activity of conservation management had its own impacts:

- *“I don’t know that it [seeing conservation activity] would add to the wilderness because really if it was true wilderness we wouldn’t need it – it’s a two-edged sword – it implies that there is actually something wrong with it – that it needs active management.”*
- *“Predator free traps are unnatural but people, in the main, accept them as the lesser of two evils. If you didn’t have the traps, then you know what the impact is going to be [loss of native species]. Turn it around the other way – if there’s really good bird life and there are traps – then people are even more accepting, as they can experience the job that the traps are doing there.”*
- Protecting native species is good, but it increases helicopter activity which is an impact – *“We have to explain to our guests what’s happening – that makes it more acceptable to guests.”*
- Conservation activity like the Predator Free conservation programme was commented on by tourism operators as a positive part of visitors’ experience.

Some companies support conservation activities/projects and these initiatives were discussed (see section 8.4.4).

6.5.6 ELEMENT OF PERSONAL EXPERIENCE

When asked about personal experiences as an element of the wilderness and remoteness values of the fiords, elaborating comments covered a range of topics.

Tourism operators talked about the emotional responses they see amongst their guests:

- *“It can get pretty emotional for people. I’ve seen people crying on the decks.”*
- *“We have a lot of people that are bucket listers. Some are sick – they are quite emotional with it.”*
- *“There’s numerous articles about people going to Fiordland and having this sensory or spiritual experience in the remote areas or when the boats go into Crooked Arm of Doubtful Sound – they turn everything off – that is valued very very highly by a lot of people who go there.”*

There was a theme of place attachment in some responses – that special places were the ones to which they had developed attachment as a result of frequent visits:

- *“To me it’s just my home ... you are kind of showing people your back yard ... you know it so well and it’s not just on the water – it’s under the water.”*
- One charter operator talked about their desire to *“connect people to the place, to give back and impart understanding”* (further discussed in section 8.4).

Another theme was the ability to focus, without distraction, upon the experience of being there (called ‘immersive activity’ within the research literature):

- *“I think it’s also the ability to switch off and not have those worldly distractions. And wilderness value for me is a connection and appreciation of beauty within the natural environment, which for me has some sort of growth experience for the person.”*
- With an immersive experience: *“time slows, the mind goes away, you have a child-like sense of wonder and it’s a lot easier to take in beauty and develop a cultivated sense of conservation values, appreciation of life.”*

6.6 STRIKING A BALANCE

It was very common for interviewees to refer to the need for balance between protecting wilderness value and allowing people to go to the fiords – the dilemma of how you keep it remote and wilderness but still have people experience it. This indicated some common agreement about the ‘problem’:

- How to manage use without impinging upon the wilderness value they went there to experience: *“You can’t be there, and you can’t get there, without having some impact”.*
- This conundrum of wilderness use was pinpointed by one interviewee: *“The reason you want to retain the wilderness and remoteness values is so that when you visit there you don’t see anyone. But you’re visiting there. Therefore the more people that visit there to not see anyone, the more people they see.”*

Largely comments about ‘balance’ took the form of comments stressing the importance of the public’s (especially New Zealanders) right to visit the fiords:

- *“Got to remember that the fiords are a part of New Zealand and the public have a right to go there, the same as anywhere else in the country. Got to be careful not to become over-zealous in what we perceive to be dramatic changes in the fiords.”*
- *“It is there for people to see too, so you can’t just lock it up because it’s wilderness. What’s the point of it being locked up?”*
- *“It should be able to be shared [by different types of users] – why lock it up completely? – but it has to be managed.”*

The word ‘elitist’ was used by a small number of people – particularly, that it wasn’t appropriate if only rich people could access the fiords.

Some talked of balance in terms of numbers affecting the quality of experience – that it had tipped too far (too many people/boats) – and even suggested acceptable numbers:

- *“I am not saying I want Milford to go back to 1.5 million people a year – I think there’s a balance somewhere – it got a bit extreme in my personal view.”*
- *“To me the whole thing is about keeping it low impact and not seeing 10 charter boats in one day – 3 or 4 would be okay on the odd day ... but not in the same place or at the same time.”*
- *“[I’m] very conscious that there is a balance somewhere and we might have exceeded what the ideal balance is with 130 [large] cruise ships – maybe around 90 or 100 is the way to go.”*
- *“When the [large] cruise ship first comes through it’s pretty cool seeing a massive ship in such a tight area and it’s a bit of a buzz. But there’s nothing worse than seeing that cruise ship going past every day.”*

A link to education and fostering conservation through experiencing nature was made by quite a few people:

- *“We all own these places, and we want people in there because that’s how they are protected – we should be providing people with the opportunity to see the place either privately or through a company.”*
- *“I think it’s really important that people experience it too, because if nobody experienced it, nobody would care about it and it would fall to pieces – we have people out there keen to protect it and do the trapping, and [they] do that work because they can see it.”*
- *“Fiordland is a very important resource in terms of conservation education and people should be able to go there – so it is a bit of a balance.”*

Access to Fiordland National Park (from the water and air) was highlighted by one operator: *“We still have to let people see the Park – we can’t just close it off – it’s mine and yours as much as anyone else’s.”*

6.7 FIORD COMPLEXES

Interviewees were asked about any differences between the fiords with respect to wilderness and remoteness values. Often the answer was ‘no difference’. Comments about individual fiord complexes are reported in this section.

6.7.1 MILFORD SOUND/PIOPIOTAHU

Milford Sound/Piopiotahi’s scenic beauty was commonly referenced by interviewees, with the term ‘jewel in the crown’ being used occasionally; a smaller number commented on Milford’s visitor ‘pull’:

- *“They [clients] all leave saying that they were blown away by the scenery – Milford is definitely ... the jewel in the crown as far as that wow factor – even on a wet day it’s like no other fiord.”*
- *“Scenically Milford still has that ‘wow factor’ – amazing – you can’t take that away.”*
- *“Milford is spectacular because you have got Mitre Peak – probably one of the most photographed mountains in New Zealand and you have the Pembroke glacier. And there is not many other fiords that have glaciers and the pulling power of Mitre and the accessibility.”*
- *“There’s a lot of views in Doubtful and all those other fiords that are like that, but there’s not many places like Milford, were you spin 360 and every view blows you away.”*
- *“Milford has no substitute, is a very strong draw card.”*

Wilderness value of Milford Sound/Piopiotahi was referred to either as lower than other fiords (common) or in terms of the fact that the fiord retains wilderness value irrespective of its high use.

Interviewees described experiencing wilderness at Milford Sound/Piopiotahi early and late in the day, or simply *“now and again”*. Operators outside the mainstream tourism cruise sector (even large cruise ships) scheduled routes and times to maximise the wilderness experience for their clients. Some water-based trips start very early (on the water at 6.20am) – *“so you can get it [wilderness feeling] for half an hour or 40 minutes, an hour if you are lucky ... you certainly can get it now [Covid effects] quite a bit more of the time.”*

6.7.2 NORTHERN FIORDS

As described previously (section 4.6.2), use of the Northern fiords is increasing, described as being driven by a *“search for remote experience taking more boats into the Northern fiords.”* In other words, displacement is occurring – users shifting location as they become dissatisfied with their existing place/s (related to increased recreation/tourism activity) although this also depends on visitors’ motivations (as the Northern fiords do not offer the same array of activity as other fiord complexes):

- *“In the northern fiords that [social etiquette issue] will become more compounded because already there is a shift of operators ... the likes of [boat name] who want to spend more time in the north because it is getting too busy in the south – so that’s a natural shift – especially for the operators that are still extractive [because these fiords do not offer scenic cruise passengers opportunities to get off the boat].”*

One charter operator talked about safety implications of going to these fiords and finding other boats already there:

- *“So you steam all the way up the fiords there enjoying the remoteness and you come around the corner and there is two 40-metre boats parked there ... you have nowhere to go – you have to steam back out and go into another fiord, and as it starts to get busier with those other companies moving in, you might find that in every fiord – so you have lost your remote factor for yourself and now it’s dangerous ... there are cray pots out there, it is rough weather out there and I am now I’m fatigued and can’t find an anchorage.”*

Specific fiords were mentioned:

- *“George, Charles, Caswell – they offer wilderness and remoteness [because they are less visited].”*

- *“Sutherland Sound will always be remote because you can’t get a boat in there.”*
- *“Charles is quite user-friendly in a lot of ways, with anchorages and stuff like that. There’s a few people that venture up there, but I’d say it’s quite remote.”*
- *“You can dingy into Sutherland – I can’t get a boat in there – but Bligh, George, Caswell, Nancy are beautiful fiords and the same deal – potentially not as good for safe anchorages, so it’s a bit harder with the weather but generally you like to think you won’t run into anyone and you won’t see any charter boats as a rule – but there is quite a few fizz boats up that end – it’s a lot nicer – we have been going a lot more that way just to keep out of everyone’s way.”*

Their aesthetic appeal was mentioned: *“I actually love the northern fiords – not just because there is no one there – they are just quite dramatic and there’s special places everywhere.”*

Many interviewees considered the Northern fiords to be the most remote of all the fiords (but often then commented that this was changing owing to increasing use). Others felt that the Southern fiords were the most remote fiords.

6.7.3 DOUBTFUL SOUND/PATEA

There was a strong theme that Doubtful Sound/Patea was ‘next in line’ to Milford Sound/Piopirotahi. People frequently described Doubtful Sound/Patea with reference to Milford Sound/Piopirotahi – both in terms of level of activity, values and impacts.

Recreational boat use (via Lake Manapouri and Wilmot Pass) received comment:

- *“Doubtful is pretty much being diminished pretty quickly because it is accessible to all these wee fizz boats – it doesn’t matter where you go in the summer, you’ll run into boats – and the syndicate boats ... that’s in the summer ... there is more traffic now than there used to be in Doubtful.”*

Increased use of Doubtful Sound/Patea led some interviewees to feel it was *“no longer remote”* and *“you kind of think it will be more remote than it is.”*

Scenic value was universally considered to be high, with common reference to its multiple sounds and arms (complex size and intricacy):

- *“You get a lot of fiord ‘bang for your buck’.”*
- The size of the complex offers opportunity to spread boats out: *“It’s a huge area and you can’t really judge when it’s saturated – we had some people ... and they wanted to go here, there and everywhere (including Preservation Inlet), and then they got in there and never got out of Doubtful – it is huge in there.”*

The underwater environment received comment: that Doubtful Sound/Patea has *“ten times the dive sites of Milford”* and that the Gut Marine Reserve is rated the best dive site in New Zealand.

Deep Cove was acknowledged to have a lower degree of naturalness owing to the access infrastructure.

6.7.4 TAMATEA/DUSKY SOUND

The influence of the landscape on wilderness and remoteness values was evident – that the presence of internal waterways and fiord arms provided opportunity for boats to avoid each other thus increasing the sense of wilderness:

- *“In Dusky you can hide yourself away and have a really cool wilderness experience and be right beside another boat – especially Anchor Island or somewhere like that.”*

Tamatea/Dusky Sound was liked because of its size and because there are a lot of things you can do there.

Scenic value was mentioned frequently for Tamatea/Dusky Sound, often linked to the *“vast expanse”* of the fiord complex with its many *“nooks and crannies”* and *“lots of wee islands”*:

- *“Dusky has a way more to offer in scenic beauty [than other fiords].”*
- *“I love Dusky ... I just think it’s such a ... every time you go there it’s different – it can be moody, clear and it’s beautiful when you land and look right out to see and all the wee islands on it – it’s pretty*

cool I've been there 3 or 4 times lately and seen no one – no boats, nothing – it's pretty cool and that is your remote experience, isn't it?"

