

Effective Farm Environment Management under the RMA

November 2024 Two-Day ENVIROKNOWLEDGE® Training
For the Field, Advisory, Science, Planning, Consents,
Compliance and Consultancy Professionals

By

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ENVIROKNOWLEDGE®

HIGH QUALITY RMA & ENVIRONMENTAL KNOWLEDGE TRANSFER

**Understanding the True Science of Farm Environment Management
under the Resource Management Act**



Why is this training crucial?

Under the *Resource Management Freshwater Farm Plans Regulations 2023*, Freshwater Farm Plans (FWFP) are required to manage catchment water quality or Freshwater Management Units (FMUs). However, in view of the government review of the above regulations, most regional councils have paused the implementation until the revised regulations are released. Similarly, and owing to the impending replacement of the *National Policy Statement for Freshwater Management (NPS-FM 2020)* most councils have paused the freshwater planning process.

In the meantime, deteriorating freshwater quality is ongoing which requires urgent actions. Councils could continue with effective non-regulatory measures to improve the water quality. However, poor measures or actions based on poor scientific rationales will result in little or no changes to freshwater ecosystems. Actions based on the existing poor rules will also have the same negative outcomes, as such win-win non-regulatory actions must be recognised and actioned until the government regulations are in place.

The main objective of this advanced training is to enable the attendee understand catchment water quality processes in the context of farming as land use and empower to differentiate between effective and non-effective actions. ENVIROKNOWLEDGE® actively advocates for a nationally consistent use of effective and scientifically proven actions.

Who can benefit?

- Regional Council -Field or Land Management, Science, Planning, Consents, and Compliance Staff
- Farm water quality advisors
- Consultants (both technical and planning)
- Farmers with scientific interest
- Soil and water scientists
- RMA Technical Hearing Commissioners and MfE, PCE, MPI and EPA policy and technical staff

Topics not to be missed

- Farm water and land management in the legal context of the RMA, NPS-FM (2020), NES-F (2020) and RM (FWFP) Regulations 2023, regional planning, consents process and compliance
- The science of N & P processes in *soil, water and farm effluent* on farm – information provided is well-researched, original and authoritative and not found in other courses, textbooks and workshops
- The science and effectiveness of existing nutrient leaching/runoff mitigation options
- The science and mitigation of non-nutrient farm contaminants
- Technical assessment of limitations and strengths of Overseer
- Is it practically possible to reduce nitrate leaching and P runoff from intensively farmed catchments without reducing profitability?

About ENVIROKNOWLEDGE®: An independent high quality NZ consultancy which specialises in training, research and advisory in RMA implementation (effective consents process and consents monitoring), consent process, compliance monitoring, nitrogen in the environment, wastewater treatment technology and farm environment management to improve environmental quality.

About the workshop provider: Selva Selvarajah (PhD in Soil Science, Lincoln University) has 21 years of regional council experience (13 years as Director Resource Management). He is a hands-on RMA practitioner with sound scientific and legislative knowledge in soil, water and wastewater management and has written >100 reports, newspaper articles and publications (visit www.enviroknowledge.co.nz for reports and publications). He has excellent presentation (6 keynote papers & presentations in NZ and overseas) and training (trained more than 450 local government, consultancy, industry and CRI professionals since 2015) skills. He was the first expert in New Zealand to model N loading for farm dairy effluent in 1994 (for Waikato Regional Council) before Overseer® was developed (<https://www.researchgate.net/publication/269337448>). His workshops are of high quality, well-researched, up-to-date and presented (e.g., “Advanced Nitrogen in the Environment”, “Effective Regional Council Consents Process”, “Consents Monitoring under the RMA” and “Wastewater Management under the RMA”). He holds Advanced Sustainable Nutrient Management Massey University and Making Good Decision Chair (Hearing Commissioner Chair) certificates.

