

Arctic Network Inventory & Monitoring Program

U.S. Department of the Interior

Data Management
Standard Operating Procedure
NPS/ARCN/DMSOP-2007-1



Project Life Cycle Checklist

Guidelines and tasks checklist for project initiation and maintenance

Summary

Managing monitoring projects for an enterprise as large as the Arctic Network requires a great deal of planning and organization. It is important to establish a process for handling and archiving project resources from initiation through closeout. What follows is a project life cycle with associated tasks in checklist form that must be completed during each phase of the life cycle. Each phase has an associated task checklist that project managers can use to efficiently track a project's progress.

Contents

Summary	1
Contents	1
Introduction	1
Project Life Cycle	2
Project Roles and Responsibilities	2
Project Life Cycle Checklist.....	3
Phase 1: Planning and Approval	3
Planning and Approval Tasks.....	3
Planning and Approval Checklist.....	3
Phase 2: Design and Testing.....	4
Design and Testing Tasks.....	4
Design and Testing Checklist.....	4
Phase 3: Implementation	5
Implementation Tasks	5
Implementation Checklist	5
Phase 4: Product Integration	6
Product Integration Tasks	6
Product Integration Checklist	6
Phase 5: Evaluation and Closure	6
Evaluation and Closure Tasks.....	6
Evaluation and Closure Checklist.....	6
About This Standard Operating Procedure.....	8
Revision History	8

Introduction

Managing monitoring projects for an enterprise as large as the Arctic Network requires a great deal of planning and organization. It is important to establish a process for handling and archiving project resources from initiation through closeout. What follows is a project life cycle with associated tasks in checklist form that must be completed during each phase of the life

cycle. Each phase has an associated task checklist that project managers can use to efficiently track a project's progress

Project Life Cycle

Projects, whether a short term study or long term monitoring all generally follow a cycle of tasks. Figure 1 shows the major events that must occur in an Arctic Network monitoring project. Each stage is characterized by a set of activities carried out by staff involved in the project. Primary responsibility for these activities rests with various individuals according to the different phases of a project. These roles and responsibilities are defined in Table 1.

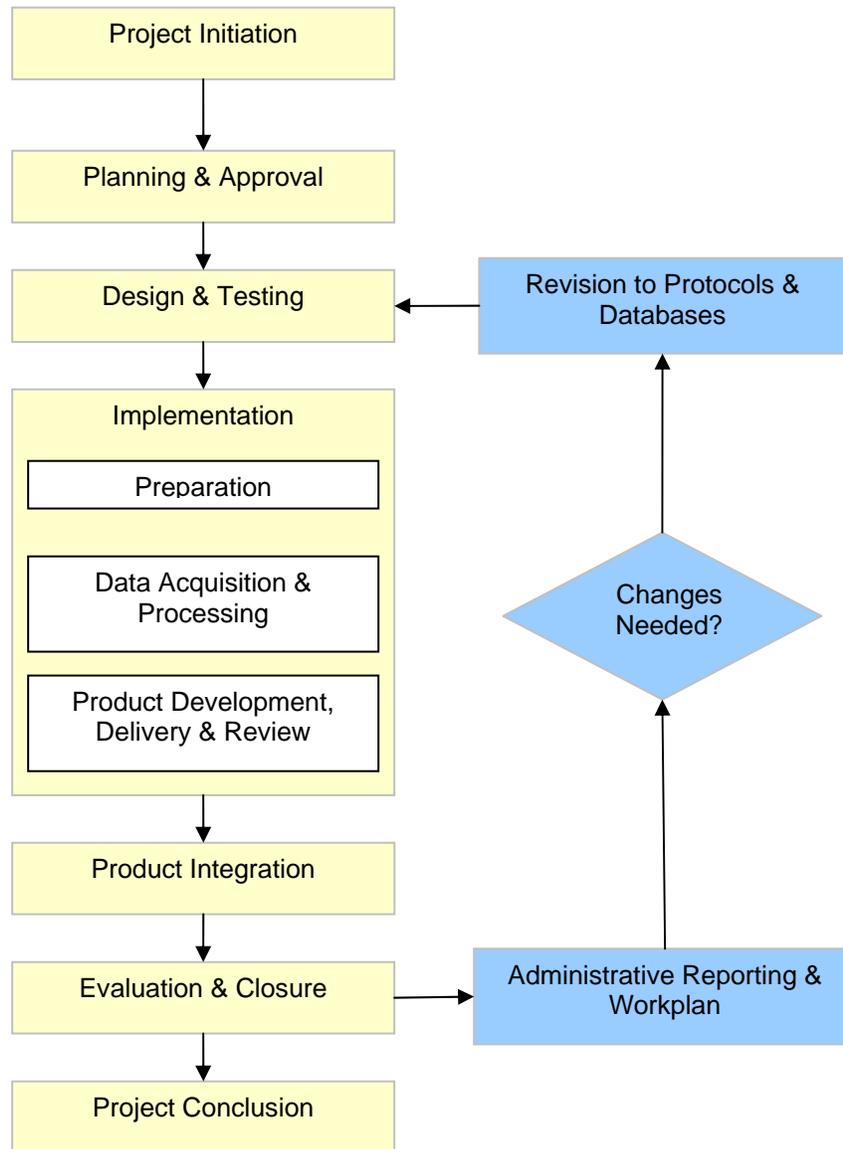


Figure 1. Project work flow and life cycle.

