

CONVENTION ON BIOLOGICAL DIVERSITY
Key scientific and technical needs related to the implementation of the
Strategic Plan for Biodiversity 2011-2020 (Notification 2015-045)

NEW ZEALAND SUBMISSION
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Please find below New Zealand's submission in response to Notification 2015-045. We have focused on point (b) "Key scientific and technical needs related to the implementation of the Strategic Plan for Biodiversity 2011-2020 and related research." We have addressed the key scientific and technical needs identified by SBSTTA-17 for which we have updated information.

(a) Social science - The need for better ways to draw on social sciences to motivate choices consistent with the objectives of the Strategic Plan for Biodiversity 2011-2020 and to develop new approaches through, inter alia, better understanding of behavioural change, production and consumption patterns, policy development, and the use of non-market tools. The need for more effective communication, education and public awareness to be spread more widely through school systems and other channels and to devise communication and awareness strategies on biodiversity, complementing communication, education and public awareness efforts with other perspectives including research on intercultural and intracultural communication experiences;

New Zealand has identified enhanced environmental decision-making and behaviour change as a target area for science investment via the Government's Environmental Research Fund¹ in its 2015 investment round.

Across many areas of New Zealand's science investments there is an emphasis on multidisciplinary approaches and delivery of outcomes; the social sciences have a contributory role in all these areas, especially those involving the need to understand and facilitate behaviour change.

A Nation of Curious Minds He Whenua Hihiri I Te Mahara – A National Strategic Plan for Science in Society (the Plan) was launched in July 2014 to encourage and enable better engagement with science and technology across New Zealand society. Its three expected outcomes are:

1. More science and technology-competent learners, and more choosing science, technology, engineering and maths related career pathways
2. A more scientifically and technologically engaged public and a more publically engaged science sector
3. A more skilled workforce and more responsive science and technology

The Plan recognises that all New Zealanders should feel encouraged and equipped to engage in the key questions (including around natural resources stewardship) facing our society now and in the future.

¹<http://www.msi.govt.nz/get-funded/research-organisations/2015-science-investment-round/questions-and-answers/>

(b) Data and information – The need for more accessible, affordable, comprehensive, reliable and comparable data and information streams through, inter alia, facilitated access to remote sensing, better collection and use of in situ observations, proxies, citizen science, modelling, biodiversity monitoring networks, better application of data standards and interoperability related to data acquisition and management to produce policy-relevant products, including indicators and scenarios to inform decision-making;

The environmental monitoring website Land Air Water Aotearoa (LAWA) (www.lawa.org.nz) was launched in 2014 to allow people to access information about the quality and availability of New Zealand's natural resources online. It currently displays real-time data on river flow, groundwater and rainfall levels at over 1,000 sites around New Zealand. Data about the quality of lakes will be added in the next few months, followed by air quality monitoring data.

Landcare Research (a Crown research institute) organise an annual citizen science project to survey the abundance and variety of garden birds. Over the 3,200 surveys were returned in 2014. Please see the link below.

<http://www.landcareresearch.co.nz/science/plants-animals-fungi/animals/birds/garden-bird-surveys>

Crown research institute Scion has developed remote sensing technology tools for use in forest management.

<http://www.scionresearch.com/>

(c) Evaluation and assessment – The need for improving and promoting methodologies for assessing the status and trends of species and ecosystems, hotspots and conservation gaps as well as ecosystem functions, ecosystem services and human well-being, at the national, regional and global levels;

New Zealand is progressively implementing a national system to monitor, assess, and report on the status and trends of biodiversity at the national level. Details on the concept, sampling programme and latest results are available at the link below.

<http://www.doc.govt.nz/about-us/our-role/managing-conservation/natural-heritage-management/a-national-system-to-monitor-and-report-on-biodiversity/>

An Environmental Reporting Bill is currently before the New Zealand Parliament.² The purpose of the Bill is to create an independent, national-level environmental reporting system, which will be comprehensive, regular, and robust. Statistics New Zealand and the Ministry for the Environment will co-produce reports on the state of New Zealand's environment, the pressures on it, and the impacts of changes in the environment. Reports will be published in a three-year cycle: every six months there will be a report on one of five domains – air, atmosphere and climate, land, fresh water, and marine – followed by a synthesis report covering all domains.

