Antarctic
Science Platform

# ASP Data & Publication Policy

## Contents

# 1. Definitions

## 1.1 Antarctic Science Platform (ASP)

A combination of people, facilities, information and knowledge that provide a particular, ongoing science and innovation capability for New Zealand.

## 1.2 ASP Data

Data generated under the auspices of an ASP-funded research project could include:

- Raw or unprocessed observations, e.g. aerial photos of Adelie penguin colonies.
- Processed data that have been derived from raw observations through any form of analysis or calibration, e.g. bathymetric data that have been corrected for noise, salinity and temperature.
- Ancillary/baseline data that are considered to add value or a context to other related and managed data, e.g. geological maps, sketch maps, field notebooks.
- Algorithms/models.
- Modelled data products resulting from algorithms applied to raw, processed or derived products.
- Derived products that present a summary or specific view into a particular dataset, e.g. GIS layers.
- Visualisations of data such as graphs, maps, or interactive applications.

## 1.3 Metadata

Metadata complaint with DIF 10 or ISO-19115 standards.

## 1.4 Data Management Plan (DMP)

A document describing:

- What observational data is being collected, synthesised, or modelled.
- How the data will be managed and protected during its lifecycle.
- Where the data will be stored.
- When the data will be publicly available.

## 1.5 ANTA1801

Strategic Science Investment Fund – Programmes Investment Contract between the Ministry of Business, Innovation and Employment and Antarctica New Zealand.

## 1.6 ASP Data Curator

Responsible for providing a central coordination point for Antarctic data management and ensures data collected as part of New Zealand's Antarctic Research Programme are discoverable and accessible.

## 1.7 ASP Manager

Responsible for the day-to-day operation of the ASP including the management of research contracts, running contestable funding rounds, and preparing reporting material for the Steering Group and Platform Director.

## 2. Background

As New Zealand-funded researchers, members of the Antarctic Science Platform (ASP) are obliged to adhere to the principles outlined in the Antarctic Treaty. Of particular relevance for Antarctic data management and delivery is Article III, section 1(c), which stipulates that "*scientific observations and results from Antarctica shall be exchanged and made freely available*". As a treaty party and a member of the Standing Committee on Antarctic Data Management (SCADM), the ASP is responsible for upholding our treaty commitments, and adhering to data practices that are consistent with the Scientific Committee of Antarctic Research (SCAR).

This policy was guided by the data policy principles developed by Tronstad et al. (2021)[1], and include policy points that are consistent with the data policy of SCADM (in prep.)[2].

## 3. Purpose

The purpose of this policy is to describe the roles and responsibilities of the ASP and all ASP-personal with regards to data and metadata sharing, access, management, preservation, and acknowledgement. The intent of this document is to promote good data management practice and act as a set of guidelines that researchers should consider when acquiring, processing and archiving data. This policy should be interpreted as a set of guidelines and best practice recommendations, which when used, honour the ASP's Antarctic Treaty obligations, and maximise the utility and benefit of publicly funded research.

## 4. Policy Statement

### 4.1 Full and Open Data

To maximise the benefit of ASP data, all data should be easily discoverable, maintain long-term public access, and guarantee data preservation into the future. To achieve this, ASP data should be stored in long-term repositories that align with the TRUST principles[3].

ASP data should be made publicly available on the shortest possible timescale. ASP-funded projects should submit data to a repository within 3 years of data collection. This policy acknowledges data submission within 3 years is not always practical (e.g. the submission affects an ongoing student research project).

ASP data that have been generated with propriety software should be made available in the same format the researcher used for their analysis.

### 4.2 FAIR Data

To ensure efficient and effective uptake of data, the FAIR principles[4] should be applied to the greatest extent practicable to ASP data. The FAIR principles assert that data collections should be Findable, Accessible, Interoperable, and Reusable. It is the responsibility of the ASP Data Curator to work alongside ASP researchers to implement the FAIR principles in a manner which balances their benefits against the cost of implementation.

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[1] Tronstad, S., Bircher, P., Kool, J., Pulsifer, P., Van de Putte, A., et al. (2021): Alignment of Polar Data Policies – Recommended Principles. Zenodo. https://doi.org/10.5281/zenodo.573490

[2] SCAR Data Policy (in prep.)