Project Roles and Responsibilities

Role	Abbreviation	Responsibilities
------	--------------	------------------

Role	Abbreviation	Responsibilities
Network Coordinator	NC	Oversight of day to day network operations
Data Manager	DM	Oversees all aspects of data stewardship activities
Principal Investigator	PI	Carries out objectives of targeted studies or monitoring efforts. May be NPS or non-NPS. There must be at least one NPS PI or liason to take responsibility for required tasks below.
Biotechnician	BT	Assists in all aspects of biological research, administrative tasks, logistics, field and laboratory work
Administrative Assistant	AA	Assists in administrative duties
Technical Committee	TC	Directs science program
Logistics Coordinator	LC	Arranges field campaign logistics
Field Crew Member	FC	Seasonal field employees
NPS Project Liason	PL	If a project is composed of non-NPS PIs then the NPS Project Liason takes responsibility for facilitating communication and distributing standard operating procedures and reporting the project's progress to the network coordinator.

Table 1. Project management roles and responsibilities.

Project Life Cycle Checklist

The checklist below should be used as a guide for developing and registering a new Arctic Network. Critically important and/or required tasks are highlighted in bold.

Phase 1: Planning and Approval

Planning and Approval Tasks

This initial phase is when many of the preliminary decisions are made regarding project scope and objectives. Funding sources, permits, and compliance are also addressed in this phase. Primary responsibility rests with project leaders and program administrators. Register your project with the data manager and obtain a project ID and directory structure on the network drive (O:\). Use the assigned project directory for all project materials.

Planning and Approval Checklist

Check	Task	Responsibility*
<input type="checkbox"/>	Write proposal	PI, NC, TC
<input type="checkbox"/>	Write budget	PI
<input type="checkbox"/>	Solicit and secure funding	PI
<input type="checkbox"/>	Obtain needed permits	PI
<input type="checkbox"/>	Obtain compliance approval	PI, NC, AA
<input type="checkbox"/>	Write study plan. Use the Regional or network I&M study plan template.	PI
<input type="checkbox"/>	Register study with data manager, obtain project ID and project directory on O:\	PI

Check	Task	Responsibility*
	drive. <u>This is extremely important so we can track project progress and share resources.</u>	
<input type="checkbox"/>	Identify deliverables, include them in your study plan	PI, DM
<input type="checkbox"/>	File contracts and agreements with parks and network	PI, DM
<input type="checkbox"/>	Assign a lead NPS PI or liason if all collaborators are non-NPS	PI

**See Project Roles and Responsibilities*

Phase 2: Design and Testing

Design and Testing Tasks

During this phase, details are worked out regarding how data will be acquired, processed, analyzed, reported, and made available to others. The project leader is responsible for developing and testing project methodology, or for modifying existing methods to meet project objectives. It is essential that the project leader and the data manager work together throughout this phase in order to build the basis for good data management throughout the project.

An important part of this collaboration is the development of the data design and data dictionary, where the specifics of data to be collected are defined in detail. Devoting adequate attention to this aspect of project is possibly the single most important part of assuring the quality, integrity and usability of the resulting data. Once the project methods, data design, and data dictionary have been developed and documented, a database can be built to meet project requirements.

Design and Testing Checklist

Check	Task	Responsibility*
<input type="checkbox"/>	Develop or adapt existing methods	PI
<input type="checkbox"/>	Develop standard operating procedures and guidelines	PI, DM
<input type="checkbox"/>	Model data, build data dictionary	PI, DM
<input type="checkbox"/>	Design, build and document database. Use the Natural Resources Database Template for monitoring databases.	PI, DM
<input type="checkbox"/>	Design field data collection forms, if needed	PI, DM
<input type="checkbox"/>	Preliminary pilot data collection and protocol revision	PI, DM
<input type="checkbox"/>	Initiate metadata development using data model and data dictionary	PI, DM
<input type="checkbox"/>	Identify destinations for deliverables	DM
<input type="checkbox"/>	Peer review	TC, PI

**See Project Roles and Responsibilities*

Phase 3: Implementation

Implementation Tasks

During the implementation phase, data are acquired, processed, error-checked and documented. Products such as reports, maps, geographic information system (GIS) themes, and other products are developed and delivered during this phase. The project leader oversees all aspects of implementation, from logistics planning, contracting, training, and equipment procurement, to data acquisition, report preparation and final delivery. Throughout this phase, data management staff function primarily as facilitators: they provide training and support for global positioning systems (GPS), database, and GIS applications, ensure data verification and validation, summarize or format data as needed for analyses, and assist with data documentation and product development. The specific roles of data management staff during this phase will vary depending on the project. As much as possible, these roles should be worked out in advance of project implementation. Toward the end of this phase, project staff members work to develop and finalize the deliverables that were identified in the project planning documents (e.g., protocol, study plan, agreement). Raw and derived data products, metadata, reports and other documentation should be delivered to the project leader, who then works with the data manager to move products to their final repositories. In most cases this will be the NPS Data Store (<http://science.nature.nps.gov/nrddata/>). There is software available to assist in archiving data.

