

**Workshop - Banks Peninsula Water Management Zone
Committee
MINUTES ATTACHMENTS**

Date: Tuesday 30 April 2024
Time: 4 pm
Venue: Lyttelton Mt Herbert Community Boardroom, 25
Canterbury Street, Lyttelton

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Information from Pam Richardson 30 April 2024

Holmes Bay Stream, Pigeon Bay - some info re the catchment the red and green areas
(This is my home patch).

The red areas are under/ around the bridge area on the Holmes Bay Port Levy Rd and the green runs up the Holmes Bay Valley Rd.

The catchment of Holmes Bay has had a number of 'weather bombs' over the years. In April 68 the Wahine storm took out all the bridges in the valley. Roads were realigned and a new bridge built. A 'concreted water fall area' in the red area in the stream maybe goes back to this time.

Another big storm 2002 when the marina in Lyttelton Harbour was 'broken up'.

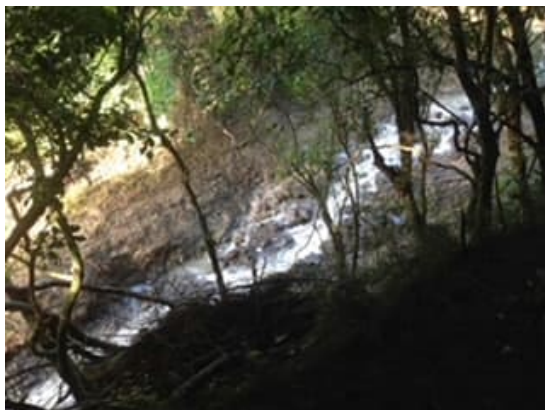
The most recent storm - 2014 around the Mt Sinclair / Little River area resulted again in heavy rain in our catchment causing damage to bridges and roads. A concrete stream crossing in the green area was covered by rocks, boulders and shingle following this event -the middle catchment looked like a braided river. The thin soil cover and vegetation across the valley floor was 'just stripped away



Holmes Bay Valley bridge upstream from the Holmes Bay bridge.

At the red area Holmes Bay - the roads and bridges, bridge abutments were repaired / rebuilt. The stream was diverted and repairs made to the bridge and the surrounding eroded land, a boulder bank built and holes in the stream bed filled - there was a lot of concrete used in the repair .

In 'big storms' you can hear the boulders being hurtled / rolled down the valley with shingle and boulders strewn over adjacent land .



The storm event of 2014 tearing kanuka out depositing further down the valley - normally a trickle.

Soil and vegetation just ripped away and rocks and boulders exposed.

A look at the Holmes Bay Valley stream - it is made up of a high-altitude steep and narrow area, a mid-level and the lower catchment. The stream and beds vary in each area. There are riffle pools, and the stream flows all year with minimum flows set buddied up with Rue Grehan)

There are many areas in the stream bed with 'large boulders' restricting, changing flows and banked up along the edge of the creek. We can see where they built boulder banks to protect the road following the storms. Parts of the old railway line can be seen; it ran down the valley bringing timber down to the Holmes Bay flats and to the wharf. The timber was also sledged down the slopes in the valley and they can still be seen today.

There are extensive areas of riparian vegetation - mostly native.

A student looked at the in stream health some years ago but the final report was not shared with us.



Progress towards improving fish passage at instream structures

Presentation to Banks Peninsula Zone
Committee

30 April 2024

Covering

- ID of fish passage issues, focus on Banks Peninsula
- Fish Passage Guidelines and Fish Passage Assessment Tool
- NES / NPS fish passage requirements
- Prioritising remediation
- Some recent projects
- Challenges and where to next





Fish Passage Guidelines and Fish Passage Assessment Tool

- FPAT – a mobile app designed as a ‘citizen science’ tool to help collect in field data about an instream structure to provide a risk to fish passage score. The FPAT is nationally promoted as the preferred tool for assessing fish passage issues although there are alternative approaches.
- NIWA released the NZ Fish Passage Guidelines in 2018. This is a national guideline which sets out design principles to enable fish passage through a variety of instream structures. This includes new installations and options for remediation of existing structures.

