



National Environmental Standards

Freshwater Fish passage

On 3 September 2020, central government announced their Essential Freshwater package. This package is comprised of several policies and regulations that aim to stop further degradation of our rivers, lakes and streams.

The National Environmental Standards for Freshwater 2020 (NES-FW) and National Policy Statement for Freshwater Management 2020 (NPS-FM) are part of this package and outline the rules and regulations surrounding new structures built since 2 September 2020 that may be impeding fish passage.

Horizons Regional Council is working through the implications for monitoring and enforcement, and we encourage all landowners to become familiar with what is required. A good starting point for this is the Ministry for the Environment's policies and regulations factsheets.

For links to the relevant central government documents listed here see:
www.horizons.govt.nz/our-freshwater-future.

What is fish passage and why does it matter?

Fish passage is the ability for fish to move unobstructed through waterways. Conversely, barriers to fish passage are any instream structures that may block or impede passage. Many of our native fish, such as inanga (whitebait) and tuna (eels), need to move between habitats to complete their lifecycles. Culverts, weirs, fords, dams and tide flood gates are common in rivers and streams

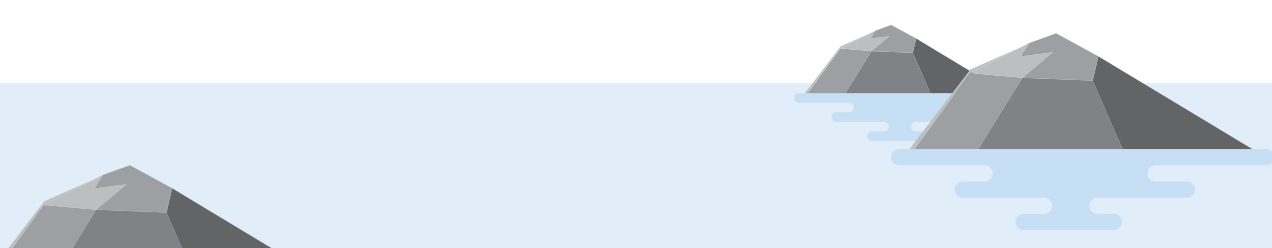
throughout New Zealand and, if not designed and implemented correctly, can hinder fish passage.

The new freshwater regulations aim to maintain or improve fish passage past instream structures, except when it is desirable to prevent the passage of some fish species to protect a desired fish species (e.g maintaining a weir to protect native fish where they would otherwise be predated on by trout). The improvement and maintenance of these instream structures will open up additional habitat facilitating population growth within our already threatened native fish populations.

Who manages fish passage?

The Department of Conservation (DOC) and regional councils have specific responsibilities to manage fish passage in New Zealand waterways under the Freshwater Fisheries Regulations 1983 and Resource Management Act 1991 respectively. Both pieces of legislation must be considered when undertaking activities that may impede fish passage.

Regional councils are responsible for issuing resource consents and for enforcing the requirements of the NES-FW when required.



For the most part, the One Plan (Horizons combined Regional Policy and Regional Plan) already includes what is required by these new fish passage regulations, however some changes are needed to give effect to the new national directions. In cases where the One Plan is more stringent than the NES-FW, the most stringent regulation will apply. The NES-FW also contains information requirements for activities that must be provided to the regional council even when they may not need a consent.

This document contains our initial assessment of the regulations, how they compare to the One Plan, and how they relate to fish passage. There are three parts to this document, and each is important for you to understand.

PART 1:

provides important definitions

PART 2:

provides details on relevant requirements for fish passage

PART 3:

provides answers to Frequently Asked Questions

PART 1:

Important definitions

One Plan: Horizons Regional Policy and Regional Plan which sets out an integrated framework for management of the environment.

Apron: means a hard (generally concrete) surface layer constructed at the entrance or outlet of a structure to protect the structure from erosion.

Culvert: means a pipe, box structure, or covered or arched channel that has an inlet and outlet that is in, and that connects the water or bed of, the same river or connected area.

