Eco-index

Measuring Biodiversity Investment

A joint declaration regarding a unified approach to:

Principles of Environmental Data Architecture in Aotearoa NZ

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An initiative spearheaded by the BioHeritage Eco-index research programme
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On 10 August, 2021, the Biological Heritage National Science Challenge's Eco-index programme[1] facilitated an online workshop across various government agencies, universities, CRIs, councils and businesses (see logos below) to explore options for improving Aotearoa New Zealand's currently fragmented environmental data[2] architecture. It was determined through this workshop that a unified approach is needed to overcome issues to improve cross-agency coordination for managing, storing, and accessing environmental data. This determination aligns with the conclusions of the 2019 PCE report, *Focusing Aotearoa New Zealand's environmental reporting system*[3].

Based on the workshop kōrero, five key principles emerged that participating entities established common agreement upon. These principles describe how data should be stored, organised, accessed, and used in the context of Aotearoa New Zealand. These principles are not addressing data collection, but rather have a focus on data stewardship after collection. By environmental data, here we mean information collected about any of the biotic or abiotic features from any of Aotearoa New Zealand's landscapes (e.g., biodiversity, chemical properties, ecosystem landcover, geological characteristics).

Principle 1: Data should be in a standardised format agreed upon by the majority of entities and institutions in Aotearoa New Zealand which hold environmental data. This format should take into consideration globally-recognised data formats for potential collaborative use or comparison (e.g., United Nations Sustainable Development Goals).

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[1] The Eco-index is a multidisciplinary and cross-institutional programme hosted and funded by the Biological Heritage National Science Challenge.

[2] Environmental data describes data derived from a wide range of sources relating to the environment. This includes remote sensing, observational, direct measurements, and citizen science.

[3] PCE – Parliamentary Commissioner for the Environment. (2019). Focusing Aotearoa New Zealand's environmental reporting system. Wellington; NZ. 106 Pages.

Principle 2: Data should be held in a secure manner taking into account privacy considerations as listed in the New Zealand Privacy Act 2020 when it comes to access and distribution.

Principle 3: Data storage should take into account Māori Data Sovereignty when considering cloud or off-shore platforms.

Principle 4: Data should be made accessible to all stakeholders including tangata whenua and the New Zealand public while taking into consideration principles 2 and 3, the New Zealand Data and Information Management Principles (NZDIMP), and the New Zealand Government Open Access and Licensing Framework (NZGOAL).

Principle 5: Data management should consider the lifecycles of both data and metadata. Lifecycle phases are the discovery, collection, analysis, and sharing of data, and the creation, collection, sharing, and discovery of metadata. Data management should also take into account tikanga Māori principles.

This set of five common principles establishes a foundation for future cross-agency engagement in the development of a common environmental data architecture in Aotearoa New Zealand. Future Eco-index-facilitated workshops may investigate establishment of data architecture criteria grouped under each principle, to provide agencies with clear protocols for environmental data management, storage, and access.