Links to both provided at the end of this presentation for future reference



NES / NPS fish passage requirements

- A topic of significance in the 2020 freshwater package is improving fish passage, which has seen in the inclusion of fish passage design regulations in the National Environmental Standard and clear policy direction in the National Policy Statement.
- A bit of uncertainty as to the current Governments approach to these national planning documents, but assuming business as usual at present.
- Notably, is the requirement for each region to produce a Fish Passage Action Plan. This plan sets the strategic framework for assessing and prioritising all instream structures for improving fish passage.
- The Canterbury Action Plan drafting is a work in progress.
- DOC are drafting up advice to guide compliance with the regulations and to support the drafting of the Action Plans (awaiting release).



Prioritisation approach for remediation

- Update from CCC on their prioritisation approach after this presentation
- NIWA are also developing a webmap/online tool that helps regions identify the biggest bang for buck structures for remediation.
- It will rank structures in terms of providing the largest area gain for connectivity and those that if they are ‘fixed’ would resolve a significant portion of the current restriction to passage.
- The tool can also be used to create regular reports to track progress towards barrier remediation and improvements in habitat connectivity (one of the requirements of the NPS)
- Canterbury needs to get on the “to do” list for NIWA and this can be quite an expensive piece of work so watch this space.

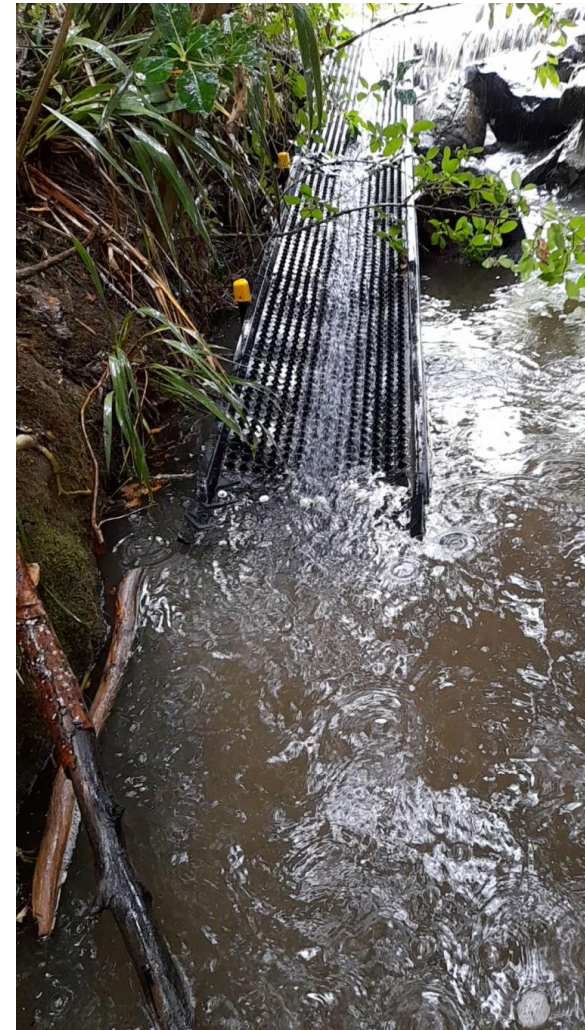


Getting action happening

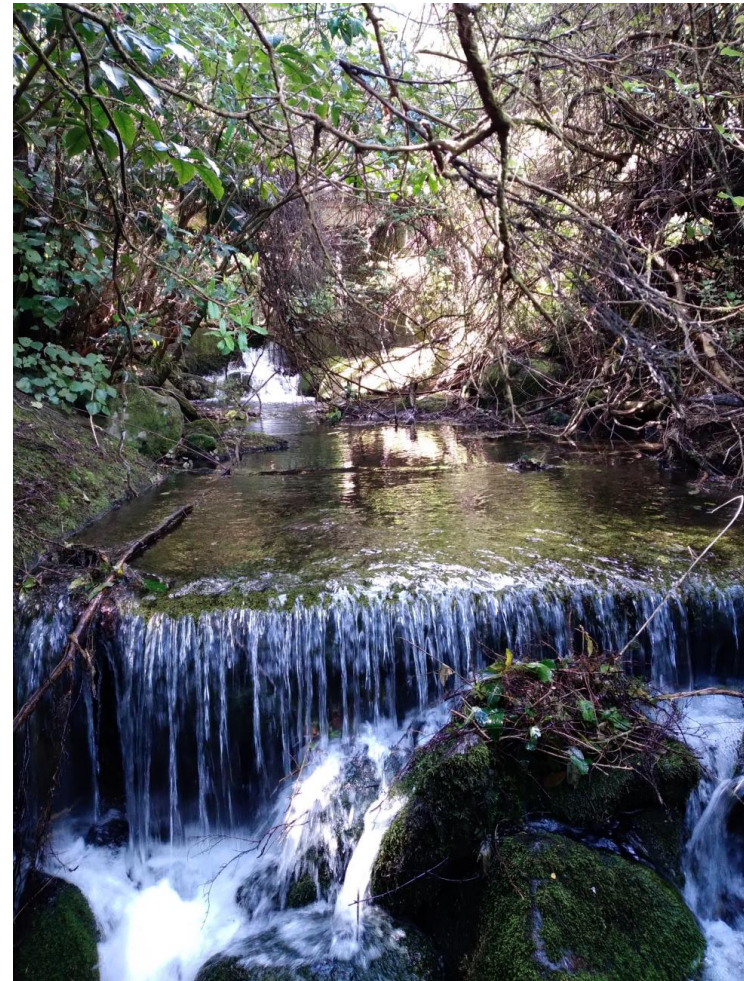
- FPAT to assess instream structures
- Utilising existing consent held by Environment Canterbury to enable works on the ground
- Applications to the Fish Habitat Fund to help with costs (if successful)



Allandale Stream, Living Springs