Dam: means a structure:

- a) whose purpose is to impound water behind a wall across the full width of any river or connected area; and
- b) that is not a weir.

Drain: means any artificial watercourse designed, constructed, or used for the drainage of surface or subsurface water, but excludes artificial watercourses used for the conveyance of water for electricity generation, irrigation, or water supply purposes.

Flap gate: means a hinged gate that controls fluctuations in tidal or flood water, such as a tide gate or flood gate.

Ford: means a structure that:

- a) is artificial, shallow, and designed for crossing any river or connected area; and
- b) is in contact with most of the width of the bed of the river or connected area.

Non-passive flap gate: means a flap gate whose opening and closing is controlled by an automated and powered system (for example, electric or hydraulic) when the water reaches certain levels.

Passive flap gate: means a flap gate whose opening or closing:

- a) is caused by a positive head differential (increase in water level) on the upstream or downstream side, respectively; and
- b) is not controlled by an automated and powered system (for example, electric or hydraulic) when the water reaches certain levels.

River: a continually or intermittently flowing body of fresh water which includes a stream and modified watercourse but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation and farm drainage canal).

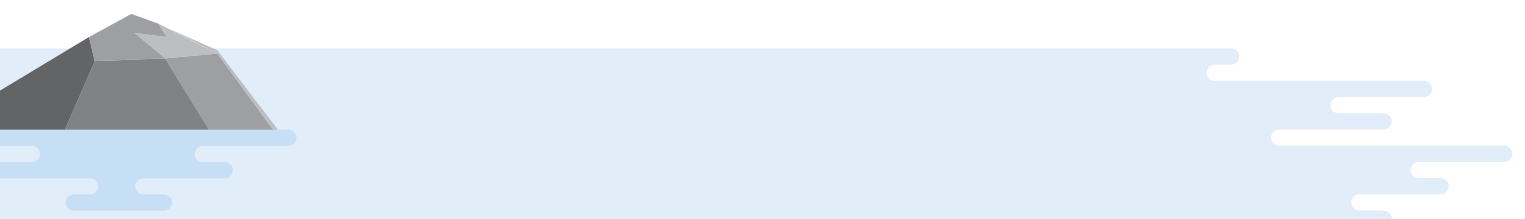
River or connected area: means a river or any part of the coastal marine area that is upstream from the mouth of a river.

River bed: the space of land which the waters of the river cover at its fullest flow without overtopping its banks.

Weir: means an open-topped structure across the full width of any river or connected area that:

- a) alters the water level and the flow characteristics of the water; and
- b) allows water to flow passively through or over the top.

Wetted margin: for a structure in any river or connected area, means an area that has shallow water that flows at low velocity and is at the edges of the water flow and is continuous over the length of the structure and is suitable for the passage of climbing species of fish.



PART 2:

Requirements for fish passage

For fish to be able to pass through a structure, it is essential that the streambed is kept as similar to its natural state as possible. To do so, you must ensure:

- The habitat is maintained (similar to nearby reaches and with little impact on alignment);
- The gradient is maintained (i.e. not too steep);
- The water velocity is maintained (i.e. not too fast);
- The water depth is maintained.



Examples of barriers to fish migration:

- | | |
|---|--------------------|
| 1 High water velocity inside | 4 Shallow water |
| 2 Long culvert, with increasing gradient towards upstream end | 5 Vertical drop |
| 3 Perched above stream | 6 Turbulent water. |

With these factors in mind, the One Plan and new NES-FW regulations have stipulated a set of rules to ensure certain structures are fish passable.

For structures in place prior to 3 September 2020, please refer to the One Plan conditions.

For structures on or after 3 September 2020, please refer to the One Plan (2018) and the NES-FW (2020). In the case that one has a more stringent regulation than the other, the more stringent will apply.