In 2015/2016, New Zealanders are likely to be publically consulted about the topics for future environmental reporting. The topics are likely to be included in regulations under the Environmental Reporting Bill. Statistics NZ and the Ministry for the Environment will publish a synthesis report on 21 October 2015. This will be the most comprehensive national-level report on New Zealand's environment since 2007 and is being published in the spirit of the Environmental Reporting Bill.

² <http://www.mfe.govt.nz/more/environmental-reporting/about-environmental-reporting-nz/our-environmental-reporting-programme>

(d) Planning and mainstreaming – The need for improvement and better use of appropriate planning tools, and approaches for mainstreaming, in implementing the Strategic Plan for Biodiversity 2011-2020 through, inter alia: biodiversity safeguards, tools and methods for spatial planning, including integrated land use and coastal and marine planning, valuation of biodiversity, ecosystem functions and ecosystem services; and mainstreaming biodiversity into sustainable development and other relevant policy sectors;

In 2014, guidance on the concepts and current good practice related to biodiversity offsetting was prepared to assist developers in designing a biodiversity offset to demonstrate that no net loss is achievable on the ground

<http://www.doc.govt.nz/Documents/our-work/biodiversity-offsets/the-guidance.pdf>

A new tool for accurately calculating no net loss and facilitating robust offset design has also been developed: the Biodiversity Offsets Accounting System.

<http://www.doc.govt.nz/about-us/our-policies-and-plans/guidance-on-biodiversity-offsetting/biodiversity-offsets-accounting-system/>

After signing a Memorandum of Understanding between local Iwi (Ngati Porou), local government (Gisborne District Council), and the central government (Ministry for Primary Industries), research has begun on how to reflect the relationship between the health of waterways, land, and its people. This research has focused on developing information that allows the outcomes of environmental restoration, economic profitability, cultural revitalisation, and prosperity. This research has indicated that using mutually agreed criteria and indicators provide a useful means to integrate and balance different objectives into planning processes. After the success of this research,³ Scion is piloting the use of these criteria and indicators as a means to integrate decision making in other regions.

(e) Linking science and policy – The need for better integration of science and policymaking and for improved science-policy interfaces, particularly at the local and national levels and through the use of IPBES, and the improved and wider use of tools to promote policy coherence and policy evaluation and to produce scenarios and options relevant to policymakers;

The New Zealand Government appointed its first Chief Science Advisor in 2009 as part of a goal of including science at the heart of policy decision-making and connecting government departments with other scientists throughout the public sector, at universities, and other research organisations. Since then, six chief science advisors have been appointed across government departments. The first Science Advice to Governments conference took place in New Zealand in mid-2014 to discuss the practice of science advice, build a peer network, and examine the potential to develop globally applicable science advice principles.

http://www.pmcsa.org.nz/wp-content/uploads/Synthesis-Report_Science-Advice-to-Governments_August-2014.pdf

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https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0CCcQFjAB&url=https%3A%2F%2Fwww.mpi.govt.nz%2Fdocument-vault%2F3344&ei=7wiKVeV-N4mmoQSwyK_wCQ&usq=AFQjCNGunb2AX43d5QjPvk-SznoFrzQaw&bvm=bv.96440147.d.cGU

(h) Traditional knowledge – The need for better ways to include relevant indigenous and traditional knowledge systems and the collective actions of indigenous and local communities to complement scientific knowledge in support of the effective implementation of the Strategic Plan for Biodiversity 2011-2020, with the approval and involvement of the holders of such knowledge, innovations and practices;

Integrating western science and Mātauranga Māori (traditional knowledge) is important to the management of New Zealand's biodiversity. The Department of Conservation is appointing a principle science advisor specialising in Mātauranga Māori. Case studies that demonstrate the Mātauranga Māori approach include an estuary monitoring toolkit, use of cultural indicators, monitoring frameworks, and assessment tools:

