



FISH SCREENS UPDATE 2018/19

1 What is this issue?

What are fish screens?

Fish Screens are mechanical structures, usually designed and engineered for a specific surface water take to ensure fish remain in the waterway from where water is being abstracted, without being harmed.

What are the issues?

- There have been requirements for fish screens on surface water takes since 1967, when the Water and Soil Act was enacted.
- These rules were strengthened when the Land and Water Regional Plan (LWRP) introduced new rules for fish screens in 2004. Because these rules have only applied to fish screens consented from 2004, meaning fish screen standards vary – many older screens may be compliant older consent conditions, but of limited effectiveness in protecting fish.
- Installing an effective Fish Screen is complex due to the many variables present at any surface water take. The LWRP, which regulates any new fish screen installation outlines (in Schedule 2) seven factors required for a fish screen to be effective.

2 What has been done to date?

Prior to 2018-19 season

Prior to 2018-19, when a shift to Audited Self-management of land-use consents made resource available for new compliance projects, Environment Canterbury's priority focus had been implementation and compliance of stock in waterways, dairy effluent, high-risk consents and water metering. When resource became available Council added fish screens to the list as the next most important priority, following stakeholder and community feedback. This led to a fish screen pilot programme to inform further work.

Pilot programme

The 2018 pilot programme was informed by a pilot project undertaken in early 2018. It highlighted a higher than anticipated number of issues with fish screen compliance and effectiveness.

The 922 consents with conditions relating to fish screens in Canterbury were prioritised by removing inactive consents and intakes below 10 litres per second (L/s), as takes with greater volume had more environmental impact. Overall, 85% of the water take by volume is via 50 consents, which was a key factor in prioritising fish screen assessments and monitoring from a list of 150 provided to stakeholders for feedback.

As well as stakeholder input, the pilot programme also involved

- continued support and engagement with the Fish Screen Technical Working Group. Environment Canterbury participates in the Fish Screen Technical Working Group separate to the Council's work on fish screen compliance. The FSTWG reports to the CWMS Regional Committee and works on the improvement of technical standards for fish screens.
- As well, a workshop was held with the engineering industry to discuss the Fish Screen Programme of works and constraints faced by the industry in upgrading ineffective and/or non-compliant fish screens.

Progress to date:

- Development of Standard Operating Procedures, including Health and Safety protocols.
- 32 screens were inspected in the pilot study
- 20 of the top 50 screens have been visited and compliance assessments made.
- 10 new screens have been submitted for design review.
- Compliance assessment times have dropped from an initial 80 staff hours per screen to about 10 hours now.

	2017-18	2018-19
Monitoring visits	32	20
In progress	-	49
Compliance achieved	-	3
Design reviews completed (i.e. new fish screen designs to be installed)	-	10

Insights and Learnings

The programme has highlighted several key insights:

- a. Screen compliance and effectiveness – and the assessment of it – is technically and legally complex
- b. The majority of fish screens visited can be deemed non-compliant.
- c. There are significant implications for industry in terms of the scale of upgrades likely to be required, and the related investment required by consent holders
- d. There is limited industry skill, knowledge and capacity to design and install improved screens.

Action is therefore focused on addressing these gaps.

More detail of the Fish Screen programme is provided in the table over the page.

