

The Journey



Reports

1	Roadmap for Science, nano-science and nano-technologies
2	Tikanga and Technology, nano-technologies and genetic modification
3	Review of the risks of Emerging Organic Contaminants and potential impacts to Hawke's Bay
4	An update on Emerging Organic Contaminants of Concern for New Zealand with guidance on monitoring approaches for Councils
5	Conservation and Environment Science Roadmap (Ministry for Environment (MfE))

Workshops

1	Tikanga and Technology, nano-technology and genetic modification (Environmental Risk Management Authority (EPA))
2	Developing a NZ strategy for emerging contaminants, issues workshop (Crown Research Institutes: LCR, P&F, SCION, ESR)
3	Emerging contaminants, is it an issue for New Zealand (University of Auckland)
4	Emerging contaminants workshop (MfE)
5	Emerging contaminants, securing the future (MfE)
6	Tikanga and Technology II , Emerging Contaminants Wānanga (EPA)
7	Emerging contaminants strategy workshop, government and science (EPA & MfE)
8	Integrated science for the future - regional council special interest group (Royal Society NZ)

THE AOTEAROA-NEW ZEALAND STRATEGY FOR EMERGING CONTAMINANTS

PATUA TE TANIWHA KEI TAMARIKI TONU
Assail the Leviathan whilst it is young

OUR VISION

A healthy Aotearoa-NZ safeguarded against emerging contaminants

Whakahaumarua to tātou taiao i te aranga ake o ngā tāwahawaha kīkino

OUR MISSION

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

Nā te hauitūanga, kōrero mahuki me te mahi ngātahi ka tiakina te oranga, te taunukura me te kōiora o Aotearoa whānui mai i ngā tāwahawaha kīkino

Emerging Contaminants – A definition¹

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, significant releases of these chemicals or changes in use and disposal of existing products can create new sources of emerging contaminants.

¹ This definition is derived from the U.S. Geological Survey web site <https://fotoc.usgs.gov/investigation/contaminants/>

OUR GOALS

Goal One

To communicate knowledge of emerging contaminants in an effective and timely manner, in order to protect of Aotearoa-NZ's prosperity, heritage and health.

- Ensure all end users are regularly informed about the activities of the EC group, new research outcomes and information
- Ensure all end users are provided with contemporary information and advice based on quality science evidenced data.

Goal Two

To identify research and development requirements 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 ECs to Aotearoa-NZ.

Goal Three

To provide direction, leadership and support to Aotearoa-NZ on the effects of ECs in the environment

- Provide direction and support through best quality international and national data.
- Provide leadership by ensuring strategic connectivity and clear communication to Māori, industry, government, and end users on issues topic of ECs.

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emerging contaminants in our environment to threaten the health and well-being of our people and unique environment.

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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.

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

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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 Contaminants¹ 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.

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² Strategy Area: Management and awareness of the risks and impacts of emerging contaminants to Aotearoa-NZ's people and environment

Two

Identify research and development requirements 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 ECs to Aotearoa-NZ.

Outcomes:

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 portals). A specific research programme of work is established to enable the prioritising EC research for use in resource management decisions and in aiding policy development. EC characterisation remains relevant and accurate via the development of a relevant and 'fit for purpose' EC framework, which includes annual reviews and updates. EC identification and management is prioritised for industry and government via a multi-criteria decision support tool and effects-based prioritisation framework.

Three

Provide direction, leadership and support to Aotearoa-NZ on the effects of ECs in the environment

Provide direction and support through best quality international and national data. Provide leadership by ensuring strategic connectivity and communication to Māori, industry, government, and users on issues topic of ECs.

Outcomes:

Leadership is underpinned by quality international data and led national ECs research. Strategic and transparent communication result in a national awareness of the risks of ECs to Aotearoa-NZ, and management sectors develop appropriate and responses to manage ECs in Aotearoa-NZ. Industry and Māori are informed and proactive in mitigating any negative effects of ECs to their mātauranga (knowledge), hānga (assets) and wāwata (economic, environmental, cultural and aspirations).

Who are we?

The Emerging Contaminants Advisory Group is an Australian 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 working partnerships between Aotearoa-NZ scientists, industry and policy makers and world class international EC experts.

Aotearoa-NZ a series of workshops and reports have been developed by researchers and resource managers. Working with Māori, government officials, industry and thought leaders to raise awareness and discuss the risks for the country (Figure 1).



Identification of potential impacts to Hawke's Bay New Zealand with Environment (MfE)

Workshop (Environmental Risk)

Workshop (Crown Research Institute)

Workshop (Auckland)

Workshop (Emerging Contaminants Wairanga (EPA & MfE))

Workshop (Integrated science for the future - regional council special interest group (Royal Society))

Workshop (Emerging Contaminants Wairanga (EPA & MfE))



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

VISION

**A healthy Aotearoa-NZ
safeguarded against
emerging contaminants**

TE WHAKAKITENGA



**Whakahaumarutia to
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MISSION

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TE UARATANGA

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





Goal One – Improve knowledge and understanding about ECs

Goal Two – Identify research and development possibilities for improving our knowledge

Goal Three – Provide direction, leadership and support to enable Aotearoa-NZ to understand the effects



Implementation Pathway for the Strategy

Stream A—Direction, Leadership and Support

Stream B—Research and Development Requirements

Stream C—Communicating Knowledge

Stream D—Monitoring and Review.

Goal 1 - Communication



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.

Goal 2 - Research



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.

Goal 3 – Leadership

- *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.*



Patua te taniwaha kei tamariki tonu

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