

THE AOTEAROA-NZ STRATEGY¹ FOR EMERGING CONTAMINANTS

PATUA TE TANIWHA KEI
TAMARIKI TONU

Assail the Leviathan
whilst it is young

Emerging Contaminants
Advisory Panel²

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Emerging Contaminants – A definition³

Emerging contaminants (ECs) are micro-organisms and chemicals that have historically not been considered contaminants, but have the potential to enter the environment and cause known or suspected negative impacts on the environment and/or people.

Emerging contaminants are not commonly monitored, but may be present in the environment on a global scale due to activities in our towns and cities, and our agricultural and industrial practices. In some cases, the release of the emerging chemical or micro-organism into the environment has occurred for a long time, but may not have been recognised until new detection methods were developed. In other cases, synthesis of new chemicals or changes in use and disposal of existing chemicals can create new sources of emerging contaminants.

Our Challenge

In Aotearoa-NZ, the main challenge we face with emerging contaminants is our poor understanding of them, and their potential to threaten the health and well-being of our people and unique environment.

¹ MBIE Endeavour contract CAWX1708 & MBIE Envirolink CAWX1614

² Disclaimer:

All members of the advisory panel participate in this project as individuals with the advice, opinions, or viewpoints given in their personal capacity only, and should not be considered either as endorsed by, nor in any way representative of the views, policies, or strategies of their employers, or any organisation, government agency, business, trust, iwi, hapū or group to which they are affiliated.



The effects of emerging contaminants on people, ecosystems and livelihoods are being documented elsewhere in the world. However, in Aotearoa-NZ research and information about emerging contaminants is limited and un-coordinated. There are currently few studies examining their role and transport in our ecosystems, or food chains and the risk they pose to our economic and cultural wellbeing. We need to move quickly and purposefully to understand current effects and how to manage these and any future risks.

The Aotearoa-NZ Strategy for Emerging Contaminants⁴ is a collective initiative that will enable the dissemination of information to advance the understanding of the effects of emerging contaminants in Aotearoa-NZ. The Emerging Contaminants Advisory Panel is comprised of expert colleagues who are currently identifying the key environmental issues related to emerging contaminants.

Tiakina te Mana o Te Taiao – He Oranga Mutunga Kore

Protect the inherent authority of our environment as wellbeing for the future

We embrace a holistic environment approach that advocates respect for Aotearoa-NZ's land, freshwater, atmosphere, coastal and marine areas, including its wildlife and people.

The national strategy on emerging contaminants is important to all and aimed at collectively recognising the national significance of our environment and how new threats to its well-being are already in Aotearoa-NZ.

This strategy acknowledges that emerging contaminants may not only negatively affect our environment, but also a range of community and tāngata whenua values and aspirations. It is important that these values and aspirations are supported, and that the ability of our environment to provide for them continues over time.

³ This definition is derived from the U.S. Geological Survey web site <https://toxics.usgs.gov/investigations/cec/index.php>

⁴ Strategy Aim: Management and awareness of the risks and impacts of emerging contaminants to Aotearoa-NZ's people and environment

VISION

A healthy Aotearoa-NZ safeguarded against emerging contaminants

Whakahaumarutia to tātou taiao i te aranga ake o ngā tāwahawaha kikino

MISSION

Protecting Aotearoa-NZ's prosperity, heritage and health through leadership, transparency and collaboration on the threats of emerging contaminants

Nā te hautūtanga, kōrero mahuki me te mahi ngātahi ka tiakina te oranga, te taurikura me te koiora o Aotearoa whānui mai i ngā tāwahawaha kikino

OUR GOALS

Goal One

To engage with Māori and stakeholders to improve knowledge and understanding about the increasing role and negative impact of emerging contaminants in an effective and timely manner, in order to protect Aotearoa-NZ's natural environment which underpins our cultural heritage, health and prosperity.

- Ensure Māori in partnership with government are regularly informed about the activities of the Emerging Contaminants group, new research outcomes and supporting information.
- Ensure that Māori and all end-users are provided with relevant contemporary information and advice based on quality science-evidenced data.

