

Dr Jim G. Cooke

Certified RMA Decision Maker with Environmental Science Expertise

jim@rmascience.co.nz | 021 738 587

www.rmascience.co.nz



Education

DPhil, University of Oxford, UK, 1986

MPhil, Environmental Science, Massey University, 1977

DipAgSc (Div I), Soil Science, Massey University, 1974

BSc, Earth Sciences/Biological Science, Waikato University, 1973

RMA

Certified RMA Decision Maker with Chair's endorsement (certification expires 31/12/2020)

Professional Organisations

Member, International Water Association, since 2003.

Board member, specialist group on Diffuse Pollution, 2006–2011.

Co-chair/organizer, 15th International Conference on Diffuse Pollution, New Zealand, 2011.

Chair, IWA NZ committee, 2011–2013.

Member, NZ Freshwater Sciences Society, since 1993.

Experience, RMA decision making

Last 5 years

Independent commissioner (Chair). Open Country Dairy Waharoa, discharge consents to water and air. Waikato Regional Council, 2019–20.

Environmental science expert and Chair of 2-person DMC to consider applications to discharge treated dairy factory wastewater to the Waitoa River, and associated discharges (odour and biogas) to air. Hearing to commence March 2020.

Independent commissioner. Featherston WWTP irrigation consents. Greater Wellington Regional Council, 2018–20.

Environmental science expert on a 3-person panel hearing applications by South Wairarapa District Council to irrigate treated (oxidation pond) wastewater onto land adjacent to the WWTP. Hearing currently deferred to enable SWDC more time to consult with the community, and for additional information on groundwater and public health issues.

Independent commissioner. Talley's Ltd, fish and food processing consents, Motueka. Tasman District Council, 2017.

Water quality expert on a 3- person panel hearing applications by Talley's Ltd for air and water discharge consents, occupation of coastal land (diffuser) and ancillary consents. The principal issue was the application of s107 of the RMA relating to discharge of conspicuous colour, oil and grease to the coastal environment. The consents were granted with conditions for a 3-year term, rather than the 35-year term sought by the applicant. The applicant has appealed the decision to the Environment Court.

Independent commissioner. Ostern Quarries Ltd, various consents in relation to various quarrying activities near Otorohanga. Waikato Regional Council and Otorohanga District Council, 2017.

Environmental science expert on 3-person panel considering applications by Ostern Quarries Ltd for continued operation of quarrying activities. The principal issues considered were noise (explosives and quarry traffic), dust, sediment discharge to stream, access and pa sites. Consents were granted with conditions.

Independent commissioner. AFFCO Feilding Meat Works, resource consents. Horizons Regional Council, 2016–17.

Freshwater management specialist on 3-person panel deciding on applications from AFFCO (NZ) Ltd for continued operation of its Feilding Meatworks. The consents sought included discharge permits to water (Oroua River), land (land disposal), groundwater (seepage for treatment ponds), and air (odour). The applicant's proposal included an expanded irrigation area and disposal to the Oroua River only when flow > 20th Flow Exceedance Percentile. The principal water management issues considered were effects of discharge on Oroua River (nutrients, periphyton growths, public health, cumulative effects), and effects of N leaching from treatment ponds on groundwater. Other issues that were considered important in the decision were: (i) Maori values and perspectives with respect to the Oroua River, and (ii) the value of the existing investment and the positive effects on the local economy. The consents were granted for a term of 19 years (common expiry date with other discharges to the Oroua) rather than the 35 years sought by the applicant.

Independent commissioner. AFFCO Horotiu Meat Works, re consenting, Waikato Regional Council, 2016.

Environmental science expert on 3-person panel considering applications by AFFCO NZ (Ltd) for continued operation of its Horotiu Meat Works. The application included water permits, land use consents, and discharge permits (14 applications), the most contentious of which was the discharge permit for treated wastewater to the Waikato River. Environmental science issues that had an important bearing on the decision were: river water quality, particularly the relative sensitivity to nitrogen and/or phosphorus, aquatic ecology (effects on migratory fish, benthic ecology, algal ecology), public health microbiology (whether *E. coli* have any relevance as a pathogen indicator and/or whether a full quantitative microbial risk assessment [QMRA] should be carried out), air quality (odour), soil science (fate and transport of contaminants through soils from pond leakage).

