



Earth Sciences
New Zealand

HIGH FREQUENCY WATER QUALITY FIELD OPERATIONS GUIDANCE

An Earth Sciences New Zealand-led project to support anyone wishing to deploy water quality sensors in rivers, lakes or estuaries.

THE PROJECT

This MBIE Envirolink Tool will develop national guidance to support field operations of high frequency water quality (HFWQ) sensors used for in-situ monitoring in rivers, lakes and estuaries. The project will deliver best practice guidance to support data quality assurance and field operations. The detailed technical knowledge will come from experienced sensor users. The guidance will sit alongside available NEMS and provide 'how to' guides for technical staff to shorten the learning curve for new users, accelerating the collection of high quality HFWQ data at regional and national scales.

The project will support field operations for dissolved oxygen, turbidity and nitrate.

PROJECT COMPONENTS

1. Deployment planning – Reliable deployment guidance will save hours of time and effort spent on designing sensor installs and reduce the likelihood of deployment failure due to poor design.

2. Data quality assurance (QA) – Guidance is required on lab and field operations to support the collection of high quality HFWQ data. Careful planning of sensor placement, and collection of verification data and metadata is required.

3. Field operations – Detailed technical guidance is required on field operations to ensure data collection is cost efficient. Sensor installation, cleaning and maintenance, verification & representativeness checks form key parts of any quality assurance/quality control programme.

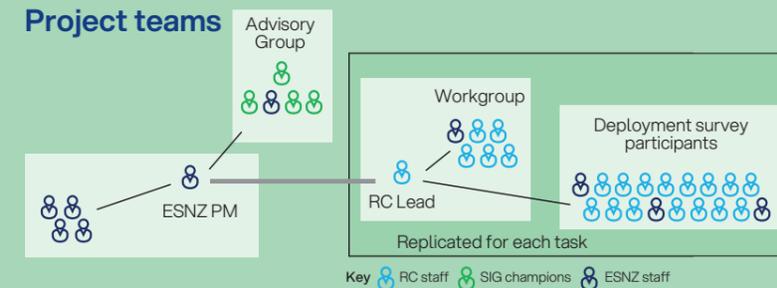
Opportunities for regional council staff

This project is about researchers and experienced regional council staff working together to summarise knowledge, experience and information. We need your expertise, so please volunteer:

- Contribute to the deployment design surveys (<1 hour) by sharing your methods, their suitability & design details and photos.
- Share photos of your field operations. Check out the short online workshop on taking photos to support science run by Lana Young in 2024 (HFWQ Photo Workshop recording on Vimeo).
- Share methods you use and/or Standard Operating Procedures you have modified or developed.
- Volunteer for workgroups – for each task (DO, turbidity, nitrate) we are looking for six experts with 5+ years' experience operating HFWQ sensors who can contribute 10-15 hours to surveys, workshops and reviewing the draft guidance.

PROJECT PROCESS

The project will involve multiple teams or workgroups. The project Advisory Group will help ensure that the project delivers 'fit-for-purpose' guidance and liaise between SIGs and the Earth Sciences NZ project team to ensure good information flow. The Advisory Group regional council representatives are: Ed Brown (Project Champion, WRC, Environmental Data SIG), Coral Grant (AC, SWIM SIG), Tina Bayer (ECan, Lakes Focus Group) and Chris Eager (WRC, Coastal SIG). The Earth Sciences NZ project team is led by Lucy McKergow (Project Manager).