This was linked to the opportunity for cruising the large complex offered:

- *"If you're stuck in Dusky you can fill in three or four days, so it's just those linked waterways without having to go to the open coast."*
- *"[You can] cruise there for 5-6 days and never be in the same place twice, because of the sheer expanse of the place. And you're in calm conditions all the time."*

Specific locations were mentioned:

- *"Dagg is remote because everyone avoids it – schedules determine visitation to some extent (eg. people would be leaving that Dusky/Breaksea complex, and you are heading north to drop off clients then you are kind of at the end of your charter and so you go past Dagg, and also if you get a big westerly swell rolling in there you get stuck in there so not many of us actually visit there)."*
- *"The biggest area of [boat] activity that I see regularly is around Anchor Island (relates this to DOC activity and safe anchorage) – apart from that I don't think we're over-run with boats at all – like Fiordland is a really big place."*

The increased use associated with the Covid period was commented on in terms of its detrimental impact on wilderness value:

- *"Dusky and Breaksea have just gone sort of stupid and everyone says they are going to Dusky, not Fiordland and everyone seems to want to go to Dusky, but the wilderness factor down there is gone."*

6.7.5 SOUTHERN FIORDS

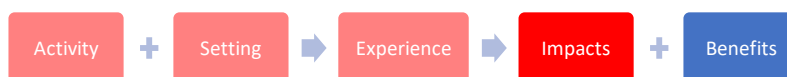
Some interviewees considered Rakituma/Preservation Inlet to be the most remote of all the fiords – this related to the difficulty of access/distance.

When discussing structures with the fiords, Kisbee Lodge received mention by a handful of people as a large permanent structure.

Values associated with specific locations were mentioned:

- *"Around North Port in Chalky is special for Fiordland because it's different."*
- *"Long Sound – the beaches and the stingrays, you can actually see them in the water. It's a beach scene."*
- *"Going right up into Long Sound [is quite different] – the top of Long Sound is like a lake with all sorts of weird stuff up there."*
- *"Chalky – the fishery is incredible there – always has been, always will be. And it's just super cool diving – great whites there, heaps of them."*

7 IMPACTS UPON WILDERNESS AND REMOTENESS VALUES



This section addresses Study Objective 2: Identify effects (if any) from commercial boat activity upon wilderness and remoteness values. It examines the nature of impacts from wide perspective, considering all types of boats/users not just commercial boat activity. This ensures that any effects from commercial boat activity are placed in context. More specifically, this section addresses:

- Whether wilderness and remoteness values of the fiords are being impacted.
- Factors that are impacting upon wilderness and remoteness values of the fiords.

Information in this section is drawn from interviews.

7.1 SUMMARY

Perceived impact upon wilderness value of the fiords

- Differences were found between interviewees with respect to whether wilderness value has been compromised by recreation and tourism activity. Across the set of interviewees, some believe that wilderness values of the fiords have already been lost; others believe they remain unaffected by changes in use.
- This study does not measure the extent of impact upon wilderness value of the fiords.

Perceptions of what is impacting wilderness value

- Elements of wilderness value define what it is – and define what affects that value.
- The most common concern is the increasing number of people and boats. This was described in three ways: (1) vessel numbers and visibility, (2) human structures, (3) people at landing sites.
- A particular hot issue was moorings.
- Within fiords, mooring/anchorage locations are hot spots, as well as access points (boat and air access).
- Differences are apparent by fiord complex, reflecting their changing use patterns.
- Levels of activity vary through the day, week and year – therefore the likelihood of seeing other people/boats varies.
- Operators and recreational boaties are reported to be more environmental aware than previously.

7.2 ARE WILDERNESS AND REMOTENESS VALUES BEING IMPACTED?

As one tourism operator put it: *“We’ve definitely seen an increase in activity, but it’s whether the activity has crossed the threshold to risk those wilderness or remote values.”*

There is a continuum with respect to interviewees’ views on this question: some believe that wilderness values of the fiords have already been lost, some saying this is irrevocable; others believe that wilderness values in the fiords remain unaffected by changes in use; others sit in between with the view that it is alright at the moment, but management intervention is needed to prevent future potential loss of wilderness value.

Qualitative responses show their answer depends on the interviewees’ role/interest to some extent, aligning with an Alaskan study (Pomeranz et al. 2015) that found larger tour operators and cruise industry personnel tended to be less purist than small operators:

- Cruise tourism operators: 4 out of 4 say no.
- Tourism/charter cross-over operators: 2 out of 3 say no; 1 says potentially but not yet.
- Charter boat operators: 4 out of 5 say yes; 1 says yes for Milford Sound/Piopiotaahi but not yet for other fiords.
- Other water-based tourism operators: 2 out of 2 say yes.
- Aircraft tourism operators: 1 says no; 2 out of 3 say yes for Milford Sound/Piopiotaahi.
- Commercial fishers: 1 says yes; 1 says yes/no/potentially.
- Other: 3 out of 3 were yes or potentially.

Table 7.1 shows that the dominant reason for believing use was impacting wilderness values was the increased amount of activity. Whilst boat activity was often singled out, commonly comments were couched in terms of increased activity generally (boats, aircraft, people on land).

For example, with respect to levels of activity/busyness:

- *“Pre-Covid you could go a whole charter and not see anyone, whereas now you can’t even go a whole day – and even though a lot of them will have tracking systems (so we can avoid each other) – it is impossible now.”* (operating in Tamatea/Dusky Sound and the Southern fiords).

- Can't 'get lost' in Fiordland now and "just the sheer number of boats in these places ... Dusky is quasi the new Milford Sound while we have the Kiwis looking for places to go."

Table 7.1: Is use impacting wilderness and remoteness values?

Is use impacting wilderness and remoteness values?
Yes – owing to high numbers of people (Milford Sound/Piopiotaahi). Covid has concentrated use in other fiords (detrimental).
Yes – number and frequency of boats, stress from access point congestion (Milford Sound/Piopiotaahi).
Yes – presence of other boats, aircraft, and other groups of people on land (visit sites).
Yes – total increase in activity/more – charter boats, helicopters, people going ashore, large cruise ships.
Yes – no longer can provide a solitude experience.
Yes – too many people (Milford Sound/Piopiotaahi).
Yes – too many people (Milford Sound/Piopiotaahi).
Yes – no remote fiords now. Use increased, more diverse use including fly in/out, spread throughout all fiords. Impacts on fisheries.
Yes – guests know Fiordland is remote so don't expect to see fizz boats and inappropriate behaviour of charter boat passengers ("yahoing, drinking and yelling").
Yes – indirectly through adverse effects on environment (eg. biosecurity incursions, anchoring damage).
Yes and no – more development would be bad but need to let people go there (so need motorised access). Some of the time it is fine, other times not.
Yes (Milford Sound/Piopiotaahi) but not yet elsewhere – need to manage fiords to prevent over-use as seen at Milford Sound/Piopiotaahi.
Yes (period when Milford Sound/Piopiotaahi was cut off by floods) – Doubtful Sound/Patea became too busy, extended busy period with boats/buses (Doubtful Sound/Patea).
Potentially but not yet – no expectation to see no-one else but don't expect to keep bumping into other people either.
Potentially but not yet – may become too many boats (risk of visual/aesthetic pollution).
No – visitor satisfaction remains very high.
No – visitor satisfaction remains high. Enough space (different fiords) to cater for everyone's needs.
No – pre-Covid volumes of visitors in Milford Sound/Piopiotaahi was high but can be managed.
No – fewer boats and helicopters than 20 years ago.
No – don't see many other boats.
No – not too many boats, being managed through consents, improved boatie environmental behaviour. Fiordland is not the Marlborough Sounds.
No – use is regulated so is ok; needs to be regulated to maintain values.

7.3 IMPACT FACTORS – WHAT IS IMPACTING WILDERNESS AND REMOTENESS VALUES AND WHY

This section describes the things that are adversely (and positively) affecting wilderness (including remoteness) in the fiords.

7.3.1 OVERVIEW

Perceptions of what is impacting wilderness value:

- The most common concern is the increasing number of people and boats, described in three ways: (1) vessel numbers and visibility, (2) presence of human structures, (3) crowding at landing sites/attractions.
- Changing visitor patterns (clients flying in/out) is exacerbating aircraft impacts on natural quiet.
- A particular hot issue is the increase in (unconsented) moorings.

Geographic hot spots:

- Geographical pinch points include: anchorages/moorings (except in storms when the presence of other boats can be reassuring); fiord access points (eg. Deep Cove); visitor attractions/landing sites (eg. walks to historic heritage sites); heli-access points (Supper Cove was often given as an example).
- Differences are apparent by fiord complex, which reflect the changing use patterns of those places.
- Temporal spacing is restricted by customer demands (eg. flying in/out is concentrated on certain days to fit with customers' working week).

Temporal differences:

- The degree of intensity of use varies by time of day, day of week and period of the year.
- Recreational boat use is concentrated on weekends and holidays.
- Milford Sound/Piopiotahi has a diurnal pattern with the busy period through the middle of the day and quiet periods at the beginning and close of the day.
- Busyness in Doubtful Sound/Patea and Tamatea/Dusky Sound is focused mainly in the holidays or weekends, although bigger boats that have come down from up north may arrive during the week.
- This all results in temporal variability in seeing boats: *"There are certain times of the year I can go down there [Tamatea/Dusky Sound and the Southern fiords] and not see a boat anywhere ... so it's [high level of use] not happening all the time, but pretty much most of the time over the winter months."*

Behavioural dimensions:

- Better environmental practices (by operators and recreational boaties) was highlighted.
- Conversely, a decline in on-water etiquette was raised by two interviewees.
- Various interviewees identified the need for rules to manage use.

Inter-related factors:

- Knock-on effects are evident – one change begets another, one activity impacts on another.
- While this section separates impact factors, it is their combined effect that impacts upon the water-based wilderness experience of the fiords – they do not operate in isolation.

7.3.2 IMPACT FROM THE PRESENCE OF OTHER BOATS AND PEOPLE

The issue associated with the presence of other people was summed up by a couple of interviewees as the impact upon the wilderness experience:

- *"It's being present whilst other people are and observing other people and activity in close proximity – that's what cracks my moment of really just being in the place."*
- *"[Boats] don't want to be cruising right behind or beside each other because that's going to detract from that wilderness experience for their guests."*
- *"If you are sitting there or have kayakers in the water on a nice calm day and next minute 2 or 3 fizz boats roar past you ... and [your] people say they didn't think there would be any other boats in there."*

Factors influencing this impact upon the wilderness experience (moderating factors) apparent from the interviews are described next. Effects from use upon water-based wilderness experience arises from the interweaving of these various factors – they do not operate in isolation.

As noted in section 3, the inter-connectedness of factors influences perceptions of crowding including factors such as personal characteristics, visit characteristics (eg. first time or repeat visit), site factors, other users, situation (eg. weather, time). One interviewee summed up the inter-connectedness: *"With wilderness value it is [that] what 'lights your fire' might not light mine. And the day makes a difference, the people you are with, what you are drinking ... there are some very special places in Fiordland, but it's how much time you spent there, the people you are with and all the rest of it."*

Vessels are increasing in size and number

Increased vessel size has effects:

- Increased visibility of boats: *"The vessels are huge now. They're not the [old style boat] small, low-profile things on the horizon, they stand tall."*
- Vessels are present in remote fiords for longer – do not need to refuel as often. Conversely, there is a benefit associated with reduced boat movements in/out of land access pinch points.
- Larger motors allow faster travel – boats pass each other more often as they travel further.
- Smaller vessels are impacted more than larger boats (wakes, visual, safety).
- Tender movements put a lot of small boats on the water: *"[They] invade the space."*

Recreational boats have increased in size and number:

- Covid-related dramatic increase in private vessels (purchases) has led to high numbers of boats on some days.
- Larger recreational boats can travel further – and access a larger geographical area.
- Safer than previously – owing to onboard technology and communications.
- Weather is an influence – skippers know they might get stuck and not be able to travel across open seas.

Charter boat trips have increased in number:

- Increased charter vessel activity in the fiords has been dramatic (Covid related). Opinions differ on whether the level of activity will be sustained post-Covid.
- Charter boats and recreational boats are most commonly identified as the issue (not mainstream tourism boats): *"It's not the pure tourist boats that are the issue. It's charter boats in the main and the number of them that's the big thing."*

Increase in air access:

- The shift in the operating model to flying guests in/out has increased aircraft use (aircraft movements replacing boat movements).

Fiord differences:

- Interviewees described the issue for Milford Sound/Piopirotahi as the volume of cruise boat movements.
- In other fiords, the issue was voiced more commonly as vessel visibility (related to various factors including vessel size, location, etc.).