Okuti River near Reynolds Road Bridge



Recent projects that have received FH funding

- Living springs weir, aim to improve upstream passage for inanga in particular. Floating fish ramp
- Otuki Weirs – investigation and solution design (on site works not required)
- Contribution to CC and BP fish barrier prioritisation and monitoring (fish monitoring at 11 sites)
- Ki uta ki tai approach to fish passage in Whakaraupō - PHASE 1
- Kaituna valley branch 6 bridge remediation using a constructed fish ramp
- Walnut Stream – fish passage remediation over concrete cascade with spat rope
- Te kōawa ika o Wairewa – designing a long term recruitment and pathway for native fish into Te Roto o Wairewa

Challenges

- Uncertainty in national direction relating to NES and NPS, long timeframes for Planning amendments
- Costs of remediation projects and limited funding available
- Limited experience in design and delivery of fish passage fixes (design and construction)

Next steps

- Continue work on Canterbury Fish Passage Action Plan, including community and stakeholder engagement, with a focus on prioritisation of catchments or zones
- Get Canterbury on the To Do List for the NIWA Shiny Map tool
- Watch this space for improved national guidance and direction

References / resources

<https://niwa.co.nz/freshwater/management-tools/fish-passage-assessment-tool>

<https://niwa.co.nz/freshwater/research-projects/new-zealand-fish-passage-guidelines>

<https://www.doc.govt.nz/nature/habitats/freshwater/fish-passage-management/>

<https://www.ecan.govt.nz/your-region/farmers-hub/farming-around-rivers-and-streams/managing-in-stream-structures/>

<https://www.ecan.govt.nz/your-region/your-environment/river-and-drain-management/climate-resilience-and-flood-protection-funding/fish-passage-remediation/>

<https://shiny.niwa.co.nz/barrier-assessment/>





*Taking action together to shape a thriving and
resilient Canterbury, now and for future generations.*

Toitū te marae o Tāne, toitū te marae o Tangaroa, toitū te iwi.