Please register with your full name, position, name of your employer and location you wish to attend at sustain@enviroknowledge.co.nz. *Seats are limited to 15 per location.* You can request for any further information on the workshop using the above e-mail address or by calling on 03 4776111. For details on onsite group training download www.enviroknowledge.co.nz/assets/Uploads/Workshops/ENVIROKNOWLEDGE-Training-and-Services-Compendium-for-ALL-Clients-January-2024.pdf

¹Workshop fee/person:

\$1475 (excluding GST) (2018 price)

Scheduled workshop time:

9 am to 5 pm daily

Registration final date:

8 November 2024

Venue	Workshop dates
Dunedin – Alhambra Oaks Motor Lodge 558 Great King Street	14 & 15 November 2024
Christchurch – Russley Golf Club, 428 Memorial Avenue	19 & 20 November 2024
Hamilton – Aaron Court Motor Lodge, 250 Ulster Street	25 & 26 November 2024

¹Workshop fee Includes lunch, tea/coffee, hard copy colour 2024 edition manual (160 pages) with over 150 references, certificate and 3-month technical support on workshop contents and does not include the cost of accommodation. Discount:-5% for 3-5 and 10% for ≥6 (discount applies to attendees from the same employer).

EFFECTIVE FARM ENVIRONMENT MANAGEMENT

ENVIROKNOWLEDGE® November 2024 WORKSHOP FOR THE FIELD/LAND MANAGEMENT, SCIENCE, CONSENTS, COMPLIANCE, PLANNING and CONSULTANCY PROFESSIONALS

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 - b. Te mana o te Wai
 - c. Mātauranga Māori and Te ao Māori
5. NPS-Freshwater Management 2020
 - a. Complex process of giving effect to NPS-FM
 - b. Nutrient Management
6. NESs for freshwater 2020
7. Stock exclusion regulations 2020
8. Freshwater Farm Plan Regulation 2023
9. RMA planning basics for farming
 - a. Water allocation
 - b. Minimum flows and aquifer level restrictions
 - c. Land use and discharge – nutrient management
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 - Discharge
 - Milestone case study on land use and discharge rules
10. RMA consents basics for farming
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 - b. Microbes in the environment (soil, river lakes and wastewater)
14. Soil chemistry
 - a. Soil charges
 - b. Buffer capacity
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15. Water chemistry
 - a. Nutrients and chemical status
 - b. Redox conditions in groundwater
16. Soil biology including earthworm activity
 - a. Soil carbon and microbial activity
 - b. Earthworms
17. Understand N and P forms clearly
 - a. Nitrogen basics
 - b. The N species you must know
 - c. P basics
 - d. P form and availability in soil and water
18. Phosphorus in soil
 - a. How and which forms of P are held in soil?
 - b. Significance of Olsen-P in NZ

- How is Olsen-P measured and reported?
 - Olsen-P thresholds for pasture production
 - c. Factors affecting soil-P availability and pasture uptake
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 - Plant factors are ill-studied but critical
 - Fertiliser types
 - P-assimilation by microbes (or immobilisation)
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 - d. P losses from soils
 - e. Should we continue with Olsen-P as plant available-P indicator?
- 19. Nitrogen (N) in soil, water and wastewater
 - a. Organic-N processes in soil, wastewater and water
 - b. N assimilation or immobilisation by microbes
 - c. How is nitrate formed in soil, water and wastewater?
 - d. Why is nitrate decomposition (denitrification) important?
 - e. How is N fixed biologically in soil and water?
 - f. Does ammonia volatilisation matter?
 - g. Can we continue to ignore atmospheric N deposition?
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 - Controlling N sources
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 - Cyanobacteria
 - N:P ratio and water quality
 - k. Summary N processes
- 20. Impacts of non-nutrient farm contaminants on soil and water and water quality limits
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- 22. Sustainable farm effluent management
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 - Farm dairy effluent (FDE)
 - Piggery effluent
 - b. The science of farm dairy effluent treatment ponds
- 23. Understanding livestock productivity
 - a. Breeding potentials and rearing
 - b. Feed requirements
 - c. Fertiliser-nitrogen management
 - d. Stocking rate management
 - e. Soil management
- 24. Use of Overseer as a nutrient model
 - a. Understanding data and model terminology
 - b. Overseer evolution
 - c. Overseer coverage of land uses
 - d. How does it work?
 - e. Constraints
 - f. How are nutrient losses calculated?
 - g. Data management
 - h. Overseer version 6.3.0 data outputs for a trial farm
 - i. Overseer version 6.3.0 nitrate leaching and P runoff sensitivity assessment
 - j. Overseer data output uncertainty assessment
 - k. N leaching assessments derived from models have limited use in scientific research
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 - Floating wetlands
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