Different types of activity:

- *"You can have one tourist vessel or charter vessel in George Sound but there might be 10-15 small [recreational] boats whizzing around. Now, what does that do to your experience?"*

Large cruise ships attracted comment:

- Overwhelmingly, comments about large cruise ships were negative:
 - *"Was like a slap in the face because you are just cruising along and then wow – it was just something that looked out of place."*
 - *"The biggest impact on that wilderness is when you're sitting there – you've caught your fish, you're eating your lunch, the dolphins are playing around, the penguins are cackling on the shore – and around the corner comes a cruise liner with its black smoke and all these flashes of cameras – it cruises past and you think – what on earth? How did that happen? These are overseas companies that are paying pittance to do what they're doing. Even if the price was at a point that Environment Southland could tax them enormously, it's still a big risk."*
- Some interviewees commented that they provide a perspective of scale – next to a cruise ship, a charter boat is tiny; large cruise ships are dwarfed in the fiords.
- People don't like the 'smog' that hangs about in still conditions (particularly in Milford Sound/Piopirotahi).

- Some interviewees believed they had a place in Fiordland as long as they were managed (eg. limit them to specific fiords) and a few said that they pass through quickly – they’re *“in and out and gone”*.
- One charter operator gave their visitors’ views: *“Most of our clients who see a cruise ship want to complain – they have seen them in different parts of the world that are bombarded by cruise ships”*.
- Another interviewee made the point that it is alright to see one cruise ship (gives perspective of size) but not to see three a day.

How many is too many:

- It wasn’t the purpose of this study to investigate carrying capacity – but as the quote above illustrates, some interviewees indicated that there was a tipping point when the number of boat sightings became unacceptable to them. This was not examined further.

Effect of own boat group:

- One interviewee raised the fact that clients onboard are part of a social group: *“And the people on the boat as well and it can be a completely different experience you know ... but even on the charter boat we have some trips that are just horrible because you have one or two people that are just a pain ... and you’ll do another trip and the people just get on so well and you are doing exactly the same thing on each trip.”*

Non-natural noise is impacting on natural quiet

Impacts on natural quiet from non-natural noise most commonly was raised in the context of aircraft:

- Helicopter noise varies by place and by season.
- A wide range of sources of air traffic was apparent – conservation work, crayfish industry, charter/tourism passenger change-overs.
- Milford Sound/Piopiotaahi was referred to as the busiest fiord for aircraft – and that they didn’t want other fiords to get that much air traffic.
- Guest change-over flights can be concentrated geographically and temporally (driven by guests’ working week – therefore it is hard to shift fly in/out days). This results in high numbers of flights converging on a single day at one site:
 - *“When it is a busy day – like coming into Supper Cove there could be three charter boats there and then it’s just a hive of activity – it’s like an airport because there is one pad there and some of us have helidecks on our vessels and it’s just continuous in and out of helicopters ... and then everyone disperses from there – there are definitely comments on that.”*
 - *“Sometimes you can have 20 helicopter movements on one day when you’re changing out ... it’s trying to structure your change overs where you’re not exposing our guests to downtown Auckland kind of thing.”*
- A sense of safety was mentioned as a benefit – that some guests like knowing helicopters are around in case of medical emergencies.
- Impact depends on type of activity being undertaken: *“We will go to watch them unload crays and chopper away – there’s nothing like seeing the big chopper come and land on the Uni [a specific barge] or on the barges – sometimes it is awesome that it’s there, but if you are kayaking up a river and it flies down the valley you are not going to appreciate it so much.”*
- One person pointed out the hypocrisy of criticising air access when using it themselves – *“Some of those same people that might be complaining about areas where they go not being remote – how do they get in? They contradict themselves ... they will use a chopper to get in to places.”*
- One charter boat operator differentiated between different types of aircraft: aeroplanes are noisy (referred to noisy Cessnas) and that noise lasts longer – *“you can hear an aeroplane come for 10 minutes before you see it and 10 minutes after it’s gone”* – commenting that helicopters are a dull thud and their noise is quickly gone, and that the floatplane flies high so has less impact.
- The same operator said: *“Some people like to see helicopters coming in and, for the ones on it, it’s a new experience for them. I’ve never had anyone complain about the helicopters – even if there is one coming down Crooked Arm, they are out with their cameras taking photos of it alongside the mountains.”*

While the vast majority of comments about aircraft were negative, a small number took a positive perspective with respect to noise from aircraft, in the context that they are required for access into the fiords. A small number of tourism (non-aircraft) operators said:

- *“People know that a helicopter makes noise [so they expect it] and people like seeing helicopters [especially when they are taking the fish out] – it’s the story of the place – it’s so remote that we have to use helicopters and it’s actually an attraction ... you can’t then flip it around and think that they are noisy and that’s somehow an issue – with who?”*
- *“For sure – the only way you can get in there is over the hill, or by helicopter, or float plane and people just accept that that’s just the mode of transport, and because it is such wilderness, they accept that this is actually okay – it’s pretty low impact.”*
- *“I guess that pure wilderness is no boats and no helicopters but then how do you get there to experience the wilderness? ... so even to go and experience a wilderness experience you still have to shatter the wilderness.”*

To those on the water, the noise of **boat motors** did not appear to be a significant issue. This might be explained by the comments that:

- *“If your boat’s motor is going, you can’t hear other boats.”*
- *“Some boats are noisier than others, but you generally don’t hear a boat unless it is within 100 metres ... and when you are inside a boat ... you never hear anything.”*

Generators were mentioned by a couple of interviewees:

- *Fiordland has it [natural quiet] “but if you are on a boat you will have a generator going or something – it’s always been a bugbear of mine ... you would spend millions of dollars trying to make Fiordland a better place for conservation (to bring back the birds) and then you don’t hear them because the generator is going.”*

Guests’ behaviour on other boats was raised by three charter operators:

- *“The biggest noise factor in Doubtful is at night time – it’s all those fizz boats at night time with their stereos going – and they are drinking and making a hell of a noise. I’ve had to move out quite a few times – you have to go and find somewhere else in the dark.”*
- *“That’s what they [clients] like [quiet experience] – that’s what they come for. But with so many fizz boats in Doubtful ... in some cases they are out with their guns firing bullets around when they have too many drinks – some nights it’s not easy to find somewhere else. I haven’t noticed that in Dusky Sound – it hasn’t happened down there yet. But it won’t be long [before it does], once all these wee boats move down there, then it will happen.”*

Boat commentary and radio noise was mentioned by a handful of people:

- *Boat commentary can be an issue “especially when we are hearing it in English, Mandarin and German – this is the incessant burble of white noise that no one understands but we have to listen to it anyway” (relates to Milford Sound/Piopiotahi).*
- *The increase in radio noise in the Southern fiords was mentioned by one charter operator: “We would be in Doubtful and there would be always chit chatter on the radio and then we went out and it was quiet ... whereas now – down and around Breaksea, Dusky, Chalky, Pressie – it’s now continuous radio chatter.”*

Interviewees raised factors that moderate noise impact from non-natural sources, including what’s happening on your own boat (eg. its own motor) and the ambient sound of nature (eg. stormy or windy conditions).

The short-lived nature of noise impact was the most commonly mentioned moderating factor (mostly raised by aircraft operators although not exclusively):

- *“The thing is that even in a helicopter, whether it’s a load of fish, or people or deer, it’s only there for a few minutes and then it’s gone.”*
- *“No matter how these people are getting there and what they are there for – once they are there, everything is switched off and the place returns to its natural quiet ... so it’s a transport impact.”*

- Once the helicopter goes you are completely by yourself: *“that is remote, that is wilderness.”*

The issue varies by fiord – with Milford Sound/Piopiotaahi singled out:

- Noise from aircraft in Milford Sound/Piopiotaahi was described as a problem by many interviewees.
- From a Milford Sound/Piopiotaahi based tourism operator: *“I have to stop my own commentary when planes are taking off in Milford.”*
- *“The noise is the small Cessna taking off – they are far worse than the helicopters.”*
- *“It’s like Hall Arm at Doubtful – the ‘sound of silence’ but you can’t go there except in a kayak and experience that sound of silence, but then a helicopter can go over the top [and ruin that].”*

A couple of people highlighted that it varied by time of day (referencing Milford Sound/Piopiotaahi):

- *“At certain times of the day Milford does [have natural quiet] – you go early morning (pre-6am) it is light, and it is just the birds and then it starts, and it is pretty incessant. Not now owing to Covid, but it has been.”*

Number and use of human structures is impacting on wilderness values

As noted earlier, interviewees commonly defined wilderness by the absence of permanent human infrastructure. It follows that the presence of structures impacts upon their experience and this was described by interviewees. See Figure 7.1.

A theme about the impact of structures was their number and spread throughout the fiords:

- *“Gosh, it’s hard to actually find a wilderness spot in the fiords because there’s all these structures.”*

The increase in usage of structures was commented upon:

- Previous occasional use of barges has changed to a daily *“hive of activity”*.
- *“Everybody doesn’t need their own chopper pad to chopper their own clients in and out and structures here, there and everywhere and even the moorings now [are widespread].”*

There was a clear difference (mentioned by many people) between contemporary structures and historic artefacts and structures: clients like to hear the stories and see the historic heritage, both natural and human history (Māori and European):

- *“The historic remnants in the south is history and that’s what sells Dusky – Captain Cook’s first house and that ... the history of the place sells it.”*
- *“The structure out there at Secretary Island, the Blanket Bay ‘Hotel’, has been there since the 1950s and people don’t seem to mind it – they quite enjoy looking at things like that because it’s the only one in Doubtful Sound (from when you leave Deep Cove) – Breaksea Sound you have the Uni [barge] and people like to go and have a look – they don’t see it as an intrusion into Fiordland – it’s sort of part of it.”*
- *“It’s also the story telling of other travellers before you – it’s history, it’s context, and people expect a mooring and if they see one of the fishermen’s barges around the corner or the Uni [barge] parked up, it is more about being inquisitive – ‘what is that all about?’ – it’s a relic of previous activity, whereas if there are boats all around the place you, they don’t really want to know what they are all doing.”*

This interest appears to extend to tourists seeing the crayfishing industry at work:

- *“The little cray barges at the Pinch in Dusky ... the clients love watching the chopper coming in and winching the crayfish out – that’s a little bit of history of the area.”*

Some people commented on run-down nature of structures. Another said the opposite: *“[there is] a big flash structure and it doesn’t belong there.”*

Acknowledgement that structures facilitate access was prevalent in comments about infrastructure, and that boats quickly move away from these structures once underway. Their importance for safety purposes was raised by a few.

One charter boat operator stated his belief that the current extent of structures was acceptable (in Doubtful Sound/Patea): *“You always have to have a starting point – what’s in Doubtful Sound I think is very minimal ... it’s not overdone – as long as nothing else goes in.”*

