Framework for Organizing IMD Digital Products in DataStore

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Purpose

The National Park Service's DataStore (NPS DataStore: https://irma.nps.gov/DataStore/) application is designed to store digital information collected by all sources and initiatives within the NPS, allowing for a cohesive view of information across the bureau's different projects. This document specifically aims to offer clear and practical guidance on how Inventory and Monitoring Division (IMD) networks can publish digital products to the NPS DataStore. The methods outlined in this guidance are designed to simplify records upkeep and improve consistency of records across IMD.

Audience

General organizational concepts in this document (e.g., use of three core tiers) are designed to support and accommodate all NPS programs. Detailed field-by-field guidance is intended for the staff of the NPS Inventory and Monitoring Division. Other divisions are encouraged to adapt this document to meet their specific needs.

Overview

This guidance outlines—and advocates for—a simple, three-tiered hierarchy for organizing digital products using the Program, Project, and Product reference levels (Table 1). First, it encourages each IMD program (organizational unit, entity, or initiative that funds or sponsors scientific and scholarly work conducted by NPS) to establish a top-level Program Reference. Second, it provides instruction for establishing child Project References that represent activities important to IMD program operations (e.g., monitoring or inventory projects). Third, it details specific guidance on how all subsequent supporting references are published as a variety of different reference types, referred to as Products, nested within an associated Project "bin."

The intent of this three-tiered framework is to simplify records maintenance for the reference creator/user and the DataStore application developer. A comprehensive suite of reference filtering tools is available in DataStore to support parsing what, in some cases, can be a large number of different Products associated with a Project.

This guidance is not intended to serve as a manual for using NPS DataStore. Fundamental instructions and technical documentation can be accessed by visiting either DataStore's Help section (https://irma.nps.gov/Content/DataStore/Help) or the Help Documentation Project reference in DataStore (https://irma.nps.gov/DataStore/Reference/Profile/2310058).

Table 1: Organization of and relationships between the three reference types comprising the organizational structure recommended for IMD networks.

Reference levels	Definition	IMD corollary	Purpose	Can restrict access?	Allows holdings?	Supports versioning?	Example
Program	Organizational unit, entity, or initiative that funds or sponsors scientific and scholarly work conducted by NPS	Network/Program	Organizational	No	No	No	Eastern Rivers and Mountains Inventory & Monitoring Network (ERMN)
Project	Scientific and scholarly effort funded or sponsored in whole or in part by an NPS program	Protocol/Inventory	Organizational	No	No	No	ERMN Monitoring Vegetation and Soil (2007-ongoing)
Product	Plan, standard, procedure, model, result, and associated records created during project planning and implementation	Study plan, protocol, SOPs, report, data package, science communication product	Stores content	Yes	Yes	Yes	Geospatial Dataset: ERMN Vegetation and Soils Monitoring Active Plots, 2018

Program Reference

Objective

Each of the 32 IMD networks should create and maintain a single Program Reference (i.e., one Program reference per IMD network).

Minimum Requirements

The minimum list of fields and guidance for creating an IMD network Program Reference appears below (Table 2). Instructions and examples are specific to IMD networks but can be adapted to accommodate other NPS programs.

Table 2. Fields and guidance for creating an IMD network Program reference.

Field Name/Group	Tab	Instructions
Title	Core Info	Project titles should be consistent for I&M networks. Naming convention should follow: Eastern Rivers and Mountains Inventory and Monitoring Network (ERMN)
Sponsor(s)	Core Info	All networks should use the same sponsor: National Park Service Inventory and Monitoring Division
Created by or for the NPS?	Core Info	Yes
Start Date	Core Info	Year the network first received funding. One place to find this year is in the network's Vital Signs Phase 1 report or Table 7 in the I&M Administrative History.
End Date	Core Info	Networks are "ongoing," so leave blank.
Description	Core Info	Program description – Include information like network is one of 32 networks, states, number of parks, full park names. This could be copied from the network home page if appropriate. This field can be used to store URLs (e.g., link to network website).
Reference Owners	Permissions	For future-proofing, try to add more than one reference owner if appropriate.
Reference Access Level	Permissions	Public
Justification	Permissions	Not sensitive, Not Proprietary, and of High Quality.
Producing Unit	Units and Geography	Include the network and IMD as Unit Codes.
Content Unit (and Geography)	Units and Geography	Include the network (do not include geography) and each network park (include geography).
Keywords	Keywords	More keyword guidance will come from the LTDM Keyword Workgroup.

Examples

Example IMD Program references:

NCCN: https://irma.nps.gov/DataStore/Reference/Profile/2195782

ERMN: https://irma.nps.gov/DataStore/Reference/Profile/2227632

Project Reference

Objective

Each network should create and maintain Project References to group related network products. Use the guidance below to get started and modify to fit the network.

Minimum Requirements

The minimum list of fields and guidance for creating an IMD Project Reference appears below (Table 3).