One Plan requirements:

As it stands, the One Plan has several general conditions that contribute to the protection of native fish species and their habitat. This is most commonly a condition of a Permitted Activity – where consent may not be required. The most explicit for fish passage is condition (h) of Table 17.2,

General Conditions for Permitted Activities and Controlled Activities involving the Beds of Rivers and Lakes, which requires all activities and structures (new or altered) in the beds of rivers to provide ongoing safe fish passage. Horizon's staff can provide free advice on how to meet condition (h).

National Environmental Standards for Freshwater Requirements:

From 3 September 2020, Horizons will be assessing the placement, alteration, extension, or reconstruction of new culverts, weirs, flap gates, dams and fords to ensure they meet the requirements for fish passage. If the activity is not permitted, it becomes a discretionary activity and will require a resource consent.

The resource consent will impose conditions that:

- require monitoring and maintenance of the structure to ensure passage of fish does not reduce over its lifetime;
- require a plan for monitoring and maintenance and the steps taken to avoid adverse effects on the passage of fish and;
- require an updated version of the information relating to the structure that was required for the original resource consent to be provided to the consent authority at the following times:
 - at the intervals required by the plan; and
 - each time a significant natural hazard affects the structure.

Further information on this can be found in clause 69 of the NES-FW.

Before you commence work:

Regardless of whether you need a resource consent, if you want to install a structure (or alter, extend or reconstruct) you must tell Horizons at least two days before commencing work.

After work is completed:

There is also an information requirement where design and performance variables need to be delivered to Horizons no more than 20 working days after the completion of the installation.

The following image summarises the **key** requirements (but are not fully exhaustive) within the NES-FW for structures to be **permitted** in, on, under or over the bed of a river:

NES-FW – Fish passages

Culverts

Water velocity $\leq$ nearby reaches

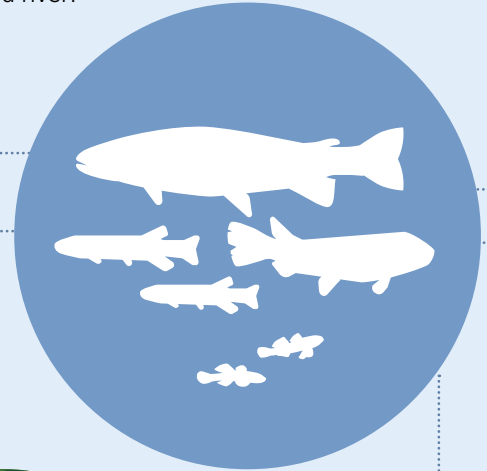
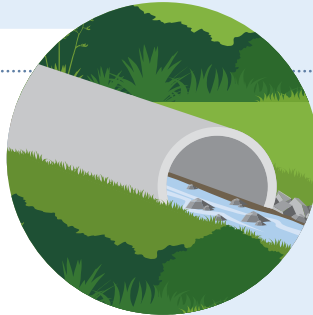
Laid parallel to bed

Restrictions on size
(see NES-FW or call Horizons)

Substrate present across the bottom
of the culvert

Open bottom or 25% of culvert diameter
buried below the streambed

- provide Horizons with information as specified in NES-FW Section 36
- also provide Horizons with information on Aprons and Ramps – as specified in NES-FW Section 68



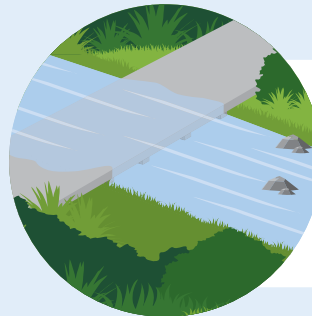
Weirs

Fall height $\leq$ 0.5m
Slope $\leq$ 1:30

v-shaped lateral profile
have roughness elements

- provide Horizons with information specified in NES-FW Section 64.