Implementation Checklist

Check	Task	Responsibility*
<input type="checkbox"/>	Logistics planning	PI, LC, BT
<input type="checkbox"/>	Hiring	PI
<input type="checkbox"/>	Contracting	PI, NC, AA
<input type="checkbox"/>	Write and post emergency contact information and safety plan	PI
<input type="checkbox"/>	Training	PI, DM, NC
<input type="checkbox"/>	Installation of equipment and monitoring plots	PI, BT, FC
<input type="checkbox"/>	Equipment requisition, purchase and maintenance	PI, NC, DM
<input type="checkbox"/>	Data collection, acquisition of external data	PI, BT, FC, DM
<input type="checkbox"/>	Equipment cleaning, repair, replacement and return	PI, LC
<input type="checkbox"/>	Data entry, data processing; store in assigned project directory	PI, BT, FC
<input type="checkbox"/>	Data verification, validation, certification (See Data Certification SOP and Certification Form)	PI, BT, DM
<input type="checkbox"/>	Data summary, map production	PI
<input type="checkbox"/>	Data analysis, trend analysis, technical reports	PI
<input type="checkbox"/>	Write annual or final report	PI
<input type="checkbox"/>	Metadata development	PI, BT, FC, DM

<input type="checkbox"/>	Product review and revision	PI, NC, DM
--------------------------	-----------------------------	------------

**See Project Roles and Responsibilities*

Phase 4: Product Integration

Product Integration Tasks

During this phase, data products and other deliverables are integrated into national and network databases, metadata records are finalized and posted in clearinghouses, and products are distributed or otherwise made available to their intended audience. Depending on the project, another aspect of integration is merging data from a working database to a master database maintained on the network server. This occurs only after the annual working data set has been certified for quality by the project leader. Certain projects may also have additional integration needs, such as when working jointly with other agencies for a common database. Product integration includes creating records for reports and other project documents in NatureBib, integrating species-related data into NPSpecies, creating or updating ArcCatalog metadata files and Dataset Catalog records, and posting the resulting products to national clearinghouses.

Product Integration Checklist

Check	Task	Responsibility*
<input type="checkbox"/>	Finalize and post metadata and data products	PI, DM
<input type="checkbox"/>	Catalog products (this is done already if you have a network project ID from phase 1	PI, DM
<input type="checkbox"/>	Integrate project data with national databases	PI, DM
<input type="checkbox"/>	Archiving and records management	PI, DM
<input type="checkbox"/>	Product distribution	PI, DM

Phase 5: Evaluation and Closure

Evaluation and Closure Tasks

For long-term monitoring and other cyclic projects, this phase occurs at the end of each field season, and leads to an annual review of the project. For short-term projects, this phase represents the completion of the project. After products are catalogued and made available, the program administrator, project leader, and data manager assess how well the project met its objectives, and to determine what might be done to improve various aspects of the methodology, implementation, and formats of the resulting information.

For monitoring protocols, careful documentation of all changes is required. Changes to protocol narratives, standard operating procedures (SOPs), and other procedures are maintained in version tables associated with each document. Major revisions may require additional peer review.

Evaluation and Closure Checklist

Check	Task	Responsibility*
<input type="checkbox"/>	Objectives were met	NC, PI, DM

- Protocols followed PI
- Decide if protocol modifications are needed PI
- Sign off: project objectives and requirements met; deliverables are complete and available** NC

About This Standard Operating Procedure

Version: 1.1

Status: Draft

Publication Date: October 30, 2007

Author(s): Scott D. Miller, Data Manager, Arctic Network Inventory & Monitoring Program.

Abstract: Managing monitoring projects for an enterprise as large as the Arctic Network requires a great deal of planning and organization. It is important to establish a process for handling and archiving project resources from initiation through closeout. What follows is a project life cycle with associated tasks in checklist form that must be completed during each phase of the life cycle. Each phase has an associated task checklist that project managers can use to efficiently track a project's progress.

Suggested Citation: NPS-ARCN (2007). Project Life Cycle Checklist

Guidelines and Tasks Checklist for Project Initiation and Maintenance. NPS/ARCN/DMSOP-2007-1 Version 1., Arctic Network-Inventory and Monitoring Program, National Park Service. Fairbanks, Alaska.

Revision History

Version	Version Date	Revised By	Changes
1.0	20071001	SMiller	
1.1	20081008	Smiller	Changed title. Content applies to more than new projects.

This table reflects changes to this document. Version numbers will be incremented by one (e.g., Version 1.3 to Version 2.0) each time there is a significant change in the process and/or changes are made that affect the interpretation of the data. Version numbers will be incremented after the decimal (e.g., Version 1.6 to Version 1.7...1.10....1.21) when there are changes to grammar, spelling, or formatting, or minor modifications in the process that do not affect the interpretation of the data.