www.ecan.govt.nz

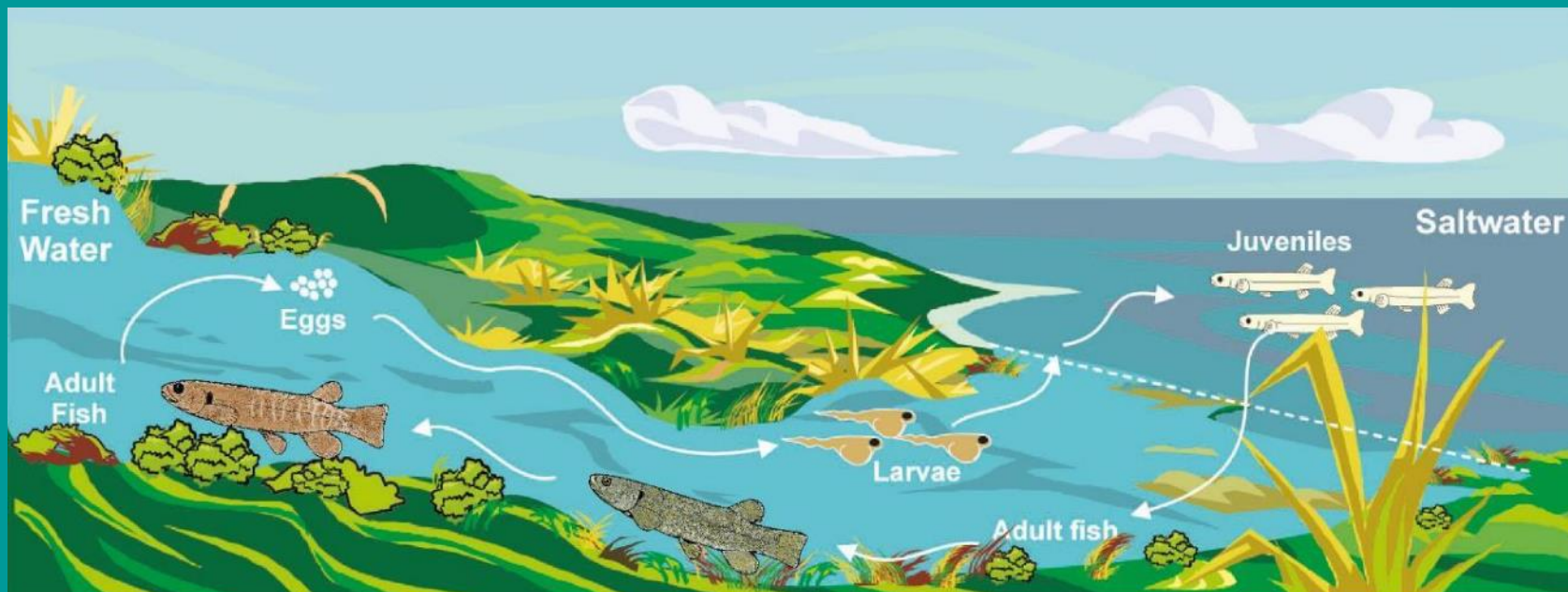


CCC Fish Passage Barrier Programme update

Katie Noakes
Principal Waterways Ecologist

Fish Passage in NZ

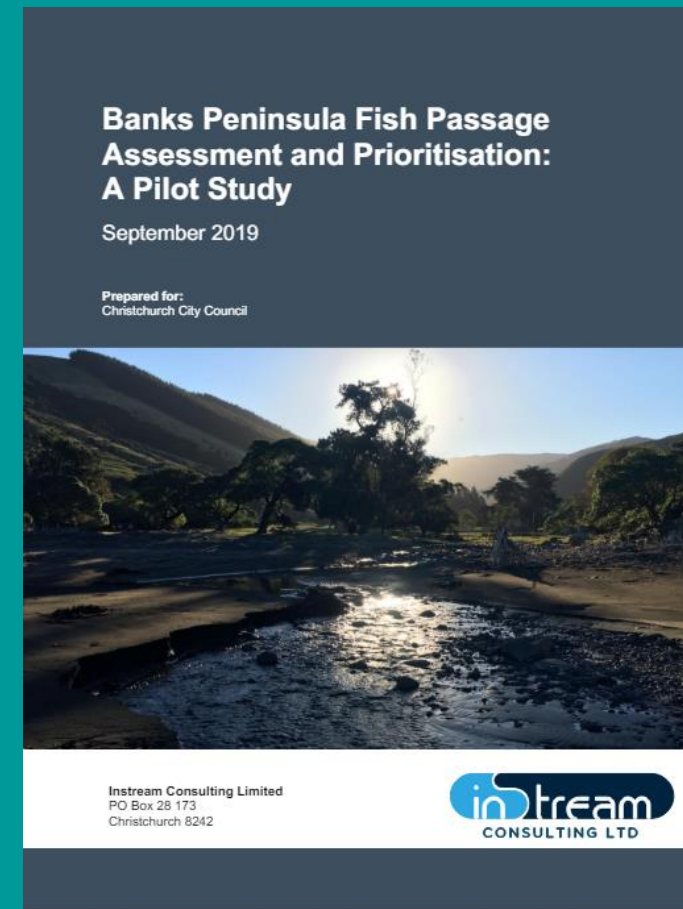
- Most of NZ's native fish are migratory
- Fish passage can be obstructed by natural barriers and artificial barriers
- Most of NZ's native fish are poor climbers



