

# North Carolina Water Resources Research Institute

## Guidelines for Data Management Plans

### Templates and Examples

#### Background:

Programs and grants funded by the US Geological Survey (USGS) are required to consider how to ensure public accessibility and long-term preservation of externally-funded data. North Carolina Water Resources Research Institute (WRRRI) is a USGS program and as such, applicants to WRRRI are required to develop a Data Management Plan (DMP) as part of their final proposals to be included with WRRRI's application for USGS 104b funds.

Data management is a crucial foundation of your professional work. The data you collect and analyze are a national resource. They are not just your data or my data, they are USGS data - paid for by taxpayers' money - that are being used to make all types of management decisions, many of which have substantial economic and even health and safety consequences. U.S. Geological Survey (USGS) data represent corporate assets with potential value beyond any immediate research use and therefore need to be accounted for and properly managed throughout their lifecycle.

A DMP is a document that outlines the data management considerations of a given project. A DMP describes intended actions for acquiring, processing, analyzing, preserving, publishing/sharing, describing, managing quality, backing up, and securing USGS data holdings. The document describes where and how you will acquire data, what standards you will use, and how data will be handled and protected during and after the completion of the project. The DMP is created before the project begins, and is updated throughout the research process, as needed, to reflect the reality of project activities.

Recipients of WRRRI funding are responsible for implementing their data management plans to comply with USGS's DMP policy. Data should be stored in common widely-used formats and be accompanied by appropriate metadata. WRRRI strongly encourages funding recipients to publicly distribute their data as wide as possible (peer-reviewed manuscripts, websites, conferences, open-source databases, etc.) to maximize the value of the federal investment. Proposals submitted to WRRRI may include reasonable cost associated with compliance with this USGS directive.

More information on USGS DMPs can be found at <https://www.usgs.gov/data-management/data-management-plans>

#### A typical data management plan may include:

- The types of environmental data and information to be created during the course of the project;
- The tentative date by which data will be shared (typically no later than two (2) years after the data are collected or created);
- The standards to be used for data/metadata format and content;
- Policies addressing data stewardship and preservation; procedures for providing access, data, and security;
- prior experience in publishing such data.

NC WRRRI Data Management Plans should not exceed 2 pages.

Template of data management plan:

The project name, implemented by applicant name will generate environmental data and information, including type(s) of data that will be collected. Datasets will provide specifics on information collected and collection dates. Data will be collected by person/group collecting data according to the procedures described in application/manual/published article, and stored location/method of data storage. The data will be available to whom? upon request starting on date no later than two years after data collected/created, through future date, if applicable. Contact name at phone/email for more information or to make a data request. In the past, we have shared similar data by past data sharing methods, if any. All future sub-awardees not identified in this plan will have as a condition of their contract acceptance of this data sharing plan. Any additional data sharing stipulations for future sub-awardees may be outlined at that time and described in their contract.

Example Data Management Plan:

The Fisheries Telemetry Project, implemented by Best Fisherman Group (P.I. James Best), will generate environmental information, including the length/weight of juvenile Red Drum, as well as the habitat preference of tagged juvenile Red Drum. Ambient water quality data including temperature, salinity and dissolved oxygen will also be collected. Length data will be determined by measuring fish from their snout to the end of their caudal fin using certified metal meter sticks. Weight will be determined according to the standard method for estimating fish weights in the field as described in *the Standard Methods for Fish Research version 12*, Pendant Publishing, New York, 2015. Acoustic tracking data will be obtained using surgically implanted acoustic tags operating at 50KHz. Detections will be obtained using a wired array of acoustic receivers (model ST-205). Water quality data will be obtained using a handheld multiparameter probe (probe model LM4). All field data will be recorded in field notebooks, and then transferred into excel spreadsheets for storage and analysis. Acoustic tracking data will be saved as x,y,z coordinates associated with their respective time and fish ID stamps. It is expected that maps of specific fish tracks will be produced and saved as KML files. Data collection is expected to start on May 1, 2017 and be completed on May 1, 2018. Deviations from this schedule may occur due to weather and/or equipment constraints. All files will be saved on our Institutions server which is backed up daily.

Our collected data and details about our methods will only be available to our PIs, Co-PIs, and sub-contractors until we get our results published in peer-review journals, or May 1, 2020 whichever comes first. Please contact James Best at [bestj@bfg.com](mailto:bestj@bfg.com) for more information or to make a data request. We have worked with both NOAA and NSF on previous projects that generated similar environmental data. The data from these projects was successful shared via peer-reviewed manuscripts, our Institution's website, and through NOAA's National Centers for Environmental Information (NCEI).

Projects not expected to generate environmental data:

If your project is not expected to develop any environmental data, then your data management plan may simply include the declaration: "This proposal is not expected to generate environmental data. Therefore, a Data Management Plan is not required."