A quick note about Projects and Products: A Project Reference is meant to organize a variety of related products, such as study plans, protocols, SOPs, reports, data packages, and science communication products in one place. The various products should be created as individual References and then linked to the Project via the Product tab, rather than uploaded directly to a Project. Keeping items as separate References helps with future discovery by providing each item with a landing page, allowing for Digital Object Identifiers per product, and ensuring data are shared with data.gov.

Table 3. Fields and guidance for creating an IMD network Project reference.

Field Name/Group	Tab	Instructions
Title	Core Info	Projects are organizational references. Project titles should be relatively short and written in a uniform way with the goal of looking consistent when listed together within their parent Program reference (i.e., one Program per IMD network). Four-letter codes are encouraged. Where appropriate, include dates (years data were collected) in the title. Naming convention examples: • ERMN Monitoring Vegetation and Soil (2007-ongoing) • NCCN Inventory Forest Carnivore Mount Rainier National Park
Lead	Core Info	For active projects, add at least one person, including their Job Title and Affiliation. Including the Organization's name, if applicable, can also "futureproof" the record for staff turnover.
Created by or for the NPS?	Core Info	Yes (in almost all cases)
Project Start Date	Core Info	Record the "Exact date" if available, but otherwise simply record the "Year" the Project was started.
Project End Date	Core Info	Enter the "Year" the Project ended (e.g., final report was published). For ongoing Projects, End Date can be left blank, or another option is to update the Project's end year after every field season.
Publisher	Core Info	National Park Service is the default. If NPS is not the publisher, there is a drop-down menu with a restricted list of other agencies to choose from.
Description	Core Info	Project description – copy and paste information from another source like an executive summary or network web page or write a few sentences that summarize the project.
Program	Core Info	Link the Project references to its parent Program reference. The goal is to be able to see all the Projects created by a Program. Example: NCCN Inventory and Monitoring Program
Reference Owners	Permissions	For futureproofing, try to add more than one reference owner if appropriate.
Reference Access Level	Permissions	Public

Field Name/Group	Tab	Instructions
Justification	Permissions	Not sensitive, Not Proprietary, and of High Quality.
Digital Files and Links	Files and Links	Files: Please don't add files to Projects (soon to be disabled). See Products section below for alternative. Links: Reference supporting webpages by adding "External Links".
Producing Unit	Units and Geography	Include the network and Inventory and Monitoring Division as Unit Codes.
Content Unit (and Geography)	Units and Geography	Include the network (do not include geography) and each network park where the protocol is implemented (include geography).
Cross-References (See Also)	Cross-References	Can be used to link current Project to related references. (Maybe a monitoring protocol Project is replacing a pilot Project. It can be linked here.)
Products	Products	Add all the references related to the Project. See the "Prioritizing Projects" and "How-to Establish a Product Reference" sections below for ideas.

Prioritizing Projects (with examples)

High Priority

- Monitoring Protocol – A Project reference should be created for every IMD monitoring protocol. Where possible, add Projects for older protocols that have been replaced or discontinued. Example: ERMN Monitoring Vegetation and Soil (2007-ongoing); ERMN Monitoring Stream Fish (2022-2023)

- Inventory Project (network-led or funded) – A Project reference should be created (or linked, if extant) for every IMD inventory project. Review network archives and post products (even if it is only a final report) with the appropriate permissions. Flatten relational databases into .csv files. Confirm the data do not contain protected information before posting. Example: ERMN Inventory Fungi (2017-2018) ALPO BLUE DEWA FONE FRHI GARI JOFL NERI

Medium Priority

- Ad Hoc Network Projects – Project references should be created for other network projects that do not fall under inventory or monitoring.
- Network Administrative History – Include network vital signs planning documents (phase 1, 2, 3, etc.), network inventory study plans, network monitoring plan, network data management plan, three-year start-up reviews, network newsletters, etc. Example: ERMN Administrative History

Products

Objective

References that are associated with a Project, referred to as Products, are the individual files or links that are uploaded on DataStore. Each Reference/Product has its own attributes, including access level (e.g., public, internal, named list) and version history. Choosing the right Reference Type for each Product helps end users as they browse content. It also enables reference-specific features, such as the ability to register a DOI or share data with data.gov. Each Reference can be associated with more than one Project.

The following are recommendations for Product types that should be added to Projects. They are grouped into High, Medium, and Low priority bins to help networks prioritize their effort.

High Priority

- Protocol or study plan (inventories)
- Standard Operating Procedures (SOPs)
- Quality Assurance Plan (QAP)
- Data Packages
- Tabular Datasets
- Geospatial Datasets
- Reports

Medium Priority

- Safety Plans
- Data Photos
- Data Audio
- Data Video
- Scanned Datasheets
- Field Notes and Forms
- Analysis Scripts
- Visualizers, Story Maps, additional science communication products
- Journal Articles
- Resource Briefs/Web Articles

Low Priority

- Blank Datasheets
- Database (structure only or with data)