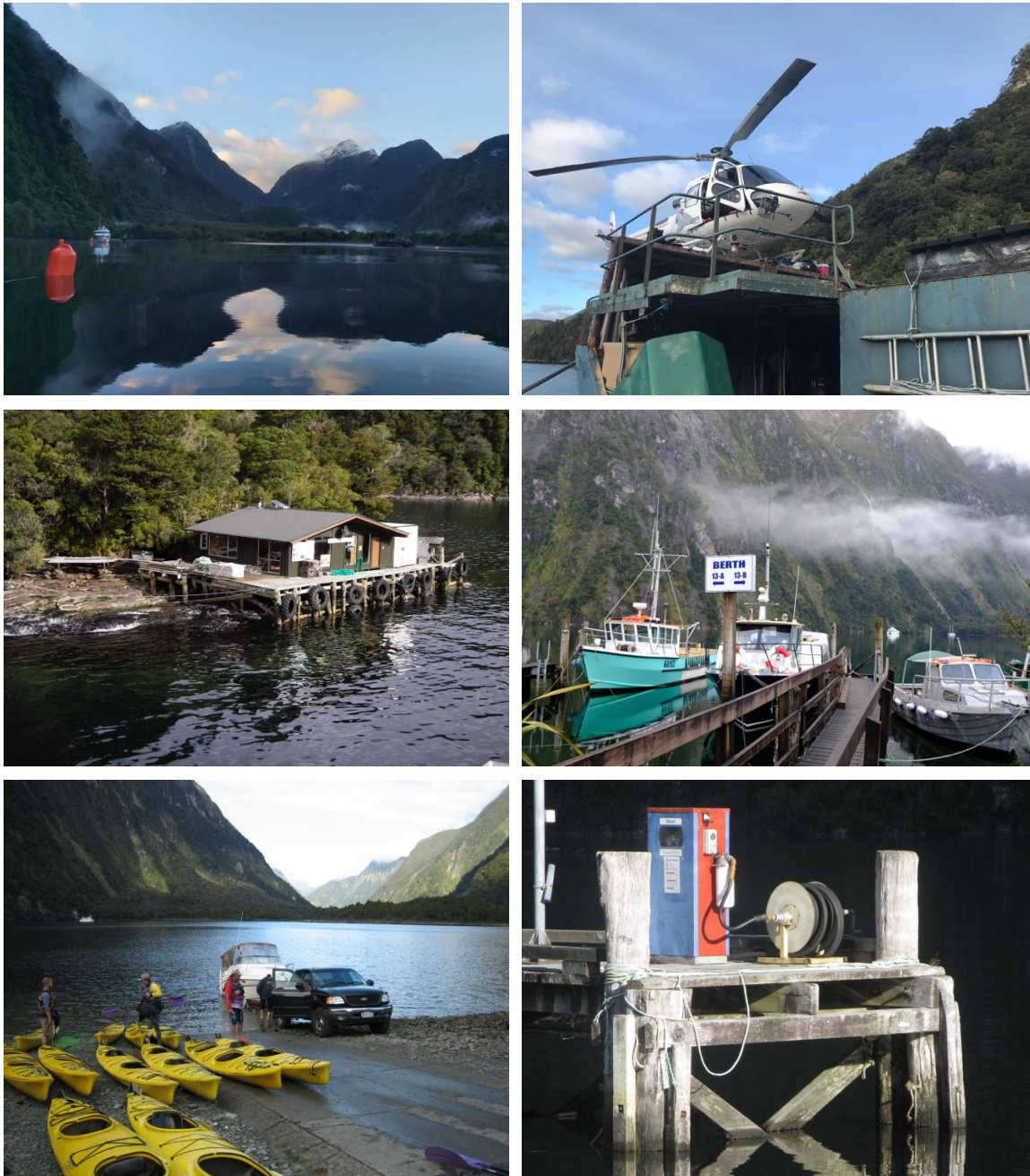


Figure 7.1: Photos showing some of the types of structures found within the fiords

Photo credits (clockwise from top right): S. Logie, Kerri-Anne Edge Hill, Jude Wilson, Kay Booth, Kay Booth, Environment Southland

Moorings are a hot issue

Many interviewees believe the issue of non-consented moorings needs management/policy attention:

- One interviewee said that non-consented moorings is the biggest challenge on the Fiordland coast.
- The belief was expressed that if there’s going to be more moorings, then control on the number and location is required.

- Expansion in the number of moorings was described by a couple of people as a ‘gold rush’.

Describing the issue:

- There are very few areas that vessels can safely moor or anchor within the fiords.
- This is exacerbated by larger vessels which need bigger swing room – there are only certain moorings they can use. Those moorings then become busier, resulting in a reduced experience of isolation.
- Moorings are now taking up the safe anchorage spots, when moorings could be in deeper water, leaving more sheltered spots for anchoring. This was seen as a health and safety issue – pushing vessels off their safe anchorages into deeper less-protected water.
- *“It’s running away – with all the moorings, there’s nowhere safe to anchor – therefore we may need to apply for a mooring in order to operate safely.”*
- Skippers don’t know whether a particular mooring is safe because they don’t know what it is made up of – they can’t trust it, and don’t know what boat type/size it was designed for.
- This is becoming a major problem for operators.

Opportunity to leave vessel on moorings permanently and fly in/out:

- A couple of people expressed the view that – *“they put moorings in and then permanently leave their boat there ... there is a port at Milford, at Riverton, at Bluff and there’s a harbour at Deep Cove and that’s where boats need to be kept – not anywhere else – everywhere else is meant to be empty and not have boats based there”.*

Equity was raised as an issue associated with exclusive use of moorings:

- Described as people putting in a mooring and then applying for a consent seeking exclusive use.
- That people claimed ownership of a mooring and bullied other people off it: *“an exclusive ownership thing.”*
- Some interviewees believed that any mooring should be available for anyone to use.

Geographical pinch points:

- The issue is especially prevalent in Tamatea/Dusky Sound: there may be 5-6 moorings in one cove.
- Concern was expressed that visiting boaties would not be able to find space (safe harbour) at Deepwater Basin because of the number of moorings being put down by commercial operators.

Impacts and benefits:

- Impact – visually impact on some peoples’ wilderness values (permanent human infrastructure).
- Benefit – protects the environment (seabed floor) from anchoring damage.
- Benefit – for inexperienced boaties who may be less competent at anchoring.

Land-based sites/attractions are a crowding hot spot

Several tourism and charter operators in Tamatea/Dusky Sound and the Southern fiords commented that crowding at landings sites had the greatest impact on their visitors. The presence of other groups clashes with visitor expectations.

One charter operator described this impact as the size of the group: the issue was large numbers of people onshore. Another charter operator described the impact from signs of other people: *“Not seeing others and not seeing a sign of others ... going on walks like those historic sites – yes, they are formed tracks but more like trails ... right now those are mud pits from all the foot traffic – those sorts of things make a big difference.”*

The same operator (and one other) believes that **changing etiquette** amongst boaties is exacerbating the problem (ie. boaties used to avoid a site if someone was already there).

Some activities are perceived as inappropriate

Conflict was apparent between some activities and not others. For example, for many people the interaction with fishermen adds to the Fiordland experience, whilst seeing other recreation/tourist boats or aircraft does not.

Commercial boats provide the opportunity to experience Fiordland:

- Commercial boat activity *per se* was not viewed as inappropriate by any interviewee (many being commercial operators themselves). This centred around the opportunity they offer people to experience wilderness plus the opportunity for education of their clients.
- Some discussed commercialisation as a positive; their view was that commercial boats follow the rules, unlike some recreational boaties.
- Also that and it is easier to protect the fiords via commercial operations as they can be managed through rules. In comparison, private recreational boaties are not.

In accordance with research from elsewhere, immersive and non-extractive activities were viewed more positively by some people:

- Increasing numbers (boats/people) are more acceptable if trips are scenic (not extractive) although fishing was seen as still important.
- *"[Activity is okay] so long as the people who are coming in are involved in the environment – rather than just being shown the environment."*
- Immersive activities (eg. kayaking) allow people to check out the wilderness; that's how it should be.
- One person described as inappropriate a trip that: *"spins them around showing the place and gets them out the door as fast as they can ... they have missed the point."*

Some activities are not appropriate (conflicted with a few interviewees' perceptions of their experience of the fiords):

- Specific inappropriate activities were mentioned by a few – jet boating and jet skiing within the fiords: *"High speed watercraft and even as simple as windsurfing – when you do see people water skiing and wind surfing you realise it is not as remote as it used to be – people are out just gallivanting around the place."*
- *"Thrill seeking is probably not appropriate whereas nature observing and scenic viewing is appropriate. So you wouldn't have like a jet ski over there [operating from a vessel] – nice quiet sea kayaks would be more appropriate."*
- Several people mentioned day trips (where guests fly in/out) as not appropriate for the fiords other than Milford Sound/Piopiotahi: *"You can't tell me you are getting true wilderness in there in a half a day – and you get crayfish and blue cod and paua and then you fly back out – that's just taking something from it."*

Large cruise ships drew strong but varied comments:

- That they are: inappropriate and high risk in Fiordland; appropriate in some fiords but not others; alright in small numbers but too many had been allowed in; okay in the fiords (a small number of interviewees); and useful to provide scale comparison within the landscape.

Traditional Fiordland activities (including crayfishing) are acceptable and of interest to clients:

- *"No-one minds the fishing boats – actually they like to see what's happening and we quite often go and watch them lift their pots and a lot of people like that sort of thing. The fishermen belong there – they have been there for years – no-one ever complains about the fishermen."*
- *"[Clients] love seeing the old crayfish boat pull up alongside them and have a yarn and chuck them some crayfish – that's what it's about, isn't it – good old Kiwi hospitality."*

High-end boats are less acceptable:

- A couple of interviewees mentioned that high-end boats are not appropriate in Fiordland.
- One charter operator commented that Fiordland was becoming a playground for the wealthy: *"I saw a boat come in that was registered in the Cayman Islands and they arrived with 2 helicopters on the deck, they have fizz boats – they didn't use their jet skis which is good – but they have their wee boats in the water ... their helicopters fly in and out – some of them do 3 or 4 trips a day – they were in there parked up."*

- Another tourism operator said: “I’m all for these smaller boats rather than the Disneyland boats that I don’t think are welcome in places like Fiordland ... that’s not our ethos – not what we are all about.”

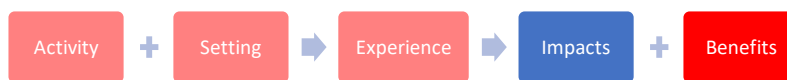
Comments on fisheries

While recreation and tourism effects upon fish and their habitat is beyond the scope of this study, fishing was clearly a large part of many people’s fiord experience. Reference to fishing was a common way to differentiate types of charter trips – ie. fishing charters and non-fishing charters (sometimes called eco- or experience-based). Several interviewees commented that “more and more charter trips are sold as the Fiordland experience rather than a fishing experience.”

Other comments on the fisheries included:

- Concerns about commercial operators who take a fish/crayfish ‘for the table’ to feed guests, because this is outside the rules (it is taking place within Fiordland’s internal waters where commercial fishing is prohibited).
- Observations that visitors express surprise at the poor state of Fiordland’s fish stocks: “A lot of the people we take in there think that the likes of Doubtful is extremely remote, and the fish life should be prolific, and they get there and there is no blue cod or very few fish and so ... yeah ... they can’t understand that.”
- One operator commented that while fisheries management is outside the remit of ES, nonetheless ES policy affected the fisheries indirectly, so it needed careful consideration by ES.

8 COMMERCIAL OPERATORS AND THEIR CLIENTS



This section describes aspects of the relationship between tourism and charter operators, their clients and the fiord setting. The focus is perceived benefits, including:

- The role of wilderness and remoteness values with respect to visitors’ motivations and satisfaction (associated with their perceptions of wilderness) as reported by tourism/charter operators.
- Actions taken by tourism/charter operators to mediate clients’ perceptions of wilderness in order to maximise their experience.
- Identification of broader benefits (to the setting) associated with tourism and charter activity.

Information in this section is drawn from interviews.

8.1 SUMMARY

- Tourism and charter operators described their clients’ reasons for visiting Fiordland, their views about the levels of use of the fiords, and their perceptions of wilderness (especially those of large cruise ship passengers). These are detailed below.
- Tourism/charter operators moderate their clients’ experience of wilderness. Most common is avoidance of other boats in order to minimise encounters, interpretation and education.
- Tourism and charter operators exhibit a strong attachment to the fiords and describe the sector as become more environmentally friendly (although a couple of interviewees suggest that the informal on-water code of conduct may be weakening). Some tourism/charter companies support conservation projects and many market the fiords for their wilderness values (or fishing).

8.2 INDICATION OF VISITORS' PERCEPTIONS

Given visitors were not part of this study, tourism and charter operators were asked about their clients' perceptions of wilderness and remoteness values, and related questions. This section is not a complete description of fiord visitors' perceptions; it should be read as context only. It was common for operators to talk about their clients' views for other questions as well – so some visitor perceptions are given in other parts of this report.

8.2.1 VISITOR MOTIVATIONS

Tourism and charter boat operators were asked about their clients' motivation to visit Fiordland:

- Operators commonly used the term 'bucket list' to describe visitors' reasons for going to Fiordland.
- Motivations for multi-day trips in Tamatea/Dusky Sound and the Southern fiords were described by one tourism operator as being about three things: bucket list, New Zealand history, and revisiting places from their youth.
- Other motivations for visiting the fiords that were mentioned included: scenic beauty, wilderness, remoteness (difficult to get to, away from your cell phone), bountiful, Fiordland's mystique, the last frontier.
- Visitors used to come to take out lots of fish: *"In the early days, visitors were coming to fish and fill up chilly bins. Now they are coming for completely different reasons."*
- One tourism operator said: *"Our customers pay a real premium but they see it as value. Part of that value is because they're going to somewhere where very few people go."*
- *"The feedback is that their expectations are more than met – they didn't realise how remote and isolated and huge the place is – they all say they are blown away by the scale of the place – the remoteness."* (charter operating between Tamatea/Dusky Sound and the Southern fiords).