[3] Lin, D., Crabtree, J., Dillo, I. *et al.* The TRUST Principles for digital repositories. *Sci Data* **7,** 144 (2020). https://doi.org/10.1038/s41597-020-0486-7

[4] Wilkinson, M., Dumontier, M., Aalbersberg, I. *et al.* The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* **3,** 160018 (2016). https://doi.org/10.1038/sdata.2016.18

## 4.3 Metadata

Metadata is essential for the discovery, access, and effective use and reuse of scientific data. The ASP Data Curator will assist ASP researchers to develop metadata that contain sufficient information to understand, access, and replicate the dataset to a level of quality, accuracy, and precision specified in the metadata. The ASP Data Curator will make metadata discoverable to the ASP community. Once ASP data are uploaded to a long-term repository, the ASP Data Curator will transfer the associated metadata to the Antarctic Metadata Directory (AMD)[5].

## 4.4 Data Access

The ASP follows New Zealand Government Open Access and Licensing framework (NZGOAL) guidelines for releasing copyright works and non-copyright material for re-use by others[6]. All datasets should be attached with a rights waiver, a public domain statement, or an internationally recognised data licence to the dataset. This should be a non-restrictive licence such as the Creative Commons attribution licence (CC-BY) specifying that the data may be re-used, provided attribution is given to the creator.

Persistent and globally unique identifiers should be used for all datasets or collections of related datasets. This can include the use of Digital Object Identifiers (DOIs) or other persistent identifiers that can be applied to both datasets and observations.

## 4.5 Data Management

All ASP-funded projects are required to develop and maintain a DMP[7]. Completed DMPs will be made available to the ASP community on the Collaboration Hub.

## 4.6 Intellectual Property

Under section 6 of the ASP's Strategic Science Investment Fund (SSIF) contract with the Ministry of Business and Innovation (MBIE), the ASP and all ASP contractors and subcontractors are required to operate under the following principles:

- Platform participants shall use reasonable endeavours to ensure that IP and results arising from Platform research are published and/or presented to benefit both New Zealand and the international community, and to allow access to that IP and results.
- Background IP will remain exclusively owned by a party, and that party will grant to the other platform participants a licence to their background IP to enable undertaking Platform research.
- Ownership of new IP developed solely by one party will be solely owned by that party, and they will be responsible for protection and management of the new IP.
- Ownership of new IP developed by more than one Platform participant will be jointly owned by those participants.
- Platform participants will grant a licence to use all new IP developed as part of any Platform research, and all Background IP relating to the new IP, for the purpose of undertaking Platform research.
- Platform participants acknowledge that they have no right to mātauranga Māori (indigenous knowledge) that is kept and treated as proprietary by whānau, hapu and iwi. Where any research makes use of any mātauranga Māori, researchers shall consult with the relevant whānau, hapu and iwi to reach kotahitanga (consensus) on how that mātauranga Māori will be used in the research and as part of any IP or publication.

[5] https://search.earthdata.nasa.gov/portal/amd/search?fdc=NZ%2FNZAI%2FANZ
[6] https://www.data.govt.nz/toolkit/policies/nzgoal/quick-nzgoal-guide-for-users-january-2015/
[7] ASP Data Management Plan: https://www.antarcticscienceplatform.org.nz/documents/login

The ASP Data and Publication Policy acknowledges that data or data related IP (e.g. a model, a model simulation or a frequently updated gridded global dataset owned by another institution) used on the ASP which is already owned by another party, shall remain the IP of that party.

The ASP will make no claim to ownership of any IP arising from research conducted under the ASP. Any IP arising from ASP-funded research will be the property of the contacted research organisation[8].

The ASP has developed an IP register which enables researchers to identify pre-existing data or data related IP. To ensure the effective management of IP on the ASP, it is a requirement that all researchers complete the IP register.

## 4.7 Bespoke Data Arrangements

Whilst the ASP Data and Publication Policy outlines the expectations of all ASP personnel regarding management and sharing of ASP data, it is understood that at times, extenuating circumstances may mean that there is a valid reason for entering into a bespoke data-share agreement that deviates from the requirements outlined in this policy. Reasons for a bespoke data arrangement may include:

- Making data available would prejudice the commercial position of the contractor-subcontractor.
- Withholding the data would represent an ethical breach or compromise the privacy of a person.
- Cultural sensitivities exist.
- Making the data available would prejudice the research carried out by the contractor-sub-contractors.
- Making the data available would be contrary to the statutory or existing legal obligations of the contractor-subcontractor.
- Making the data available would prejudice the filing of a valid patent application in New Zealand or overseas, or a similar application for intellectual property protection, or commercial value of new intellectual property revenue.