Independent commissioner. Motuapa Marina, Lake Taupo consent application. Waikato Regional Council, 2015.

Environmental science expert on 3-person panel considering an application from Department of Internal Affairs to construct and operate a new marina at Motuapa, near Turangi. An existing marina, which has poor water quality, operates under permitted activity status. The principal issues under dispute were: (i) whether the permitted activity status remained for the new marina, (ii) the

effectiveness of a proposed recirculation system within the new marina and conditions required (or otherwise) to monitor its effectiveness, (iii) the impacts of a reclamation on a rare 'turf' species, *Isolepis fluitans*, and the effectiveness of biodiversity offsets proposed by the applicant. Environmental science expertise that was important in the decision-making process included lake and embayment water quality, aquatic plant biodiversity, and conservation biodiversity offset principles.

Older cases

Independent commissioner. Mangatangi Coal Mine, consents. Waikato Regional Council and Waikato District Council, 2013.

Water management/ecology expert on panel considering applications by Glencol Ltd (Fonterra subsidiary) to develop and operate an open cast coal mine near Mangatangi. The principal technical issues considered were air quality (coal dust and the potential for health issues amongst local residents), environmental flows and abstractive volumes (required for dust control), and water quality of discharges (principally boron, and suspended sediment).

Independent commissioner. Kapiti Coast District Council, river recharge with groundwater. Greater Wellington Regional Council, 2013.

Environmental science expert on panel considering application for consents from Kapiti Coast District Council to recharge the Waikanae River with groundwater pumped from the Waikanae deep aquifer to maintain minimum flow levels at times of heavy abstractive demand for the Kapiti Coast drinking water supply. Principal environmental science issues considered were: (i) the potential for algal proliferation in the lower Waikanae River (especially cyanobacteria), (ii) potential for saline intrusion from excessive pumping, (iii) migratory fish avoidance; and (iv) water levels of significant wetlands.

Independent commissioner. RH Robertson, application for irrigation consents. Environment Canterbury, 2013.

Sole commissioner hearing applications (take and use, dam, discharge) for a deer farm in the Hakataramea Valley. Principal issues considered were environmental flows, aquatic ecology effects, bore water supply, dam safety.

Independent commissioner. Otorohanga wastewater discharge consents. Waikato Regional Council, 2012.

Environmental science expert panel member for application (renewal) to discharge treated wastewater to the Mangarongo Stream (tributary of the Waipa River). Principal issues considered were water quality, particularly bacteria and public health issues, and nutrient.

Board of Inquiry. Upper Waitaki dairy effluent discharge consents, 2010.

Appointed by the Hon Nick Smith to a Board of Inquiry into effluent discharges arising from 'cubicle dairy' proposals in the Upper Waitaki. (Chaired by Judge Borthwick). The applicants withdrew these landuse consent applications pending the results of the water take applications considered by Environment Canterbury.

Independent commissioner. Upper Waitaki resource consents. Environment Canterbury, 2009–2012.

Water quality expert member of a panel considering the application for 61 consent applications to take and use water, and associated land use consents. The main issue was the cumulative effects of irrigation on the trophic status of Lake Benmore and the water quality and ecological effects (periphyton) on associated inflowing rivers and streams, and groundwater. Other significant effects considered included landscape (greening of Mackenzie Basin), water resources (flow allocation), farm management practices and on-farm monitoring, economic costs and benefits, terrestrial ecology, and Maori cultural values. Drafted environmental science chapters of Part A (catchment wide issues) and many of the individual decisions.

Other RMA support projects

Advisor to Hamilton City Council on private plan change sought by Perry Group to enable Te Awa urban development and adventure park (2018–19).

Advisor to HCC on the likely state of urban lakes proposed by Perry Group as a consequence of the development, in particular, their trophic state, potential mitigation strategies, and triggers that could be used in the event that monitoring showed declining water quality.

Implication of Healthy Rivers 1 for Port Waikato. Waikato Regional Council (2016–17).