8.2.2 VISITOR PERCEPTIONS OF BUSYNESS (BOATS, AIRCRAFT)

Operators reported mixed views on the impact of use on visitors' experience:

- *"It's Fiordland, it's a heritage area, and they come in and go 'wow – it's busier than I thought it would be' and 100% that impacts on perceptions of wilderness and remoteness."*
- *"[People] are blown away just how remote and wilderness and quiet it is and ... since Covid has hit and the charter boats have got busier ... I have never had one person say that it was busy. That tells me they are still getting a wilderness and remoteness experience and that tells me that the boats are all working as a team together to give that remote experience."*

A couple of charter boat operators commented on the difference for regular (repeat) visitors. While this was not explicitly linked to greater impact upon their sense of wilderness, the research literature suggests that it is more likely for repeat visitors (this point was not pursued in interviews):

- *"People do [comment on other boats] but not all the time – the ones that come down regularly don't because they are used to it, but the new people do ... they might say that they didn't expect there to be many people down there."*
- *"Clients are often repeat visitors and have been coming for years – they notice it is getting busier."*

With reference to Milford Sound/Piopiotahi:

- *"Customers comment on the noise with the helicopters and the planes ... I mean that's relentless – it's literally one plane after another on a sunny day – all day long. It affects the ability to switch off. When we have a foggy day the quiet is beautiful ... then we feel really remote."*
- *"Visitors comment sometimes that there are a lot of boats or [large] cruise ships – a steady stream of boats coming past and [causing difficulty with] navigation – dealing with those wakes, lining up at the waterfalls and all sorts."*

8.2.3 LARGE CRUISE SHIP PASSENGERS' PERCEPTIONS OF WILDERNESS

One interviewee talked about large cruise ship passengers' perceptions of Fiordland's wilderness value:

- *“One of the things that often gets said – like very often – by passengers [of large cruise ships] is that they ask how many people live here in Fiordland ... they say that when they go around a corner they don’t see a fishing village or a cruise ship terminal like they do in Alaska where it’s really over-commercialised. And they say ‘it’s wonderful ... this is a proper wilderness’ because there is nobody here and they do like that. In fact sometimes, when we occasionally meet another cruise ship coming the other way, you don’t get that ‘oh wow isn’t this fantastic, let’s all wave’ – but instead there’s almost a resentment ... that there’s another ship in ‘our fiord’.”*
- *“Those on the expedition ships tend to be more of that mindset [aware of their own impacts] but even on some of the biggest cruise ships ... they’ll say ‘this is great because it’s a wilderness and there’s nobody here’ and ‘I wonder really if we should be here – I’m surprised we are allowed in here’.”*
- *“I really think the wilderness thing is a big pull for the passengers and the captains will say that the feedback they get is that Fiordland is a proper wilderness, not like Alaska’s, not like the Norwegian fiords – they might be bigger, but they have been exploited to the extent that they are no longer a wilderness.”*

8.3 OPERATORS’ MANAGEMENT OF THEIR CLIENTS’ EXPERIENCE

Tourism and charter operators were asked whether they did anything in their operation to minimise negative impacts on their clients. Tourism operators may act as a moderating influence upon the visitors’ experience (see section 3.2). Mediation from tourism operators/hosts onboard was evident, with operators describing how they avoid other boats, interpret the area and activities for their clients, and educate them. These actions are likely to positively influence visitors’ perceptions of wilderness.

By far, the most frequent action taken was seeking to avoid other boats (and aircraft):

- *“We definitely try to work in with other operators so we can give our people that wilderness experience, but if the weather is bad you can end up with 3 or 4 boats in an anchorage and you just have to accept that because it’s safety – it’s not that we want to be beside someone else with a generator going or lights on, but if it’s the only safe place to be ... that’s the one thing about Fiordland – it has always had big storms, but we have been getting some rippers lately with global warming – they are quite short but pretty voracious.”*
- *“When we’re operating, you do your damndest to stay away from other people. You still want to protect that wilderness aspect [of the visitor experience] but it just gets harder and harder.”*
- *“There’s no way I’ll have the [boat name] anywhere near a helipad in that whole week ... I stay away from them because that would detract from their [clients’] trip.”*
- A formalised approach has been developed for cruise boats at Milford Sound/Piopiotahi – a one-way route to keep boats separate.

The increasing difficulty of avoiding other boats was a theme in some charter operators’ responses, especially those working in Tamatea/Dusky Sound and the Southern fiords: *“It’s got harder and harder [to avoid other boats]”* and *“It’s quite hard to work out where there is no one”*. This view was not universally held – some commented that they had no problem finding anchorages/moorings alone – perhaps relating to their route.

One way that operators moderate their clients’ perceptions is through **interpretation and education**. This was a common theme:

- One charter operator talked about how they saw their role. They were driven by the desire to *“connect people to the place, to give back and impart understanding.”*

Educate about appropriate environmental behaviour

- *“When people come, they don’t really think about their impact on the place. I think we as operators have an awesome opportunity to turn that around.”*
- *“It’s a responsibility of the charter boat operator as well – to teach people – so if they do come back with their own boat they realise that they don’t need to take 50 lobsters off this rock.”*

Foster conservation

- *“On the whole I think the more people that can experience it with the right person teaching them about it on the way in and out and roundabout is a really good thing, because how else are we going to get a generation of people to come along and support it and look after it for the future?”*
- *“[We] give some interpretation on the area ... from an environmental point of view as well ,and people want to know about the predator free islands, and those sorts of things, and the good work that’s being done in Fiordland. And that’s how the word gets around and people get the grass out of their pockets to do something good.”*

Explain what people see in order to increase their understanding

- This was commonly mentioned, with reference to things such: Marine Reserves, predator free islands, crayfishing pots within the fiords, use of generators, what each boat is doing, helicopters associated with conservation activity.
- *“That [explanation] makes it more acceptable to guests.”*

One charter operator described how he has **shifted to less busy fiords** (displacement): *“Breaksea was my favourite – and now ... I’ve been pushing a lot more in the Northern fiords – they are harder to work with the weather, but if you look at my returns now, I am doing more and more in the Northern fiords and even Doubtful now because no-one is in there because they have all gone to Dusky and Doubtful Sound is actually real quiet at the moment.”*

Temporal scheduling is also used. This was mentioned for Milford Sound/Piopirotahi – running trips early morning and late afternoon (to minimise impacts from other boats and aircraft). Another Milford Sound/Piopirotahi tourism operator commented that there is only so much you can do to influence tourists’ timetables.

Technology improvements are helping:

- *“We all try and keep away from each other and with AIS [automatic identification system] you can talk to each other and know where they are.”*
- One boat doesn’t need to run a generator – *“at night, people can go out on deck and it’s silent and they can hear bird song.”*

But **weather conditions** override everything:

- *“In certain weather conditions, everyone will head up to Precipice Cove in Doubtful or to Cascade Cove in Dusky, and that’s just common sense. And it’s usually pretty obvious to the customers. Visitors are just grateful to be somewhere safe [so other boats don’t bother them at those times].”*

8.4 OPERATORS’ BEHAVIOUR AND APPROACH

Information about the operators themselves and their style of operating was sometimes provided during interviews, indicating that changes are occurring.

8.4.1 CONNECTION TO PLACE IS STRONGLY FELT

Place attachment was evident from all interviews with tourism and charter operators:

- Amongst tourism and charter boat operators there was a sense of the importance of having a strong Fiordland connection and understanding of the place – this was seen as desirable and authentic for operators: *“What I don’t want to see in 30 years’ time is 50 boats cruising around trying to sell a story they know nothing about.”*
- Changes in ownership concerns some people: *“We have seen a big change in ownership of companies ... it used to be an operator who had been here for 25 years and now they have never been to Fiordland.”*
- Perception that there are people involved in the industry who *“don’t really have the passion or love for the people and the environment, and they only look at it as a financial thing.”*

- While others commented that newer owners of charter vessels are ‘more green’ (seen as a good thing).
- The belief was expressed that strong place attachment results in better behaviour: *“The recreational boaters that only go once a year might not look after the place as well as the regulars who have ownership for the place.”*

8.4.2 OPERATORS/BOATIES’ BEHAVIOUR HAS BECOME MORE ENVIRONMENTALLY FRIENDLY

Improved environmental outlook and practice amongst commercial boaties was a common theme of interviews:

- *“There is no doubt that everyone’s perspective has changed over the years and they are looking after the environment better and doing things better.”*
- *“Many operators are much more environmentally conscious in the last few years than they were in the past. I think a lot of the operators need to be given credit for some of the efforts they’re making.”*
- *“People definitely have a better understanding of the wilderness side of it and the remoteness side of it and looking after the environment better ... it’s not like the old days with people going in on fishing charters to rape and pillage the place – you don’t see that anymore. And if a charter boat was playing up they would get a rark-up from the opposition. And the fishermen keep an eye on everyone – it’s a small world out there – a big place but a small world.”*

8.4.3 CODE OF CONDUCT ON THE WATER MAY BE DISAPPEARING

One charter boat operator believes that *“the code of conduct to let others have their space is disappearing – it used to be if someone is in the bay, you see them, and you veer off – if someone is on land walking, you go there another day. Whereas now it’s becoming more and more normal that people will just anchor on top of where you are and put people on shore where you are, whether they have concessions to guide or not.”*

8.4.4 SUPPORT FOR CONSERVATION

Many operators financially support conservation activities, with some companies running conservation projects that involve their clients:

- *“Some charters involve visitors in conservation as well – [talks about a company’s project] – so maybe if their conservation values aren’t that high when they go to Fiordland after [their trip] they are a bit higher.”*

8.4.5 MARKETING WILDERNESS

Several interviewees raised that Fiordland charter/tourism cruises use wilderness rhetoric and images in their marketing. A small number of operators were critical about this – that operators market the fiords based on *“wilderness and the serenity of the place and actually half of them are destroying it ... especially Dusky.”*

A brief review of marketing material shows it is dominated by the scenic beauty of the wilderness and a promise of natural quiet (especially Doubtful Sound/Patea where one operator runs trips that highlight the ‘Sound of Silence’ – they turn off their boat’s motor in Hall Arm).

9 IMPLICATIONS FOR INCREASING BOAT ACTIVITY

The purpose of this section is to address Study Objective 3 – Discuss how increasing commercial boat activity may impact on wilderness and remoteness values. It does this by summarising the findings from this study with respect to each Study Objective:

- Summarising the wilderness values of the fiords (study objective 1).
- Outlining how recreation/tourism boat activity interacts with, and impacts on, these values (study objective 2).

- Drawing conclusions about what increased commercial boat activity may mean for wilderness values, including remoteness (study objective 3).
- Setting out relevant considerations for management decisions about these matters.

9.1 WILDERNESS VALUE OF THE FIORDS

This section summarises findings from this study with respect to Objective 1: Describe wilderness and remoteness values for each of the five fiord complexes.

The nature of wilderness value for the fiords is broadly agreed by the 27 people interviewed for this study:

- Wilderness value is important (highly valued): many people (but not all) go into the fiords seeking a wilderness experience, and tourism operators market their trips on wilderness.
- Wilderness value is largely defined by the absence of human presence and modification (boats, structures, people at attractions/landing points).
- Remoteness is a key element of wilderness.
- Elements that comprise the fiords' wilderness value include remoteness, naturalness, minimal human presence, natural quiet, aesthetic appreciation, conservation-related activity, personal experience and scale (both the size of Fiordland and the landform of the fiords themselves).
- Wilderness in the fiords includes the whole of the landscape – both the land and the water.
- Scenery/aesthetic appreciation is major motivation for visitors, putting visual amenity at the heart of the fiord experience.
- Natural quiet (the sounds of nature) is also central to the fiord experience, with some trips marketed around the 'sound of silence'.