CCC's approach

- Regional Councils are required to produce a Fish Passage Action Plan for the region
- Within Christchurch District CCC is the main asset owner (culverts, weirs etc)
- Trial in 2019 in Banks Peninsula using NIWA Fish Passage Assessment Tool (FPAT) plus other site measurements
- Results showed the mix of assessment methods provided a good method for identifying and prioritising barriers within Christchurch with recommendations for future use
- In 2020 undertook same approach for barriers identified under CREAS

<https://ccc.govt.nz/assets/Documents/Environment/Water/Monitoring-Reports/2019-reports/Banks-Peninsula-fish-passage-assessment-and-prioritisation-a-pilot-study-2019.pdf>

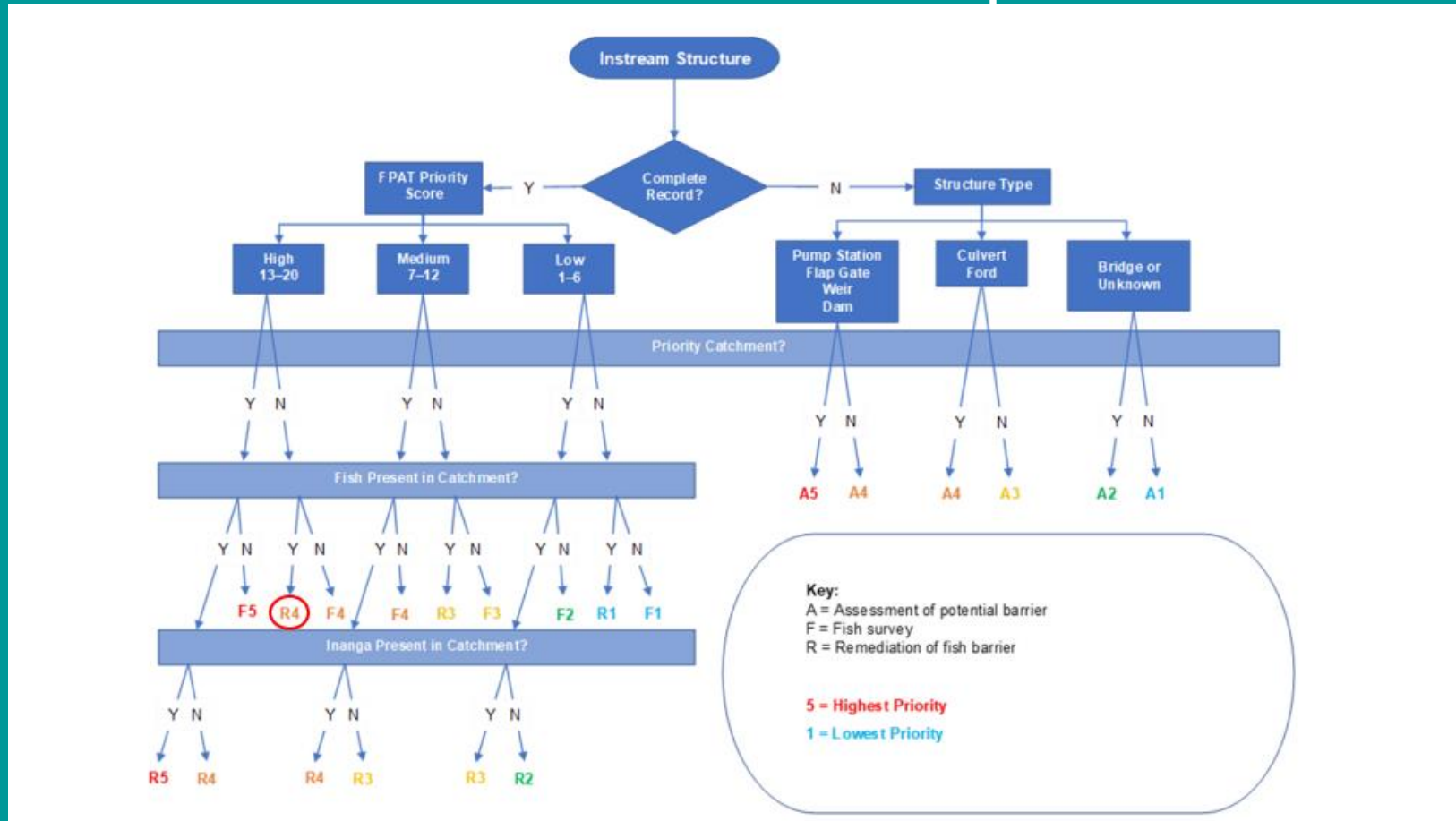