Outcomes:

- In partnership with Māori, end users and government are engaged with, and using critical communications pathways to deliver relevant and useful advice.
- International knowledge and research is identified, collated, and communicated to Aotearoa-NZ decision-makers.
- Regular updates are provided to the community on emerging contaminants found in Aotearoa-NZ's environment, and their known effects.

Goal Two

In partnership with Māori identify research and development possibilities for improving our knowledge of the toxicity of ECs to Aotearoa-NZ's people and environment.

Ensure that Aotearoa-NZ has the people, the abilities, the resources and the tools to deliver quality science that advances the knowledge and improves the management of the risks of emerging contaminants to Aotearoa-NZ.

Outcomes:

- Emerging contaminants identification and management is prioritised for Māori and government as well as industry and other productive centres through multi-criteria decision support tools and effects-based prioritisation framework.
- A communication portal / information sharing platform is established for interested partners and agencies, with improved access across multiple information platforms (e.g. science articles, grey literature and information items).
- A specific research programme of work is established to enable the prioritising emerging contaminants research for use in resource management decisions and in aiding policy development.
- Emerging contaminants characterisation remains relevant, current and accurate via the development of a relevant and 'fit for purpose' emerging contaminants framework, which includes annual reviews and updates.

Goal Three

In partnership with Māori provide direction, leadership and support to enable Aotearoa-NZ to understand the effects of ECs on Aotearoa-NZ's people and environment.

- Provide in partnership with Māori, leadership that ensures strategic connectivity and clear communication to industry, government, and other stakeholders about issues on the topic of emerging contaminants.
- Provide direction and support through relevant best quality national and international data.

Outcomes:

- Māori are proactively involved in mitigating the negative impact of emerging contaminants on the environment through their mātauranga Māori (inherent knowledge), tikanga (customary processes) and wawata (economic, environmental, cultural and social aspirations).
- Leadership is underpinned by quality international data and targeted national emerging contaminants research.
- Launch of the Strategy and its socialisation.
- Strategic linkages and transparent communication result in a greater awareness of the risks of emerging contaminants to Aotearoa-NZ.
- Policy and management sectors develop appropriate and timely responses to manage emerging contaminants in Aotearoa-NZ.

Establishment of our Strategic Approach

Ka para te huarahi – Paving the way

Introduction

Emerging Contaminants (ECs) include micro-organisms, and natural or manufactured chemicals found in household and personal care products, pharmaceuticals, and agrichemicals. At present their use and discharge are largely unmonitored and poorly understood in Aotearoa-NZ.

ECs are released into the environment from a range of personal and industrial activities. International research confirms the widespread distribution of ECs around human settlements and their detrimental impacts on the health and resilience of freshwater, marine, forest, and land ecosystems. In Aotearoa-NZ, our land-based food production and processing, and our fishing and aquaculture industries are vulnerable to EC contamination. This could put our economy at risk from future trade barriers.

Australasian regulators, industry and communities are concerned about EC risks and knowledge gaps. Knowledge gaps about ECs currently prevent any focussed assessment of their impacts on our physical, environmental, and economic wellbeing.

Who are we?

The Emerging Contaminants Advisory Group is an Australasian multi-disciplinary team made up of professionals who work in science, policy, management, community and collaboration. We are assisted by international collaborators, integrating critical capability and expertise to characterise the risks ECs pose to unique Aotearoa-NZ ecosystems and our key export industries.

We are led by an advisory panel, comprised of thought leaders and active members of the science and environmental management community.

What are we doing?

The Aotearoa-NZ Strategy for Emerging Contaminants has been developed to lead Aotearoa-NZ's industry, government and research focus on ECs, and foster the establishment of an enduring partnership between Aotearoa-NZ scientists, regulators and policy makers and world-class international EC research groups.

In Aotearoa-NZ a series of workshops and reports has been instigated by researchers and resource managers, working in conjunction with Māori, government officials, industry and other key thought leaders to raise awareness and discuss the implications for this country (Figure 1).