Insight into the significance of the fiords is gained from interviewees' views:

- Fiordland was considered unique by all interviewees (many emphatically).
- International comparisons were made that set Fiordland apart from other places around the world (eg. Patagonia, Norway).
- Differences (what set Fiordland waters apart) included:
 - No-one lives there – the absence of settlements and ports.
 - Scale – the size of Fiordland and the landform of the fiords.
 - Untouched and unchanged naturalness.
 - Distinctive underwater ecosystem.
 - Spectacular scenic beauty.
 - Opportunity to go there and experience wilderness and remoteness.
- At a national level, Fiordland is one of the few places in New Zealand that provides a setting for multi-day cruises.
- While this study did not examine the significance of the fiords *per se*, this analysis suggests that Fiordland waters may hold international significance for their wilderness value with commercial tourism/charter operators.

Fiordland waters are likely to hold non-use values:

- This study has focused on experiential values – values associated with visiting the fiords for recreation/tourism activity.
- Research suggests that non-use values are becoming increasingly important: eg. existence value (benefit gained from simply knowing that something exists), cultural value (indigenous people's association with the landscape) and values associated with a virtual experience.
- It is highly likely that the fiords are also valued for non-use reasons, and potentially the presence and behaviour of people in the fiords might impact any such non-use values (noting that these matters were not investigated in this study).

Findings reported in the recreation and tourism research literature accord with the wilderness value and experience of the fiords in many ways:

Recreation/tourism experience and crowding (impact)

- **Visitor experience:** The visual and auditory experience of nature (aesthetic appreciation/scenic beauty and natural quiet) are important aspects of the visitor's fiord experience.
- **Wilderness and remoteness values:** Most descriptions of wilderness and remoteness values are focused on natural environments with little evidence of human modification. This contrasts with the Fiordland waters where motorised transport is required for access (most often provided by commercial operators) and supporting infrastructure exists to facilitate use of the fiords. These characteristics also apply to wilderness marine environments elsewhere and explains why the large body of crowding research that is terrestrial based cannot be transferred to marine environments.
- **Perceptions and values of wilderness differ by types of people, making it difficult to generalise:** Differences in how interviewees perceived wilderness and different elements of it was evident with respect to the fiords. The research literature suggests that these differences are also relevant with respect to the visitor experience.
- **Last Settler Syndrome:** While a couple of interviewees commented that repeat visitors noticed the increase in recreation/tourism activity, the effect upon their perceptions of impact was not examined.
- **Place attachment:** Operators held this as an important attribute for all Fiordland operators – having a strong attachment to Fiordland.
- **Expectancy Theory:** At its heart, the erosion of wilderness values is about the mismatch of people's expectations of wilderness in the fiords and their perception of their actual experience, resulting in dissatisfaction.
- **Crowding:** Conclusions about the impacts upon boat-based fiord users from boat activity is constrained by a research gap. There is little research focused on the impact of perceived crowding upon the experiences of visitors on board boats in coastal and marine wilderness environments. A wealth of research discusses aspects of such impacts, but ultimately little is available to directly guide decision-makers.
- **Conflict:** Apparent between some activities and not others, eg. for many people, interaction with fishermen adds to the Fiordland experience, whilst seeing other boats or aircraft does not.
- **Transient impacts:** With respect to boat and noise impacts, some interviewees commented on the short period of visibility (boats) and noise (aircraft). No conclusions can be drawn about the impact of short duration intrusions on the experience compared with long duration intrusions. Given that most research on visitor impacts has used images (rather than personal recall or views of real scenes), this would suggest that transient impacts would be particularly difficult to measure.
- **Moderating factors:** Fiordland tourism and charter operators moderate their clients experience through timing/route scheduling to minimise encounters, telling people what to expect (managing expectations) and giving background information (so people understand why something is as it is).
- **Inter-connectedness of factors influencing perceptions of crowding:** Personal characteristics, visit characteristics (eg. first time or repeat visit), site factors, other users, situation (eg. weather, time) etc. Given this study did not collect data from recreationists/tourists, it is likely that some relevant factors will not have been identified. In other words, different factors may have been elicited from visitors.
- **In summary:** The complexity associated with all of the factors listed above makes it difficult to measure and understand boat-based recreation and tourism activity in a place that is sought after for its wilderness qualities but requires commercial, motorised access and infrastructure to facilitate recreation and tourism activity. In Fiordland, the nature of the setting (large size, growing encounters with other boats and aircraft, and important situational factors like weather) adds additional challenges. The dearth of research around this topic no doubt reflects this complexity.

Carrying capacity

- **Different results for the two components of carrying capacity were found:** Interviewees' description of the fiords' wilderness value aligned (the carrying capacity descriptive component) but different judgements about acceptability of the current activity (with respect to wilderness value) was clear (the carrying capacity evaluative component).

- **Carrying capacity is challenging in the fiords environment:** While not the purpose of this study, as noted by Manning and Lawson (2002) this challenge particularly relates to conflict between two inter-related wilderness elements – solitude (absence of other people, natural quiet, etc) and access (the reverse of remoteness). The challenge is measuring the trade-off between these two aspects in order to develop carrying capacity.
- **Exacerbated by methodological debate:** Implementing carrying capacity requires information and scientists are still debating how best to measure crowding in a marine setting – eg. whether to measure people or boats, rely on visitors’ recall of boat/people numbers or provide visual prompts.
- **Resource managers’ role is to provide opportunities for high quality experiences:** This study has identified many pertinent factors to assist managers identify appropriate setting characteristics and activities that potentially require controls.

Attributes specific to the coastal marine environment

- **Differences between marine and terrestrial recreation:** Various differences were evident, particularly the need for motorised access, the more passive activity of cruising, and the requirement for safety requirements – interviewees referenced visitors’ different perceptions of clustering at anchorages/moorings when stormy. Also, visitors are equipment/boat dependent in marine settings.
- **Onboard group dynamics:** The visitor is on a boat during their fiord experience and the onboard group influences the experience (although not examined in this study, clearly this is relevant and a range of types of boat-based trips exists). This relates to the dependence on facilitated access.

Definition of wilderness

- **Elements of wilderness:** As noted above, wilderness elements of the fiords well match those found in research from elsewhere, with the addition of the element of scale and less emphasis on conservation-related activity. This study has concluded that remoteness is an element of wilderness rather than separate to it, albeit an extremely important element in the case of Fiordland waters.
- **The operative Regional Coastal Plan separately defines remoteness and wilderness values:** The Plan treats them as though they are distinct, defining remoteness as ‘almost wilderness’ (ie. a similar definition to wilderness but less strict).

Recreation opportunity planning

- **Recreation opportunity planning frameworks provide a guide for managers:** While beyond the remit of this study, ROS-style planning frameworks provide the means to inventory the fiords with respect to the spectrum of recreation opportunities (ie. the experiences that the different fiord settings offer).

9.2 BOAT ACTIVITY

This section details study outcomes that address Objective 2: Identify effects (if any) from commercial boat activity upon wilderness and remoteness values.

With respect to wilderness value and experience, boats:

- Provide access – they are a critical means for people to get into the fiords (increasingly now also aircraft). An important difference compared with terrestrial wilderness is that motorised transport is required – inevitably some degree of impact on wilderness values occurs from motorised access (natural quiet particularly).
- Host the visit – people experience the fiords from on board vessels. They visit within a group/social microcosm on board.
- Moderate the experience through the actions of the operator/host – these actions positively influence the experience of wilderness, including moderating impacts upon visitors’ experience (eg. explaining purpose and history of structures).

- Prioritise safety – bad weather is a key moderating factor and may result in greater acceptance of the presence of structures (not examined). Several interviewees said that storms are increasing in severity and frequency in Fiordland.
- Impact on the wilderness experience – see next.

Impact factors related to boat activity include:

- Seeing other boats/other people was the most significant impact on wilderness experience values, although the cumulative effects of increased recreation/tourism activity was important.
- Increased visibility of boats given vessels are bigger.
- More frequent encounters (more boats, travel faster/more movements).
- Boats present in remote locations for longer; use being displaced to previously little-used fiords (especially Northern fiords); leaving boats on (an increasing number of) moorings.
- Air access into remote fiords associated with boat cruises.
- Crowding on moorings and at anchorages – health and safety issue.
- Possible loss of boatie etiquette on the water – two interviewees raised this explicitly, although it is implicit in the responses of some others.

Influencing factors (drivers) of these impacts:

- Larger size of vessels – especially important given strong scenic appreciation motive for visitors (visual impacts therefore are particularly relevant).
- Technology change – better boat design, onboard communications and navigational equipment.
- Changing product (Covid related) – fly in/out to the more remote fiords for week long cruises (impact on natural quiet).
- Growth in domestic demand with disposable income (Covid related) – increase in charter activity and private recreational boating.
- Demand for exclusive places that few others go to – strongly related to wilderness values (at risk of compromise as demand increases).
- Marketing by operators – on wilderness and natural quiet ('sound of silence').

Contextual factors:

- Boats are not the sole cause of impacts – structures and aircraft also particularly relevant, albeit these are related to boat use (eg. moorings, wharves, fly guests in/out).
- Changes in the nature of the tourist/recreationist is also relevant – such as being time-poor and an increasing focus on conscious travel.
- Sometimes reference to other places was used to describe Fiordland. Several people mentioned they did not want to see Fiordland become like the Marlborough Sounds (related to the accessibility and busyness of boat traffic).

Wilderness use conundrum:

- Conundrum of wilderness use is the desire to go somewhere with no/few other people and, by doing so, increasing the chance for others to see people.

Acceptability continuum:

- General agreement about the management problem, commonly described as the need to balance the protection of wilderness values and the opportunity for people to go there.
- No agreement that there is an imbalance – that the level and type of use is adversely impacting the wilderness experiential value of the fiords.
- Perceptions of the acceptability of use levels and patterns vary: a continuum is evident. At one end, are those who believe wilderness values have already been lost (some say irretrievably) and at the other end are those who believe that current use is not affecting wilderness values of the fiords.
- Describing an acceptable level of use (whether by commercial boats or other type of user) with respect to the amount of boat activity is beyond the scope of this study (ie. requires a carrying capacity assessment).

A wicked problem:

- The inter-related elements of wilderness and impacts upon them represent a wicked problem.
- Wicked problems are situations with multiple and competing goals, and uncertainty about cause and effect relationships. This means that there is no single right answer. A 'messy' context describes situations where problems are interconnected – solving one problem will affect another. As a result, there is contest for resources – the fiords' wilderness values (which are enduring) 'compete' with increasing (and changing) recreation/tourism activity.
- Complexity is evident with respect to: boat numbers, different vessel types and increasing size, fly in/out practices, visual intrusion of human-related infrastructure (but historic is alright), noise from various sources, use over a wider geographical area and a longer time period, and boats spending longer in fiords more distant from their port/access point.

9.3 IMPLICATIONS FOR INCREASED BOAT ACTIVITY

This section outlines study conclusions with respect to Objective 3: Discuss how increasing commercial boat activity may impact on wilderness and remoteness values.

Based on the information gathered from interviews, particularly responses as to whether recreation/tourism use is currently impacting wilderness and remoteness values, the following conclusions can be reached:

- The amount and type of boat activity is a significant impact on wilderness values for some people – those who felt wilderness values were being eroded commonly explained this with respect to “*too many boats*” or similar busy-ness related comments. More boat trips will exacerbate this impact.
- Acceptability Continuum – it is likely that more boat activity will shift people along the Acceptability Continuum (ie. increased boat activity will result in a greater proportion of people believing the activity is unacceptable). However, it is not clear what extent of activity increase is required to reach different individuals' acceptability thresholds (tipping points). There are no data on which to base this assessment because such questions are beyond the scope of this study (requires a carrying capacity assessment).
- Commercial boat trips provide the means for most people to visit Fiordland – there was no discussion within interviews that more or different means of access (to those options already available) was needed.
- Allocated but unused permits for commercial boat-based tourism – many people raised concern about the number of these permits (believing it to be large). Their concern was that unexercised consents represented a 'wild card' that could increase use substantially in an uncontrolled manner.
- Use pressure is from various types of boat user – several people explicitly stated that mainstream tourism operators were not causing the use pressure. Increases in charter boats and recreational boats (and changes in their characteristics) are very relevant. Given the vested interests of many interviewees, the key point is that it is clearly more than a commercial boat activity issue.
- New types of impact – there is no reason to expect new types of impact to emerge, although that is possible. This risk is considered low given the indepth nature of the 22 interviews. It seems likely that any 'hovering' issues would have been discovered even if tipping points had not yet been triggered.
- Carrying capacity – planning processes exist to guide the development of carrying capacity (see for example Booth and Espiner 2006).
- In sum, an increase in boat activity will exacerbate existing impacts on the fiords' wilderness values.