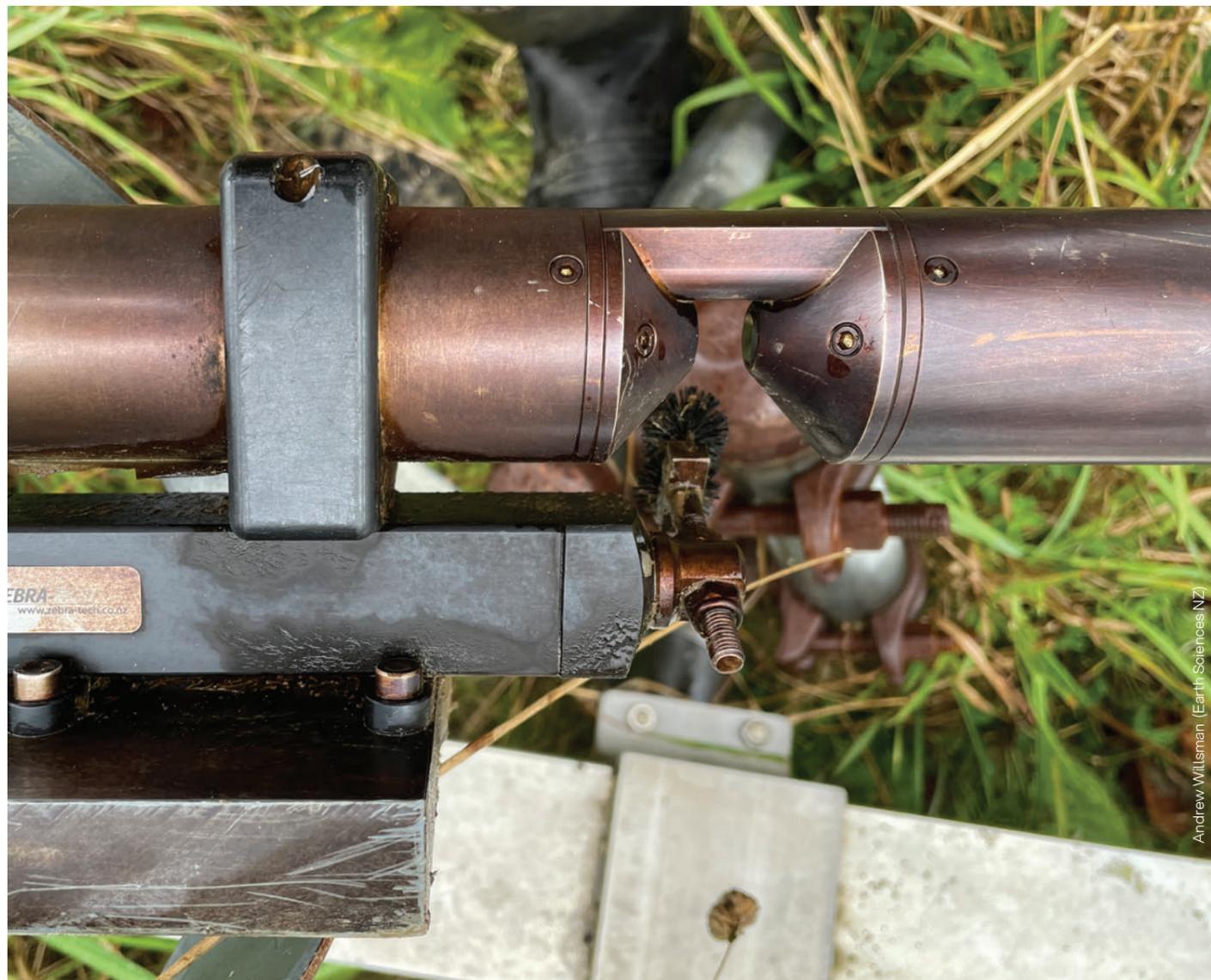
The two-year project will use a modular approach to deliver guidance – with several tasks running concurrently. This will enable the task teams to deliver their finalised guidance during the life of the project. The project started in July 2025 and will finish in June 2027.

Guidance timeline



Each task will start with recruiting workgroup and workshop participants. Workshops will be used to share knowledge and experiences, develop guidance templates, and identify potential case studies. Guidance developed in each task will be available for review by interested people before the final guidance is delivered.

Guidance development process



Andrew Willisman (Earth Sciences NZ)



Stephan Heubeck (NIWA)



Chris Eager (NIWA)



Brandon Goeller (Earth Science NZ)

PROJECT CONTACTS

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Find out more or sign-up to our regular e-newsletter at niwa.co.nz/HFWQ

PROJECT PARTNERS