Led a think piece on the implications of objectives, policies, and rules likely to be in place from Healthy Rivers 1 (Waikato River) on the Coastal Marine Area (CMA) at Port Waikato, and what learnings can be applied to future Healthy River Plans in terms of management of the CMA.

Knowledge-based monitoring frameworks for estuaries. Waikato Regional Council (2016–17).

Member of Streamlined Environmental team that developed a flexible framework for identifying and prioritizing sites for data collection within the CMA, based on an understanding of key drivers in the catchment, which integrates a range of interrogation and decision support tools, and that accommodates variations in data quantity/quality.

Studies on nitrogen fate and transport from treated wastewater applied to land to support resource consent applications by Water Care Services Ltd (2015–2018).

Led a major study by Streamlined Environmental team on the fate and transport of nitrogen irrigated to Omaha Beach Golf Course and a eucalypt/native forest stand on opposite sides of Whangateau Harbour. Studies included intensive biochemical rate measurements (denitrification, nitrification) supported by chemical measurement, the construction of a probabilistic fate model, and the presentation of evidence at the consent hearing.

Section 127 review of discharge conditions at Pukete WWTP. Hamilton city council/MWH (2016).

Provided independent scientific assessment for HCC's application under s127 RMA for a review of consent conditions.

Case manager, s128 review, Waikare/Whangamarino. Department of Conservation (2014–15).

Assisted the Department on developing a case strategy to obtain better conditions to reduce the impact of sediment discharge from Lake Waikare to the Whangamarino River and (incidentally) to the

Whangamarino wetland. Liaised with expert witnesses and reviewed evidence to ensure it was consistent with the strategy and the Barrister handling the case on behalf of the Department.

ICMP for Rotokauri urban development. Hamilton City Council (2014–15).

Led a Streamlined Environmental team assessing the water quality impacts of the Rotokauri structure plan implementation to support an integrated catchment management plan for the scheme. The results of the study were presented at the 2017 Water New Zealand Stormwater Conference.

Regional council freshwater management methodologies – accounting systems and limit setting. Ministry for the Environment (2013).

Water quality expert team member of NIWA-led project assessing regional council readiness for limit setting as defined by the National Policy Statement for Freshwater Management, and the water quality and quantity accounting requirements of the 2013 and Beyond Water Reforms.

Expert witness, proposed Canterbury Land and Water Regional Plan. Fish and Game, North Canterbury (2013).

Presented water quality evidence to Commissioners deciding on the proposed plan, utilising modeling results from Dr Tim Cox on the potential effects of different irrigation scenarios on nitrogen concentrations and loads in the Ashburton, Selwyn-Waihora, and Rakaia Rivers.

Independent chairman of Te Kauwhata Consultation Group. Waikato District Council (2011–2012).

The objective of the TKCG was to get sign-off from all parties to the interim continued discharge of Te Kauwhata’s treated wastewater discharge to Lake Waikare, while real and meaningful investigations proceeded on a land treatment option, and thus avoid the need for an expensive consent hearing and likely Environment Court appeals. Chaired a series of meetings between the council and submitters, mediated between the parties and provided an independent scientific view on the principal issue, which was the continuing deterioration of the lake. At the final meeting of the TKCG in February 2012, the submitters agreed to withdraw their submissions and WDC agreed on a staged approach for ceasing discharge to the lake over a 12-year period. WDC also agreed to provide funds for mitigation annually until the land disposal scheme is commissioned.

Scientific methods to support a proposed National Environmental Standard (NES) on Environmental Flows and Levels. Ministry for the Environment (2006–07).

Project manager for this project, which involved providing a road map for assessing environmental flows and levels in rivers, lakes, wetlands, and groundwaters to support the proposed NES for flows and water levels. The project also involved ensuring that there was a consensus view amongst experts drawn from NIWA, Geological & Nuclear Sciences, Cawthron Research Institute, Massey University, Aqualinc Research Ltd and Beca Ltd.

Definitions of ‘reasonable mixing’ and ‘mixing zone’. Auckland Regional Council (2007).

Led this project for Auckland Regional Council to derive a robust definition for inclusion in the Auckland Air, Land and Water Plan, taking both scientific and legal issues into account. Published as Auckland Council Technical Report 2010/045.