Recreation and tourism activity in the fiords has been shaken up by long-term trends and Covid-related effects such that:

- Displacement is occurring – owing to levels and types of activity, boats are shifting into more remote fiords in order to offer their clients a wilderness experience.

- The role of Milford Sound/Piopiotaahi as a ‘sacrificial’ fiord protecting other fiords has been diminished as the nature of fiord use has changed and use in the more southern fiords has increased (especially Tamatea/Dusky Sound).
- Factors that have traditionally constrained use (notably weather and access) remain; however, technology improvements (to boats in particular) and the increase in domestic tourism products has made it easier to visit.
- Changes implemented as part of the Milford Opportunities Project with respect to Milford Sound/Piopiotaahi may have flow-on effects for other fiords.
- Business (and consent) ownership changes (particularly in the charter sector) may lead to further shifts in use and behaviours.

9.4 MANAGEMENT CONSIDERATIONS

This study has highlighted many factors that are relevant to ES’s decision making.

Patterns of use will continue to change:

- Use patterns have changed dramatically with Covid – there is no certainty about use patterns post-Covid nor when the post-Covid phase might begin (at the time of writing the Government had not clarified the border re-opening strategy).
- It can be predicted that a new pattern of use will emerge once New Zealand’s border re-opens to international visitors. It is unlikely to be the same as the pre-Covid or Covid periods.
- The management challenge is to avoid reacting to Covid use patterns.

Long-term trends suggest that use patterns are changing anyway:

- Long term trends (not Covid related) include changes in vessel design and use of the fiords resulting in greater geographical coverage (more fiords being visited more often) by an increasingly diverse set of vessels/users.
- Growth in use includes a considerable increase in recreational boat use and size of private vessels. Use pressure is not limited to commercial boats.
- Some pinch points are evident – moorings/anchorages, land access points (at Milford Sound/Piopiotaahi, Doubtful Sound/Patea), heli-access points, and visitor attraction landing sites.
- Hints of potential activity clashes were heard – part-day visits to Tamatea/Dusky Sound vs. ‘slower use’ visitors, air access vs. everyone not in a helicopter/plane, high-end ‘flash’ or large boats vs. traditional Fiordland users.

Commercial boat use was positively construed:

- There was a strong emphasis on letting people (New Zealanders) experience Fiordland. Given the difficulty of access, most people require a commercial operator to get there. The “*reality of Fiordland*” is that you cannot explore the fiords on foot and very few people can take their own boat. Most visitors must go with an operator and pay for that opportunity.
- Given most interviewees were commercial operators, a positive perspective on commercial use can be expected.

Impact factors are inter-related:

- Changing one thing has flow-on effects – it is like pulling a thread.

Relevant considerations that became apparent in this study:

- Recognition that ES needs to act: some operators stated explicitly that they expect ES to set limits or otherwise restrict fiord boat use. One said ES should immediately halt issuing further permitted activity (in order to take stock).
- Acknowledgement that it is an uneven playing field: a few operators explicitly stated that they realise they have a privileged position in that they already hold consents and there is an equity consideration (for those who wish to have a consent for (more) activity).

- Concern about un-used consent allocation: a loose cannon that could ‘blow’ and exacerbate use pressures.
- Applying the recreation opportunity planning spectrum: the problem is asymmetric, in that wilderness values are not increasing, they are either decreasing or static (depending on your perception). Loss of the remote/wilderness setting may be irreversible.

Specific matters that raise management implications:

- Moorings: this was a topic that many people felt ‘hot under the collar’ about. One experienced tourism operator believes it is the biggest issue that requires management in the fiords at present.
- Structures: the presence of permanent structures was seen as part of the problem.
- Large cruise vessels: strong, mostly negative views were expressed that they are not appropriate in the fiords and carry a high risk.

With respect to process, operators are keen to help ES:

- They feel they can offer local knowledge to help design tools/regulations that will work. They can ‘ground truth’ any proposed regulations and identify likely flow-on effects.
- Interviewees offered ideas about managing the fiords. These points have been compiled separately to this report for ES.

10 CONCLUSION

This study was commissioned by ES and examined aspects of recreation and tourism within the Fiordland CMA to inform the review of the Regional Coastal Plan for Southland 2013, including a potential plan change relating to the management of commercial surface water activities within the Fiordland CMA. Specifically, it sought to understand the wilderness and remoteness values of the fiords.

This study explored these values primarily through a review of the international research literature and by conducting 22 indepth interviews with 27 people, most of whom were commercial tourism or charter operators (and holders of permits for commercial surface water activity). These data were supplemented by information provided by Te Ao Mārama and the Fiordland Marine Guardians, as well as knowledge obtained from reports and data held by management agencies (summarised in Robertson and Graham 2022). The planning context for this study was provided by a synopsis of relevant legislation, policy and plans (drawn from Robertson and Graham 2022).

The primary findings relating to each of the three study objectives are given below.

Objective 1: Describe wilderness and remoteness values for each of the five fiord complexes

Broad agreement about the definition of wilderness and remoteness values for the fiords was found. Particularly strong was the aspect of ‘minimal human presence’ – seeing few or no other people, or signs of human presence.

Values held for the five fiord complexes differ; however, all of Fiordland was felt to be largely similar with respect to wilderness values. Covid-related changes in recreation and tourism activity have been dramatic, affecting the fiord complexes in different ways.

Remoteness is a particularly important element of wilderness. The difficulty of access into most of the fiords (with its reliance on motorised transport and commercial trips) drives many aspects of fiord use and influences perceptions of wilderness. The relative ease of access to Milford Sound/Piopiotahi and Doubtful Sound/Patea (to a lesser extent) set them apart from the other fiords.

Objective 2: Identify effects (if any) from commercial boat activity upon wilderness and remoteness values

The amount and nature of recreation and tourism activity in the fiords is having an impact upon perceptions and experience of wilderness. Impacts relate to seeing other boats (at all, or in numbers beyond their expectations), increased visibility of vessels (related to increased vessel size), more frequent encounters, more boats present in the more remote fiords and staying for longer, increased use of aircraft for access to boats, crowding on moorings and anchorages, and a potential loss of boatie etiquette on the water.

Displacement is occurring, whereby boats are shifting into more remote fiords to avoid the busyness of their current locations.

Impacts from commercial boat activity is difficult to separate from non-commercial boat activity. Activity changes have occurred across a range of types of boat-based use (charter trips, recreational trips, large cruise ship journeys, day and overnight tourism cruises).

There was general agreement about the management problem – the need to balance the protection of wilderness values with the opportunity for people visit Fiordland. But no agreement that there is an imbalance – that the level and type of use is adversely impacting the wilderness experiential values of the fiords. Different views were expressed about the acceptability of current recreation/tourism boat activity.

Objective 3: Discuss how increasing commercial boat activity may impact on wilderness and remoteness values

This study concludes that an increase in boat activity will exacerbate the impact of recreation and tourism activity on wilderness (and remoteness) values held for the fiords.

The existing amount and type of boat activity is eroding wilderness values for some people. More boat activity will exacerbate this impact. It is likely that people who find the current extent of activity acceptable (with respect to wilderness values) will shift their judgement (perceive it as unacceptable) in response to some amount of increase in activity. It is not clear at what point this balance may tip (questions of carrying capacity were beyond the scope of this study).

Allocated but unused permits for commercial boat-based tourism represent a ‘wild card’ that could increase use in an uncontrolled manner, irrespective of decisions made by ES about future applications for permits associated with commercial surface water activity.

To more fully address this study objective, potential next steps could include:

- Fill the information gap about visitors’ perceptions and experiences (gather data from recreationists and tourists). However, challenges in doing so include considerable uncertainty about post-Covid use patterns and methodological difficulties (as outlined in section 3.5.3).
- Conduct a carrying capacity assessment for the fiords focused on the visitor experience.

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Te Rūnanga o Ngāi Tahu Act 1996.

APPENDICES

APPENDIX 1: INTERVIEW QUESTIONS

Introduction			
	<ul style="list-style-type: none"> • Thank you. • Preparing an independent report for Environment Southland – to inform Environment Southland’s Regional Coastal Plan review process including a potential plan change relating to the management of Commercial Surface Water Activities in Fiordland. • Interviewing a selection of people familiar with Fiordland. • Purpose of these interviews is to understand perceptions of wilderness and remoteness values held for Fiordland waters. • Hand over consent form: <ul style="list-style-type: none"> ○ For signature. ○ Ok to record conversation? ○ ES will not be told who we are interviewing – your involvement is confidential. ○ Won’t be able to identify your comments – anonymous. • There are no right or wrong answers. Your perspective is what matters the most. • Study focus is the marine area within the fiords, not the open sea beyond the fiords. I’ll just say “Fiordland waters” or simply “Fiordland” (FW). 		
A Connection with FW			
<i>To get started it would be really helpful to hear about your own connection with FW</i>			
1.	<table border="1"> <tr> <td>What has been your connection with FW over time?</td> <td>Length of time, types of activity, recreational vs livelihood, etc.</td> </tr> </table>	What has been your connection with FW over time?	Length of time, types of activity, recreational vs livelihood, etc.
What has been your connection with FW over time?	Length of time, types of activity, recreational vs livelihood, etc.		
2.	<table border="1"> <tr> <td>What do you currently do in FW?</td> <td>How long for? Which fiords familiar with? (current/past use, spend/spent most time in)</td> </tr> </table>	What do you currently do in FW?	How long for? Which fiords familiar with? (current/past use, spend/spent most time in)
What do you currently do in FW?	How long for? Which fiords familiar with? (current/past use, spend/spent most time in)		
3.	<table border="1"> <tr> <td>Tell me about your current operation.</td> <td>What – type of business, product, day & overnight Where – places, access points, access options How often – seasonal, regular service, on demand Type of visitor activities offered, eg. kayaking, diving, fishing</td> </tr> </table>	Tell me about your current operation.	What – type of business, product, day & overnight Where – places, access points, access options How often – seasonal, regular service, on demand Type of visitor activities offered, eg. kayaking, diving, fishing
Tell me about your current operation.	What – type of business, product, day & overnight Where – places, access points, access options How often – seasonal, regular service, on demand Type of visitor activities offered, eg. kayaking, diving, fishing		
B Experience of changes in use within FW			
<i>Now I’m keen to hear your thoughts on use of FW. First of all, let’s talk about Covid.</i>			
4.	<table border="1"> <tr> <td>What have you observed about use of FW as a result of Covid?</td> <td>Check: Displacement or a different product for a different market?</td> </tr> </table>	What have you observed about use of FW as a result of Covid?	Check: Displacement or a different product for a different market?
What have you observed about use of FW as a result of Covid?	Check: Displacement or a different product for a different market?		
5.	<table border="1"> <tr> <td>What do you expect to happen once all Covid restrictions are gone (open borders and no travel restrictions in NZ)?</td> <td>Expect it to go back to the way it used to be?</td> </tr> </table>	What do you expect to happen once all Covid restrictions are gone (open borders and no travel restrictions in NZ)?	Expect it to go back to the way it used to be?
What do you expect to happen once all Covid restrictions are gone (open borders and no travel restrictions in NZ)?	Expect it to go back to the way it used to be?		
<i>I’m keen to understand any <u>long-term trends</u> (compared with Covid-related shifts)</i>			
6.	<table border="1"> <tr> <td>Thinking about how it used to be, had the FW use patterns been changing anyway?</td> <td>Prompts: volume (demand), users, activity, vessels (number, size, frequency trips), products, fiords</td> </tr> </table>	Thinking about how it used to be, had the FW use patterns been changing anyway?	Prompts: volume (demand), users, activity, vessels (number, size, frequency trips), products, fiords
Thinking about how it used to be, had the FW use patterns been changing anyway?	Prompts: volume (demand), users, activity, vessels (number, size, frequency trips), products, fiords		
7.	<table border="1"> <tr> <td>What do you think has driven those changes? Anything else?</td> <td></td> </tr> </table>	What do you think has driven those changes? Anything else?	
What do you think has driven those changes? Anything else?			
8.	<table border="1"> <tr> <td>If FW go back to its pre-Covid state, do you think these trends will continue?</td> <td></td> </tr> </table>	If FW go back to its pre-Covid state, do you think these trends will continue?	
If FW go back to its pre-Covid state, do you think these trends will continue?			
C Perceptions of wilderness and remoteness values of different fiords			