DELIVERABLE	DESCRIPTION	PURPOSE	PROGRESS STATUS
Primary Deliverables			
Pilot Screens	Confirm compliance assessments, report status to consent holders and agree to action plan	Compliance monitoring	Ongoing Confirmed compliance status of all screens. Report status to consent holder and action plan to follow
Top 50 Screens	Site visits to 50 screens risk-prioritised with input from stakeholders, complete compliance assessments and report status to consent holders	Compliance monitoring	Ongoing Finalised Top 50 highest risk screens 20 of these 50 site visits and compliance assessments complete
Industry Engagement	Engage irrigation industry (including consent holders) and associated consultants	Working towards the creation with industry of an 'Action Planning' process that industry will manage	Ongoing Workshop undertaken September 2018 Further engagement planned for 2019
Stakeholder Engagement	Engage with stakeholders where appropriate (irrigation schemes, Zone Committees, Irrigation NZ, etc)	To ensure stakeholders interests are considered to maintain their support	Ongoing Liaison through Fish Screen Technical Working Group Stakeholder input into prioritising Top 50
Rock bund advice note	Development of a formal Advice Note for consent applications seeking to install rock bund (or similar) fish screens	To date rock bunds have not been able to be reliably tested to ensure effectiveness. The advice note informs applicants of the risk of installing rock bunds and that any new rock bund found to be ineffective may need to be replaced.	Implemented Advice note available to Environment Canterbury consenting teams from May 2019
Communications	To communicate project information	To educate and inform industry, stakeholders and the wider public	Ongoing External website updated Pilot report published
Associated Deliverables			
Clear Compliance Pathway	Initial scoping process and document followed by legal review	Ensure clear understanding of various consent conditions and the ultimate enforceability	Implemented Legal review completed by Wynn Williams July 2019
Standard Operating Procedures	Develop improved site visit operating procedures able to be endorsed by industry and fish screen working party	Robust and confident monitoring procedures and processes.	Implemented SOP trial with and endorsed by working party during field visits in September 2018
App Development	Develop apps to assist monitoring for 'open channel' and 'pump' fish screens	Ensure accuracy, consistency and efficiency of monitoring	Ongoing Apps developed by inhouse GIS and currently being field tested. Refinement underway
Action Planning	Develop process to ensure a clear, measurable and agreed to pathway to compliance	Achieve consent holder buy in, track and report compliance progress to ensure a fully compliant outcome	Ongoing Work commenced designing process for industry to take greater responsibility for presenting solutions to Environment Canterbury for non-compliant fish screens
Moderation Panel	Develop an internal moderation panel to assist in decision making and ensure consistency across monitoring	Support given to officers in making accurate and consistent decisions. Ensures reasonable outcomes from an organisational and customer perspective	Implemented Moderation panel process developed October 2018. All screens monitored requiring moderation reviewed by panel
Consolidation of Fish Screens Approach	Develop an approach to promote and encourage the consolidation of multiple fish screens into one screen where these opportunities exist	Allows for larger more technically robust solutions; Most cost-effective for individual consent holders	Ongoing Opportunity within pilot identified. Process to realise opportunity underway

3 Focus for 2019/20 and beyond

Following the pilot from the previous year, the 2018-19 programme comprised: we have redesigned our programme. Our approach will now:

1. Define an increased role for industry to develop solutions to issues
2. The development of a five-year programme

The five-year programme will include a catchment-based approach which looks at multiple fish screens on the same surface water source. In this scenario a collaborative approach of just installing one functional fish screen may be a better and more cost-effective solution than multiple screens.

2019-20

- Working towards the creation with industry of an 'Action Planning' process that will see Industry take on a greater role in developing solutions for approval by Environment Canterbury
- Environment Canterbury Action Plan Approval and Monitoring
- Trial New Action Planning Process
- Inspection and Consent Monitoring Report (CMR's)
- Recommence Inspections and Monitoring of Action Plans

2020 onwards

- Inspections of Fish Screens
- Monitoring of Action Plans

" The five-year programme will include a catchment-based approach which looks at multiple fish screens on the same surface water source. "

4 In Summary

Following the pilot from the previous year, the 2018-19 programme comprised:

- Focusing on the top 50 takes
- Developing systems and processes

The results of the programme to date will inform a package of improved solutions focusing on a greater role for industry and addressing the complex technical and legal issues highlighted.

The programme for 2019-20 will comprise:

- Addressing all consents in progress – ensuring action plans are in place to address compliance issues
- Defining areas where industry resources can be utilised to resolve issues (instead of Environment Canterbury resources)
- Development of a five-year programme that will address fish screens on over 95% of the consented surface water takes.

