# National Aeronautics and Space Administration

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## Types of data produced

### Describe the types of data to be produced in the course of the project. For NASA's Earth Science Program and according to the NASA Earth Science Data & Information Policy, the term "data" includes observation data, metadata, products, information, algorithms, including scientific source code, documentation, models, images, and research results.

Describe what data or other research products you will generate in the course of your project. Include the size or amount of data produced, the type of data files that will be generated, and where and when the data will be produced. Examples of research products include observational data, results from models, data generated from previous observations or models, physical samples, software, curriculum materials, etc. Consider the following:

* What data will be generated in the research?
* What data types will you be creating or capturing? (e.g. experimental measures, observational or qualitative, model simulation, processed etc.)
* How will you capture or create the data?
* If you will be using existing data, state that fact and include where you got it.
* What is the relationship between the data you are collecting and the existing data?
* How much data will be produced?

## Data and metadata standards

### Standards to be used for data and metadata format and content

Describe the format of your data, and think about what details (metadata) someone else would need to be able to use these files. Metadata may entail descriptions of research details such as: experiments, apparatuses, computational codes, etc. Consider these questions:

* Which file formats will you use for your data, and why?
* What form will the metadata describing/documenting your data take?
* How will you create or capture these details?
* Which metadata standards will you use and why have you chosen them? (e.g. accepted domain-local standards, widespread usage).
* What contextual details (metadata) are needed to make the data you capture or collect meaningful?

## Policies for access and sharing

### Policies for accessing and sharing the data, including provisions for the appropriate protection of privacy, confidentiality, security, intellectual property, and other rights or requirements

Explain how and when the data will become available. If there is an embargo period for sharing the data, make sure you provide details explaining this delay (e.g. publisher, political, commercial, patent reasons). And if the data is of a sensitive nature, address the means by which access will be restricted. Consider these questions:

* How will you make the data available?
* What resources are needed to access or use the data? Examples are software or equipment
* When will you make the data available?
* What is the process for gaining access to the data?
* How long will the original data collector/creator/principal investigator retain the right to use the data before making them available for wider distribution?
* Are there any embargo periods for political/commercial/patent reasons? If so, give details.
* Are there ethical and privacy issues? If so, how will these be resolved?
* Who will hold the intellectual property rights to the data and how might this affect data access?

## Policies for reuse, redistribution, and derivates

### Policies and provisions for reuse, redistribution, and the production of derivatives

Explain how the policies outlined in the previous question can be applied to the re-use and re-distribution of your data. Identify who will be allowed to use your data, how they will be allowed to use your data and whether or not they will be allowed to disseminate your data. If you are planning on restricting access, use or dissemination of the data, you must explain in this section how you will codify and communicate these restrictions. Consider the following:

* Will any permission restrictions need to be placed on the data?
* Who is likely to be interested in the data?
* What and who are the intended or foreseeable uses the data?

## Plans for access to data used in publications

### Plans for providing access to the data used in any science publication

DMPs must provide a plan for making research data that underlie the results and findings in peer-reviewed publications digitally accessible at the time of publication or within a reasonable time period after publication. This includes data (or how to access data) that are displayed in charts and figures. Data displayed in charts and figures must be available at the time of publication. Other data may be made available later, consistent with the approved DMP. This does not include preliminary data; laboratory notebooks; drafts of scientific papers, plans for research; peer-review reports; communications with colleagues; or physical objects, such as laboratory specimens. This requirement could be met by including the data as supplementary information to the published article, through NASA archives, or other means. The published article should indicate how these data can be accessed [**(NASA Plan, Part A: 4.0)**](https://www.nasa.gov/sites/default/files/atoms/files/206985_2015_nasa_plan-for-web.pdf)

## Plans for archiving and preservation

### Plans for archiving and preserving the data, as appropriate (use of existing databases or public repositories will be strongly encouraged), including how long the data will be preserved and accessible

Describe your long-term strategy for storing, archiving, and preserving the data you will generate or use. In addition, explain how the responsibilities regarding the management of your data will be delegated. This should include time allocations, project management of technical aspects, training requirements, and contributions of non-project staff - individuals should be named where possible. Remember that those responsible for long-term decisions about your data will likely be the custodians of the repository you choose to store your data. Consider the following:

What is the long-term strategy for maintaining, curating, and archiving the data?

Which archive/repository/database have you identified as a place to deposit data?

What procedures does your intended long-term data storage facility have in place for preservation and backup?

How long will/should data be kept beyond the life of the project?

What data will be preserved for the long-term?

On what basis will data be selected for long-term preservation?

What metadata/documentation will be submitted alongside the data or created on deposit/transformation in order to make the data reusable?

Outline the staff/organizational roles and responsibilities for implementing this data management plan.

How will adherence to this data management plan be checked or demonstrated?