	<i>That's a really helpful picture of the use of FW. Now I'm keen to talk about values of FW, particularly wilderness and remoteness values.</i>	
C1	Your perceptions	
9.	How would you describe Wilderness?	
10.	How does that relate to Remoteness?	
11.	What do you think of when you think about the Wilderness and Remoteness values of the fiords?	
12.	Are there differences between the fiords with respect to Wilderness and Remoteness?	
13.	Does the presence of designated Wilderness Areas and Marine Reserves make a difference?	
14.	Are some activities more appropriate with respect to Wilderness and Remoteness values than others?	
15.	<p>Research tells us that wilderness and remoteness values are made up of different properties.</p> <p>The key ones are:</p> <ul style="list-style-type: none"> • Naturalness • Minimal human presence • Natural quiet • Remoteness • Aesthetic appreciation • Conservation-related • Personal experience 	<p>I'd like to talk to you now about how well you think these descriptors of wilderness align with the different parts of FW you are familiar with.</p> <p>Prompt questions enquired into:</p> <ul style="list-style-type: none"> • Naturalness • Minimal human presence • Natural quiet • Remoteness • Aesthetic appreciation • Conservation-related • Personal experience
16.	Thinking about all of these wilderness factors – do you think commercial boat activity impacts on the wilderness and remoteness values of the fiords?	
17.	Do you think visitors to FW think about their own impact in respect of the wilderness and remoteness values we talked about?	
18.	What do you personally value the most about FW?	
19.	Do you think FW are unique?	What makes them unique?
20.	For you, are there any special places in FW?	What makes these places special?
C2	Visitors' perceptions [for tourism operators]	
	<i>We're not talking to visitors, but you interact with visitors on a regular basis – I'm keen to hear about your clients' perceptions of Wilderness and Remoteness in FW</i>	
21.	Do you think Wilderness and Remoteness values are important to your visitors?	Are there differences in this between domestic tourists and international visitors?
22.	Do you think their expectations of Wilderness and Remoteness are met?	If not met, why not?
23.	Do your visitors comment about other visitor activity in FW?	
24.	Are these comments positive or negative?	Do you think this impacts on their experience/satisfaction?
25.	Are there differences by fiord?	

26.	Do you do anything in your operation to minimise negative impacts of these things for your visitors?	
C3	Your thoughts on whether Wilderness and Remoteness values have changed over time	
	<i>To finish up I would like to get your views as to whether the pre-Covid changes in use of FW we talked about earlier have impacted on Wilderness and Remoteness values</i>	
27.	Do you think this has happened?	Why do you think this – what indicators or evidence have you observed?
28.	Do the individual fiords differ in respect of these changes?	
D	Anything else	
29.	Is there anything we haven't covered that you want to raise?	
	Wrap up	
	<ul style="list-style-type: none"> • Thank you. • Next step is that we will analyse the information from our interviews. • A report will be submitted to Environment Southland in first quarter 2022. <ul style="list-style-type: none"> ○ Our report will not be making any recommendations. ○ Its purpose is to inform ES about wilderness and remoteness values, so ES can develop plans and policy. • If person wants to talk to ES: provide contact details. 	



Consent form

I consent to be interviewed for research into Fiordland’s internal waters and its wilderness and remoteness values.

I understand that my views will be used anonymously to inform Environment Southland’s Regional Coastal Plan review process including a potential plan change relating to the management of commercial surface water activities in Fiordland.

I give consent for my views to be reported in the research findings, so long as I cannot be identified through what is communicated.

I consent to my interview being recorded solely for the use of study interviewers, so that you have an accurate account of my responses to questions. I understand that recordings and written notes relating to my interview will be used in the strictest confidence and destroyed after the project.

I understand that my name will be kept confidential and not disclosed to anyone including Environment Southland.

NAME

SIGNED

DATE

APPENDIX 3: RECREATION OPPORTUNITY PLANNING FRAMEWORKS

To supplement discussion in section 3.4.2 of this report, Appendix 3 synthesises the key recreation opportunity planning frameworks that have been developed to assist resource managers to provide a diverse range of recreation opportunities.

Recreation Opportunity Spectrum (ROS)

The Recreation Opportunity Spectrum (ROS) (Clark and Stankey 1979) is an application of behaviour setting analysis from environment psychology and is based on the premise that human behaviour can be interpreted with reference to the environment in which it occurs (Pigram and Jenkins 2006). Pigram and Jenkins (2006:42) note that 'given knowledge of the behaviour setting for specific recreation experience [and] it should be possible to identify human values and expectations associated with that experience'. The ROS framework employs six settings classes (urban, suburban, rural developed, rural natural, semi-primitive, and primitive) to describe a range of physical, social and management attributes. More applied approaches describe management attributes according to opportunity setting classes within which the most important factors are access, non-recreational uses, onsite management (modification), social interaction, acceptability of visitor impacts, and acceptable regimentation (Manning 2011, Pigram and Jenkins 2006). The six ROS setting classes are sometimes labelled as modern urbanised, concentrated, rustic, semi-primitive motorised, semi-primitive non-motorised and primitive (Manning 2011).

Water and Land Recreation Opportunity Spectrum (WALROS)

While WALROS (formally WROS) was modelled on the ROS system it places greater emphasis on water resources, including reservoirs, lakes, rivers, bays, estuaries, wetlands, major springs, coastal zones, and protected marine areas (Aukerman et al. 2009). The same six settings classes as ROS – urban, suburban, rural developed, rural natural, semi-primitive, and primitive – are used, with an inventory protocol measuring the three setting attributes:

- Physical attributes (degree of major development, distance from major development, degree of natural resource modification, sense of closeness to a community, degree that natural ambiance dominates the area).
- Social attributes (degree of visitor presence, degree of visitor concentration, degree of recreation diversity, degree of solitude and remoteness, degree of nonrecreational activity).
- Managerial attributes (degree of management structures, distance to developed recreation facilities and services, distance to developed public access facilities, frequency of seeing management personnel).

While this extension of the terrestrial ROS framework accommodates a wide array of water settings these are primarily terrestrial or land-adjacent.

New Zealand Recreation Opportunity Spectrum (NZROS)

The NZROS represents a modification of the original North American ROS framework and describes a New Zealand ROS spectrum (Taylor 1993). While the NZROS was closely modelled on ROS the terminology was changed to better represent New Zealand (eg. urban fringe rather than suburban, wilderness rather than primitive). The NZROS is based on, and arranged according to, a range of:

- Geographic units (urban, urban fringe, rural, back country, remote, wilderness).
- Physical settings (described in respect of modification, accessibility, size).
- Social settings (described by the number of other people, number of interactions).
- Managerial settings (described by rules and regimentation, facilities and services, maintenance).

While NZROS includes terrestrial waters across the different geographic setting categories (eg. lakes, rivers) maritime waters are treated separately within a NZMOE classification (see later).

'Wilderness waters' are described as providing the opportunity for the following experience (Taylor 1999:24):

Outside the participating group there is a very high probability of experiencing complete isolation from the sights, sounds and activities of humans. There is a high probability of no interaction with other recreation user groups. Users generally either totally reliant on their sea or outdoor skills, or totally

dependent on the skills of others. There will be high risk associated with activities due to isolation and dependence on group resources. The environment provides a highly natural experience.

Tourism Opportunity Spectrum (TOS)

In addition to the outdoor recreation frameworks (ROS, WALROS, NZROS) a nature-based Tourism Opportunity Spectrum framework (TOS) and Ecotourism Opportunity Spectrum (ECOS) have also been proposed. Both TOS and ECOS recognise the importance of natural environment, but do not formally account for this in frameworks – indicative of the more commercialised and business-oriented structure of tourism perhaps.

The Tourism Opportunity Spectrum (TOS) is an opportunity classification based on the degree of dependence on nature (nature-immersed, nature-based and nature-packaged) (Carroll and Hession 2015). Within this, opportunities are described with respect to a range of factors including:

- On-site management (site alterations, accommodation, shopping and entertainment).
- Site access (difficulty of access, convenience of travel, marketplace and information).
- Compatibility of other non-adventure uses (man-made elements, natural resource extraction, non-aesthetic distractions, non-compatible activity).
- Social inventory (visitor to visitor contact, quality of contact, visitor to host contact, quality of contact).
- Acceptability of visitor impacts (degree of impact, prevalence of impact).
- Regimentation/control of tourism experience (structure, independence and flexibility of opportunity).

Key things about this are incorporation of commercialisation, expectation of more people and modification – and no reference to remoteness or wilderness. While TOS still considers the natural carrying capacity settings, it also considers human perspectives (especially the interactions amongst tourists, hosts and management bodies) and the availability of tourism infrastructure and facilities (Huang and Confer 2009).

Ecotourism Opportunity Spectrum (ECOS)

Boyd and Butler's (1996) adaptation of the ROS to the Ecotourism Opportunity Spectrum (ECOS) framework did not specifically include a resource classification. They suggested an ecotourism spectrum based on interest in ecotourism which included eco-specialists, intermediate and eco-generalists. Within this, eight factors were identified as important to ecotourism: accessibility, the relationship between ecotourism and other resource uses, attractions in a region, presence of existing tourism infrastructure, level of user skill and knowledge required, level of social interaction, degree of acceptance of impacts and control over level of use, and type of management needed to ensure the viability of areas on a long-term basis.

ECOS is framed on the participant interest and skill levels (rather than the physical setting) and, while the natural environment is an important resource for ecotourism, it is notable that it is only included with respect to the 'attractions in a region' in the important factors noted above.

New Zealand Marine Opportunities Experience (NZMOE)

In addition to the WALROS framework, two frameworks have evolved which specifically address marine settings.

The NZMOE was developed alongside the NZROS to describe and classify outdoor activities in water-based settings (Taylor 1993). This includes terrestrial water settings (lakes, rivers and estuaries) as well as those marine water settings. For marine settings this class system describes:

- Marine geographic units (seashore, coastal and blue water).
- Marine opportunity experience settings (urban waters, readily accessible waters, remote waters, wilderness waters). Readily accessible waters are further differentiated by access means (eg. land/sea accessible, land accessible and sea accessible).
- Access to remote and wilderness waters is very limited and adjacent areas of land are largely unmodified.

The majority of activities identified under each class are outdoor recreation rather than tourism activities. Sailing, eco cruises and diving are identified as wilderness waters activities. Similar to outdoor recreation

activities in wilderness areas, it is noted that a high level of self-sufficiency and skill is required for these activities in the marine wilderness setting. It is recognised that participants may rely on the skill of others (eg. commercial activity providers) – in a further acknowledgement of tourism activity (rather than individualised outdoor recreation). It is also noted that there is a high probability of experiencing complete isolation from the sights, sounds and activities of humans outside of one’s own participating group. Taylor’s (1993) ‘remote waters’ overlap to some degree with the land classified as ‘backcountry’ (rather than aligning with remote land) and, as such, represent a less strict remote classification.

Spectrum of Marine Recreation Opportunity (SMRO)

The SMRO is a specific marine opportunity framework (Orams 1999). This framework describes experience, environment, location and activities under five setting classes based on accessibility:

- Five setting classes based on accessibility: easily accessible, accessible, less accessible, semi-remote and remote.
- Experience factors: amount and type of social interaction, level of self-sufficiency and safety support, experiential factors.
- Environment factors: amount and visibility of human modification and activity, quality of natural environment.
- Location factors: proximity to urban areas, intertidal areas, amount of development onshore and distance offshore.
- Activities: primarily individual or small group outdoor recreation activities, rather than commercially operated tourism ones.

Similar to the NZMOE, the majority of activities described are outdoor recreation rather than commercial tourism. Semi-remote activities include scuba diving, powerboating (offshore equipped) and sailing (larger sailboats) while remote activities include offshore sailing, live-aboard offshore fishing and remote coast sea kayaking.