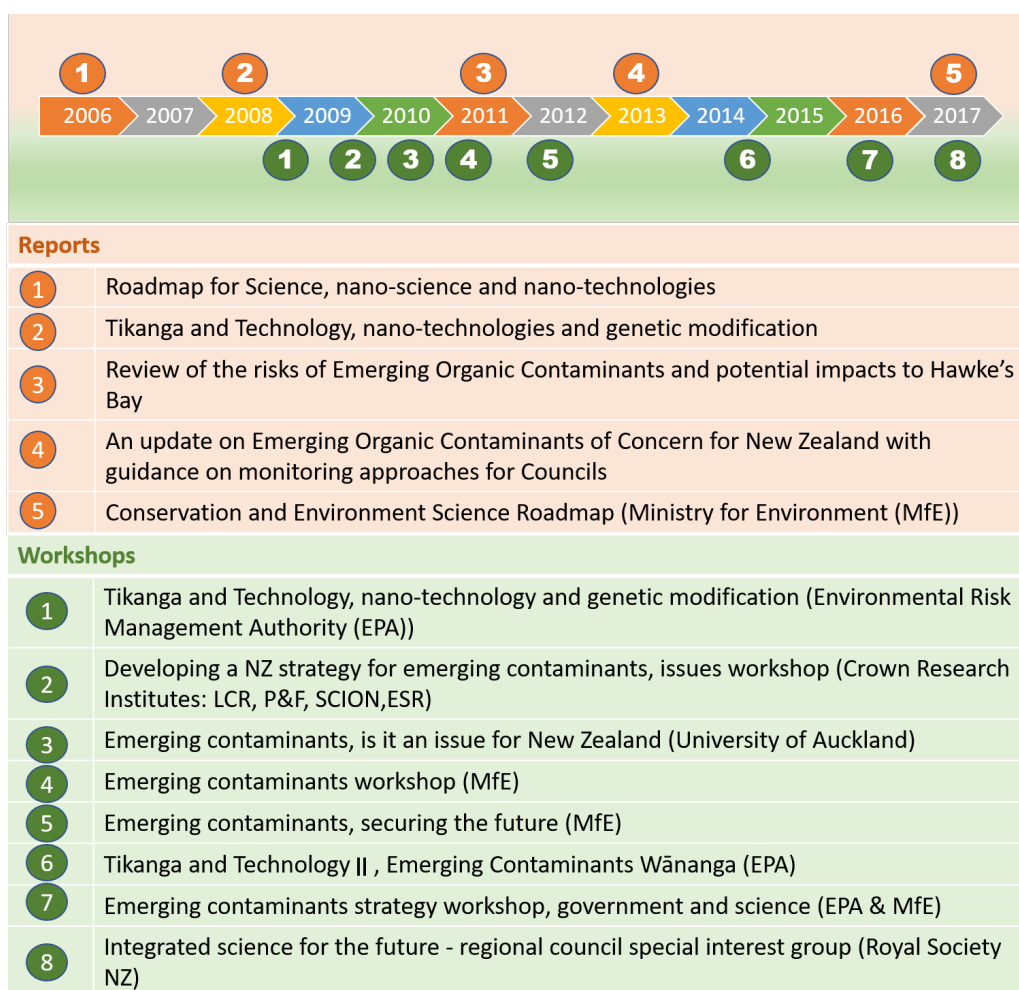


Figure 1: A timeline of workshops and reports organised and produced on emerging contaminants.

The Emerging Contaminants Advisory Group have facilitated the development of an Aotearoa-NZ specific, and Australasian relevant, strategy that will identify environment applicable, region-specific and community-embedded research priorities that will establish effective actions to sustainably manage ECs throughout Aotearoa-NZ.

The challenge for Aotearoa-NZ

The Aotearoa-NZ Strategy for Emerging Contaminants has Our knowledge about the presence and impacts of ECs in Aotearoa-NZ and Australasia is still very limited.

We will build information to affirm Aotearoa-NZ's strategy to advance solutions and actions that will contribute to safeguarding the health and well-being of our people and environment. While we need to focus on Aotearoa-NZ, we will ensure that the wider Australasian community is engaged and made more aware of the risks of ECs. This is especially pertinent to our commodity exporters to ensure they continue to meet increasingly stringent international trade requirements.