- Rickard, D., Swales, A. (2009). Nga Waihotanga Iho - The Estuary Monitoring Toolkit for Iwi. *Coastal News*. Popular publication of the New Zealand Coastal Society: A Technical Group of IPENZ. Issue 40: March 2009, pg 1-3.
- Lyver P. O'B. Jones C.J. and Doherty J. (2009) Flavor or forethought: Tuhoe traditional management strategies for the conservation of Kererū (*Hemiphaga novaeseelandiae novaeseelandiae*) in New Zealand. *Ecology and Society*. 14 (1) 40.
- Tipa G. & Teirney L. 2003. *A cultural health index for streams and waterways: Indicators for recognising and expressing Māori values*. Ministry for the Environment <https://www.mfe.govt.nz/publications/water/cultural-health-index-jun03/cultural-health-index-jun03.pdf>
- Wilson C. Freeman D. Hogan K. & Thompson K. (2007). *Māori methods and indicators for marine protection – Summary of research findings*. New Zealand Department of Conservation unpublished report, Wellington, N.Z. <http://www.doc.govt.nz/Documents/science-and-technical/sap242entire.pdf>

(i) Scientific and technical cooperation – The need to foster improved scientific and technical cooperation among Parties, scientific networks and relevant organizations, in order to match capabilities, avoid duplication, identify gaps and achieve efficiencies. The need to enhance the clearing-house mechanism of the Convention to make scientific and technical cooperation more effective;

Ten national science challenges have been designed to take a more strategic approach to the Government's science investment and are undergoing continual development.

New Zealand's Biological Heritage Science Challenge involves 21 partner organisations and has been created to protect and manage our native biodiversity, improve our biosecurity, and enhance our resilience to harmful organisms. <http://www.biologicalheritage.nz/home>

The Sustainable Seas Science Challenge involves eight partner organisations and has the goal of using Ecosystem Based Management that will allow the integrated management of natural resources that recognises the full array of interactions within the ecosystem, including human, and promotes both sustainable use and conservation in an equitable way. <http://sustainableseaschallenge.co.nz/>

A Participatory Science Platform is to be established to create research partnerships between communities and scientists (<http://www.msi.govt.nz/assets/MSI/Update-me/Science-in-society-project/Participatory-Science-Platform-pilots-QA.pdf>). It will allow communities to be meaningfully

involved in the development and progression of locally relevant scientific research projects with science professionals. The platform is a means to:

- engage organisations such as students, kura, schools, businesses, Māori collectives and organisations, and community-based organisations with science professionals to carry out collaborative research projects that have scientific value, pedagogical rigour, and resonate with the community; and
- offer researchers opportunities to become involved in locally relevant lines of enquiry, where high-quality scientific outputs can be created through harnessing the local knowledge and contribution of citizens.

The Ministry of Business, Innovation and Employment supports science and innovation collaboration with other countries in a variety of ways including through the International Relationships Fund (IRF). The IRF supports activities that initiate, develop and foster collaborations leveraging international science and innovation for New Zealand's benefit.

(j) Different approaches – The need to strengthen non-monetary valuation tools and methodologies for the maintenance of ecosystem functions.

A report on the contribution of ecosystem services delivered by indigenous biodiversity and natural ecosystems to the wellbeing of New Zealanders was published in early 2015 (L. Roberts et al, *The nature of wellbeing: How nature's ecosystem services contribute to the wellbeing of New Zealand and New Zealanders* - [PDF, 2045K](#)). It provides a clearer understanding of the main contributors to wellbeing, and the ways in which our choices can affect wellbeing and biodiversity.

In 2013, *Ecosystem Services in New Zealand* (J. Dymond ed.) was published providing the first comprehensive overview of the state of ecosystem services. More than 100 of New Zealand's leading scientists and academics contributed to the 540-page book. It is now available freely online. <http://www.landcareresearch.co.nz/publications/books/ecosystem-services-in-new-zealand>