

Weed and sediment removal for drainage: *information for farmers*

The removal of aquatic weeds, plants and sediment from Southland's network of modified and artificial watercourses to maintain drainage outfall is a permitted activity.

However, if not executed correctly, drainage maintenance can harm aquatic ecosystems, habitats and areas of significant vegetation and reduce water quality.

To prevent this from happening, it is crucial that the activity is undertaken solely to maintain or restore the drainage capacity of a modified or artificial watercourse. Keep bed disturbance to the minimum necessary to undertake the activity. Return stranded fish and eels to the water immediately. Trout spawning and whitebait habitats must also be undisturbed.

Rules

Weed and sediment removal from any modified watercourse for drainage maintenance purposes is permitted provided certain conditions are met. These conditions include:

- the activity is undertaken solely to maintain or restore drainage capacity;
- the watercourse has had previous drainage maintenance work carried out at that location;
- the activity is restricted to the removal of aquatic weeds, plants and/or sediment;
- incidental bed disturbance and gravel removal is kept to the minimum;
- fish passage is not impeded upon completion of the activity;
- all reasonable steps are taken to return any captured/stranded fish to water immediately;
- from 1st June to 31st October, there is no disturbance of the spawning habitat of trout;
- from 1st November to 31st May, there is no disturbance of banks within the tidal river habitat that floods at spring tide;
- no fuel storage or machinery refuelling occurs on any area of the bed;
- no contaminants, other than sediment released from the bed, are discharged to water;
- there are no known archaeological sites or wahi tapu in the bed of the watercourse at the site of the activity. Upon discovery of such a site, the activity must cease immediately and Environment Southland must be notified;
- before any equipment is moved to a new activity site it is effectively cleaned to prevent the spread of pest plants and animals;
- all equipment and debris associated with the activity are removed from the bed of the watercourse on completion of the activity (except for sediment used to repair banks);
- where the watercourse is spring-fed, removal of aquatic weeds and plants is kept to the minimum.

Activities, such as weed and sediment removal, in the beds of artificial watercourses are not controlled under the Resource Management Act and can be undertaken as of right. However, it is important to note that many farm drains are in fact modified watercourses rather than artificial watercourses, so the above rule will apply.

Activities that require consent:

- Weed and sediment removal from a lake or natural watercourse that has not had previous drainage maintenance work carried out at that location requires resource consent.
- Diversion of water from any naturally occurring wetland requires resource consent.
- Channel deepening and/or significant rebattering (reshaping) of the banks to increase channel capacity requires resource consent.

Good Management Practices

- While removal activities deal with the build-up of weed and sediment in watercourses, it is important to try and prevent weed and sediment build-up in the first place. This can be done by controlling nutrient and sediment inputs:
 - *maintain riparian buffers and plantings to trap the nutrients and sediment in overland flow and prevent these entering watercourses;*
 - *keep plough lines back from watercourses to stop sediment loss;*
 - *construct wetlands to prevent sediment entering waterways;*
 - *exclude stock from watercourses wherever possible;*
 - *budget nutrients to help reduce loss of valuable fertiliser to watercourses and excessive growth of aquatic plants.*
- Schedule drainage maintenance activities at specific times of the year to prevent disturbance to whitebait and trout spawning; and avoid the need for resource consent.
- Avoid drainage maintenance activities in areas where significant native vegetation will be damaged.
- Cleanings should be put behind the machine. This prevents sediment from getting back into the stream but will also allow stranded eels and crayfish to move back to the water.
- Use a weed rake or ditch-cleaning bucket with drainage holes for drain maintenance. These allow water to escape, reducing the load and helping to prevent fish from being stranded.
- Riparian planting can help shade the stream and prevent weed growth. Please contact the Land Sustainability division of Environment Southland for free advice on riparian planting.
- Maintenance of long stretches of watercourse can be prevented by installing a sediment trap. This activity requires a resource consent, so please contact Environment Southland for more information.
- Leaving small patches of weed in the waterway is acceptable. It gives fish a place to shelter and reduces the likelihood of excavating below the bed level.
- The base of any culvert must be placed 300mm or 1/3 the diameter of the culvert, whichever is the lesser, below the natural bed level. Ensure that drainage maintenance activities do not leave culverts “high and dry,” as this will prevent fish passage.

Key terms and information:

Artificial watercourse

Includes an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal.

Modified watercourse

A water carrying channel that was existing in some form prior to land development but has been modified or straightened for drainage or other purposes.

Bed

The space of land covered by the waters of a watercourse at its fullest flow without overtopping its banks.

Trout Spawning

Trout spawning occurs in riffles (gravel ridges in the stream bed). The trout make redds, which are like a nest of gravel. Redds are characterised by a depression in the gravel and a mound of, generally, algae free stones immediately downstream, often under overhanging vegetation at the side of a stream. Trout spawning can occur from May to November.

Further assistance

Environment Southland encourages the uptake of the good management practices.

Every farm is different and some activities require resource consent, so having a free visit & the expert advice of a land sustainability officer is recommended.

Please contact Environment Southland's land sustainability team on (03) 211 5115 or 0800 76 88 45.



▶ A trout redd. Note the clear stones forming a depression and a mound immediately downstream. It is an offence under the Conservation Act 1987 to disturb or damage the spawning ground eggs or larvae of any freshwater fish (Image: Fish and Game).