Fish Passage Barrier Prioritisation

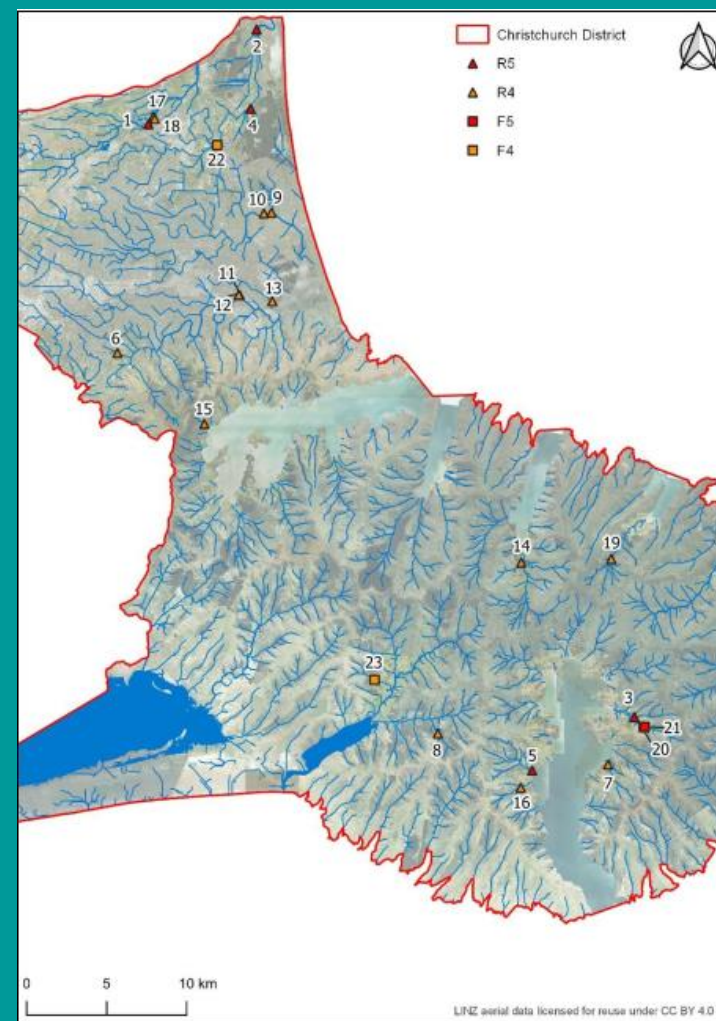
- Prioritisation model developed in 2021
- Used CCC asset databases, ecological data (FFDB)
- Classified as
 - a) requiring FPAT assessment
 - b) requiring a fish survey
 - c) requiring remediation
- Updated in 2022 to remove priority catchments and updated fishing results
- Further updated in 2023 to

2023 Prioritisation update



Priority ¹	Council	Other	Unknown	Total
R5	5	0	0	5
R4	14	11	2	27
R3	23	0	11	34
R2	30	2	11	43
R1	136	3	69	208
F5	2	2	0	4
F4	2	7	0	9
F3	54	5	10	69
F2	55	2	24	81
F1	220	19	91	330
A5	5	5	32	42
A4	13	54	81	148
A3	450	50	115	615
A2	64	0	155	219
A1	223	1	460	684
OS	36	0	0	36
Total:	1,332	161	1,061	2,554