To be considered for an exemption from the expectations outlined in this policy, a request should be submitted to the ASP Data Curator and be by mutual agreement between the parties detailed in a Memorandum of Understanding or data-share agreement. The request will be put to the Platform Leadership Team for approval.

## 4.8 Publications

A publication plan has been agreed upon for each project. This publication plan may evolve after data acquisition and during analysis, and should be kept up to date as a living document on the Collaboration Hub.

The publication plan should:

- Identify the research outputs with lead and co-authors being identified.
- Map publications to milestones, outputs and impact statements of the ASP.
- Distinguish key syntheses, or integrated results, papers with larger team authorship, from more specific papers on individual data sets.
- Identify a logical, fair and reasonable publication pathway whereby individual team members receive appropriate recognition of their contribution.

[8] MBIE ANTA1801 Antarctic Science Platform Contract

Publication of key results should not be held up unreasonably by individual team members. If independent expertise and authorship is required from outside the team, this should be agreed by the PIs with the respective names included in the project publication plan.

The data owners have publication priority for their data set. However primary publication of key dataset/s may occur through agreement between team members and collaborators. This will often be the case with collaborative synthesis or flagship papers.

Publication of another team member's dataset, without their permission and without the appropriate recognition or acknowledgement is prohibited. Collaboration with the original owner of the data on publications is encouraged even once the data are published.

Publications and presentations should acknowledge ASP funding as appropriate by referring to the ASP contract ID ANTA1801. It is up to ASP members to choose an appropriate acknowledgement, but an example to use or modify is - *Funding for this project was provided by the New Zealand Ministry of Business, Innovation and Employment through the Antarctic Science Platform (ANTA1801).*

## 4.9 Responsibilities of ASP Researchers

- Ensure that all team members and collaborators are aware of and agree to comply with the ASP Data and Publication Policy prior to collection of data.
- Leaders of international collaborations should ensure that they have communicated clearly to the researchers that they understand and are adhering to the ASP Data and Publication Policy as appropriate, and a Memorandum of Understanding between parties should include reference to the ASP DPP.
- Submit an ASP DMP.
- Share data with other ASP scientists after collection.
- Quality assurance and quality control of data.
- Notify the ASP Data Curator when extenuating circumstances prevent ASP-funded data from being made public.
- In cases of data collection involving personal information of people, researchers should comply with the New Zealand Privacy Act 2020[9].

## 4.10 Responsibilities of the ASP Data Curator

- Upload all DMPs to the Collaboration Hub.
- Assist with the creation of metadata.
- Quality assurance and quality control of metadata.
- Promote discoverability of metadata.
- Assist scientists to complete thorough metadata records for the AMD.
- Upload metadata to the AMD.
- Facilitate data sharing within and between projects.
- Promote and ensure the FAIR principles are applied to ASP data.
- Promote the storage of data in repositories that adhere to the TRUST principles.

[9] http://www.legislation.govt.nz/act/public/2020/0031/latest/LMS23223.html

# 5. Appendix

This appendix has been included to provide detail and context to some of the policy points in this document.

## 5.1 Full and Open Data

It is regarded best practice to use a long-term repository that honour the TRUST principles and/or have CoreTrustSeal certification.

The TRUST principles include:

- Transparency - to be transparent about specific repository services and data holdings that are verifiable by publicly accessible evidence.
- Responsibility - to be responsible for ensuring the authenticity and integrity of data holdings and for the reliability and persistence of its service.
- User focus - to ensure that the data management norms and expectations of target user communities are met.
- Sustainability - to sustain services and preserve data holdings for the long-term.
- Technology - to provide infrastructure and capabilities to support secure, persistent, and reliable services.

More information about CoreTrustSeal certification and a list of certified long-term repositories can be found at coretrustseal.org.

## 5.2 FAIR Data

Examples of FAIR principles in practice can be found at:

- AMD - https://search.earthdata.nasa.gov/portal/amd/search?fdc=NZ%2FNZAI%2FANZ
- Federated Polar Data Search - https://search.polder.info/
- DataOne - https://www.dataone.org

## 5.3 Data Management Plan

The Digital Curation Centre (dcc.ac.uk) offers the DMP-online tool (www.dcc.ac.uk/dmponline) which supports researchers with their data management planning. This tool allows researchers to create a free account consists of a user-friendly interface which guides researchers through the creation of a data management plan. The tool includes predefined fields where descriptions about the lifecycle of project data can be edited, saved, updated, and submitted for review.