Collaboration

Encouraging leadership and participation in the story of ECs is important. We see that formalising the activity of our multi-disciplinary team is critical. We are in leadership and partnership with Māori. We need to work with community, environmental managers and policy makers to identify solutions that enhance regional and national management of ECs in Aotearoa-NZ.

The Emerging Contaminants Advisory Group will apply innovative research to inform a framework to sustainably manage ECs and protect Aotearoa-NZ ecosystems.

We will safeguard Aotearoa-NZers from the harmful impacts of ECs, and ensure our long-term economic well-being. Specifically, we will ensure that our food and beverage export products continue to meet all necessary trade requirements. We will apply the latest analytical and biological methodologies to help identify the key ECs in Aotearoa-NZ's environmental hotspots and characterise their risks to our unique and vulnerable native species.

We will build on existing partnerships, both here in Aotearoa-NZ and in Australia. Professional networks in Aotearoa-NZ, such as the Regional Government Special Interest Groups (SIGs), will provide a core audience for further work. Integration of the risk of ECs and the work of this group will need to be advanced by this national strategy.

New steering and advisory groups will be formed to build and influence an informed community and to encourage new science and implementation initiatives. These groups will:

- help to develop a framework to manage the risk of emerging contaminants in Aotearoa-NZ within the community;

- build an international science partnership;
- facilitate and enhance work with resource managers and policy developers;
- both inform and learn from industry; and
- connect the issues and challenges with our communities.

Expected outcomes

To sustain a resilient Aotearoa-NZ

We will identify and quantify the sources of ECs, and effects and risks that ECs pose to our people and our environment.

We see a need to define the strategic landscape and provide a clear understanding of the needs and requirements of government agencies, industry, and end-users, including the wider community and Māori.

The strategy will be underpinned by a solid governance structure that will ensure effective communication on the critical issues.

We will set the scene: Why is this issue important to Aotearoa-NZ?

We will demonstrate how international and local examples of issues related to ECs influence our ecosystems and livelihoods. Aotearoa-NZ researchers will work with international partners to provide clear and evidenced examples of ECs of concern to Aotearoa-NZ.

To Foster International Relationships

Improved communication between relevant Australian, Aotearoa-NZ and international agencies is required to identify and account for all chemicals coming into and out of Aotearoa-NZ, where they are used and in what amounts, and evidence of their impacts.

We will develop a framework to help identify the environmental and human health risks to each emerging contaminant that we identify in each unique environment, in Aotearoa-NZ and Australasia more generally.

To encourage safer Science and Active Management

Regional councils will increasingly need to respond to concerns raised by Māori and the wider community over the risks that ECs pose to our environment and taonga species.

The limited EC research that has been conducted in Aotearoa-NZ confirms the presence of some ECs at levels similar to those reported overseas, however their impacts remain unknown. Examples include triclosan, an anti-microbial chemical; and bisphenol-A, an endocrine disruptor.

The dearth of ECs data in Aotearoa-NZ is a threat to the international perception that our environment is free of

contamination. This knowledge gap for ECs was recently raised as an area of concern with different stakeholder groups to the Expert Advice and Practice team of the New Zealand Royal Society.

The role of ECs in the degradation of coastal marine ecosystems, habitats, and shellfish health is a key issue. We will characterise and identify the ECs that pose a risk to local ecosystems, so that environmental managers can include them in routine monitoring programmes within budget constraints. We will grow our international research relations to ensure that our research is informed by thought leaders from around the world.

In summary, the proposed research in this national strategy aligns with the Ministry of Business, Innovation and Employment (MBIE) investment plan, which supports the identification, mitigation of and adaptation to risks and hazards to our environment. This includes risks to natural ecosystems and taonga species, and resource-based businesses. The national strategy also supports the aims and outcomes of the Regional Council Research, Science and Technology Strategy 2016, Conservation and Environment Science Roadmap 2017, Iwi Management Plans and the EPA's vision.