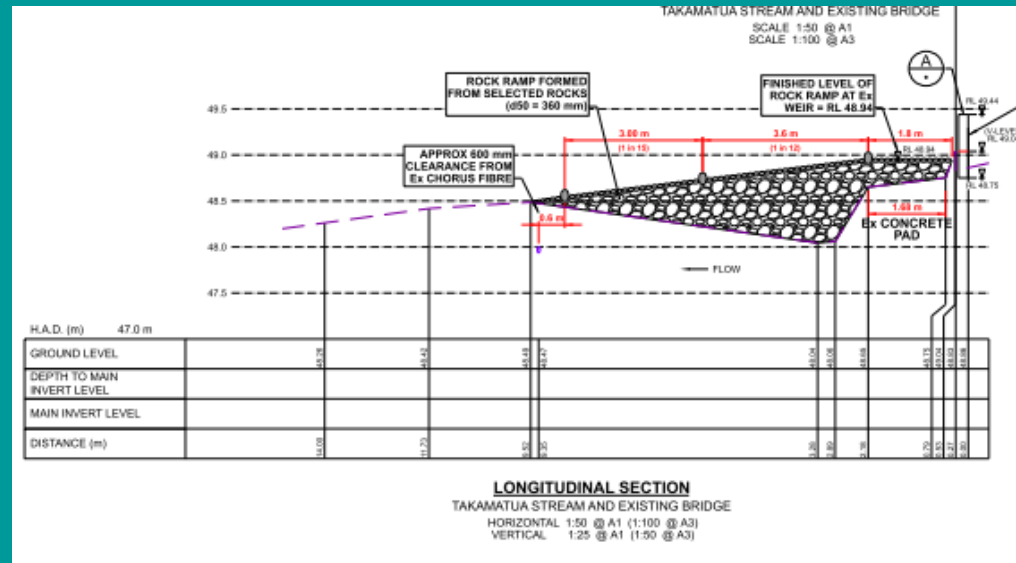
Note: ¹ 1 = low priority, 5 = high priority, 'R' = Remediation, 'F' = Fish survey, 'A' = FPAT Assessment, 'OS' = Offline Stormwater structure.







Site Code	Waterway (Catchment)	FPAT ID	Structure Type	Council Asset	Priority Score	Comments	Photographs
1	Ōtūkaikino Creek (Ōtūkaikino Creek)	130047	Weir	WcWeirs 199	R5	The most substantial barrier in the Ōtūkaikino catchment. Distribution of fish database records indicates that the structure is a total barrier for inanga. Velocities over fish ladder are too high for inanga.	
2	Pūharakekenui – Styx River (Pūharakekenui – Styx River)	131907	Flap gate with culvert	WcValve 27	R5	High risk structure near the coast. Recommend an investigation into the gate's operation (opening frequency and duration) and impacts on fish movements and salinity (and associated implications for plant communities and inanga spawning).	
3	Takamātua Stream Branch No 7 (Takamātua Stream)	1411	Weir	Unknown	R5	Upstream of CCC bridge A33. A fish survey in 2020 identified abundant native fish downstream, including bluegill bully, redfin bully, longfin eel, and whitebait. No fish were caught upstream, confirming poor passage.	
4	Sheppards Drain (Pūharakekenui – Styx River)	134654	Flap gate with culvert	SwPipe 37486	R5	A high-risk flap gate and culvert at the confluence between Sheppards Drain and the Styx River. A fish survey in 2023 confirmed that the structure is a substantial barrier for most fish species, including inanga (as per Section 3.1.3).	
5	Wainui Valley Stream (Wainui Bay)	1140	Weir	WcWeirs 242	R5	The weir overtops during some high tides and inanga have been recorded upstream. However, fish accumulate downstream of the barrier at low tides, increasing their risk to predation. Therefore, although some fish are passing the weir, it remains a partial barrier. It is a high priority for remediation because it is the closest barrier to the coast, with a large upstream catchment.	
8	Okuti River Branch No 9 (Lake Forsyth (Wairewa))	278	Weir	RAMM W11	R4	Weir situated under bridge W11, but not listed in Council's weir database. Likely owned by the Council. Would need to remediate at the same time as another (presumably private) weir immediately downstream. Environment Canterbury is currently investigating remediation of these weirs, however, no progress has yet been made on determining the ownership of the downstream weir. Fish surveys upstream and downstream of the weirs indicate that the structures are partial barriers for longfin eel and kōaro (<i>Galaxias brevipinnis</i>).	



Thank you
Questions?



The Groynes weir