Note: Conditions do not apply
to customary weirs (e.g. for practicing tikanga Māori)



Fords

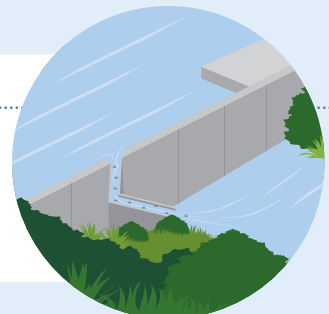
Refer to the One Plan

- provide Horizons with information specified in NES-FW Section 67

Dams

Refer to the One Plan

- provide Horizons with information specified in NES-FW section 66



General Conditions

- provide same passage that would exist without the structure
- allow movement of sediment/debris
- you must advise Horizons two days before commencing work
- specific information must be provided to Horizons **no more than 20 working days** after activity is finished. Specific details are listed under each structure identified here
- monitoring and maintenance is a consent condition of all structures as specified in NES-FW Section 69

References: All references to 'NES-FW Sections' refer to the MfE Resource Management (National Environmental Standards for Freshwater) Regulations 2020 which can be accessed at: www.horizons.govt.nz/our-freshwater-future and click on the link 'view the national environmental standards for freshwater'.

Note: Passive flap gates are non-complying activities and require specific condition as set out in clauses 62, 65 and 69 of the NES-FW Regulations.

Where there is conflict between the National Environmental Standards for Plantation Forestry (NES-PF) and the NES-FW, the NES-PF takes precedence. The NES-PF covers harvesting and plantation forestry and associated activities including temporary crossings and culverts.

For more information on the NES-PF go to www.mfe.govt.nz/land/land-acts-and-regulations/national-environmental-standards-plantation-forestry/about-standards.

For more information please contact the Horizons consents team on 0508 800 800 or email: consents.enquiries@horizons.govt.nz.

PART 3:

Frequently asked questions

When do these rules take effect?

The new NES-FW rules came into effect on 3 September 2020, so if you want to build a structure it is important for you to consider the rules and whether you will need to apply for a resource consent.

Do I need a resource consent to install a structure?

If you are able to meet all of the permitted activity conditions (of both the NES-FW and One Plan) you may install a structure without a resource consent.

Do I need to worry about my perched culvert that was installed years ago?

The new regulations do not apply to structures that were installed before 3 September 2020. However, the One Plan still has several conditions that promote fish passage and Horizons will be working alongside landowners to remediate barriers.

If I need to improve my structure is there funding to help?

Horizons currently has funding from the Ministry for the Environment to remediate barriers. If you would like to learn more about how we can help, please get in touch.

Do I still need to follow the rules in my farm drain?

The new regulations only apply to watercourses that are defined as a 'river or connected area'. With regard to the definitions listed in Part 1, artificial watercourses are therefore not classed as a 'river' and the regulations would not apply. There can be some difficulty in



Barrier to fish passage

assessing whether waterways are an artificial watercourse or a modified watercourse. If you are unsure whether a waterway is subject to the NES-FW, please get in contact with the Horizons' consents team on 0508 800 800 or by emailing consents.enquiries@horizons.govt.nz

What if I need to upgrade or replace my culvert? Do I need to follow the new rules?

If it was installed prior to 3 September 2020, then the new rules do not apply. However, the One Plan rules still do and you need to meet rule 17-5. This includes meeting the definition of maintenance or upgrade, as well as the conditions of the rule.

If I replace my culvert with a bigger one, which rules do I follow?

Since the culvert is bigger than the previous, it is no longer considered a replacement (instead, a new structure). Therefore, the new NES-FW rules need to be followed.

What if I have a structure that has multiple features e.g culvert with an apron?

If an overall structure is made up of two or more structures to which different provisions of the NES-FW apply (for example, a culvert is a structure and so is a flap gate), those provisions apply to the respective parts of the overall structure.

Can I install passive flap gates?

Not unless all of the conditions imposed in regulations 62, 65 and 69 of the NES-FW are met, as passive flap gates are a non-complying activity.



Torrentfish, like Inanga, are also migratory in nature and are at risk due to instream barriers.

Questions:

Contact the Horizons' consents team on 0508 800 800 or by email: enquiries@horizons.govt.nz

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For more information visit www.horizons.govt.nz
or freephone Horizons on 0508 800 800