



Monitoring Resources

sponsored by: [pacific northwest aquatic monitoring partnership](#)

Document and share your methods and protocols.
Plan your study plans and sample designs.
Track your monitoring locations.

[DOCUMENT](#)

Discover other's monitoring locations.
View monitoring metadata and data repository.
Export maps and spreadsheets of metadata.

[DISCOVER](#)

Your Recent Content

- [Sample Design: 251 Bureau Of Reclamation Site Effectiveness Monitoring In 2014 \(2/16/2023 11:49:08 PM\)](#)
- [Sample Design: 16759 McIlraith Sample Design Testing \(2/16/2023 8:23:38 PM\)](#)
- [Sample Design: 16854 Part Of A Multifunctional Single Nucleotide Polymorphism \(SNP\) Panel For Genetic Monitoring Of Pacific Lamprey Research And Restoration Programs V1.0 \(2/13/2023 10:06:02 PM\)](#)
- [Sample Design: 16825 Monitoring The Relative Abundance And Distribution Of Larval And Juvenile Pacific Lamprey In The Columbia River Basin \(2022\) \(2/13/2023 9:44:07 PM\)](#)
- [Sample Design: 16853 Environmental DNA \(EDNA\) Monitoring For Pacific Lamprey In The Columbia River Basin V1.0 \(2/9/2023 8:55:42 PM\)](#)

Study Plan In MonitoringResources.org

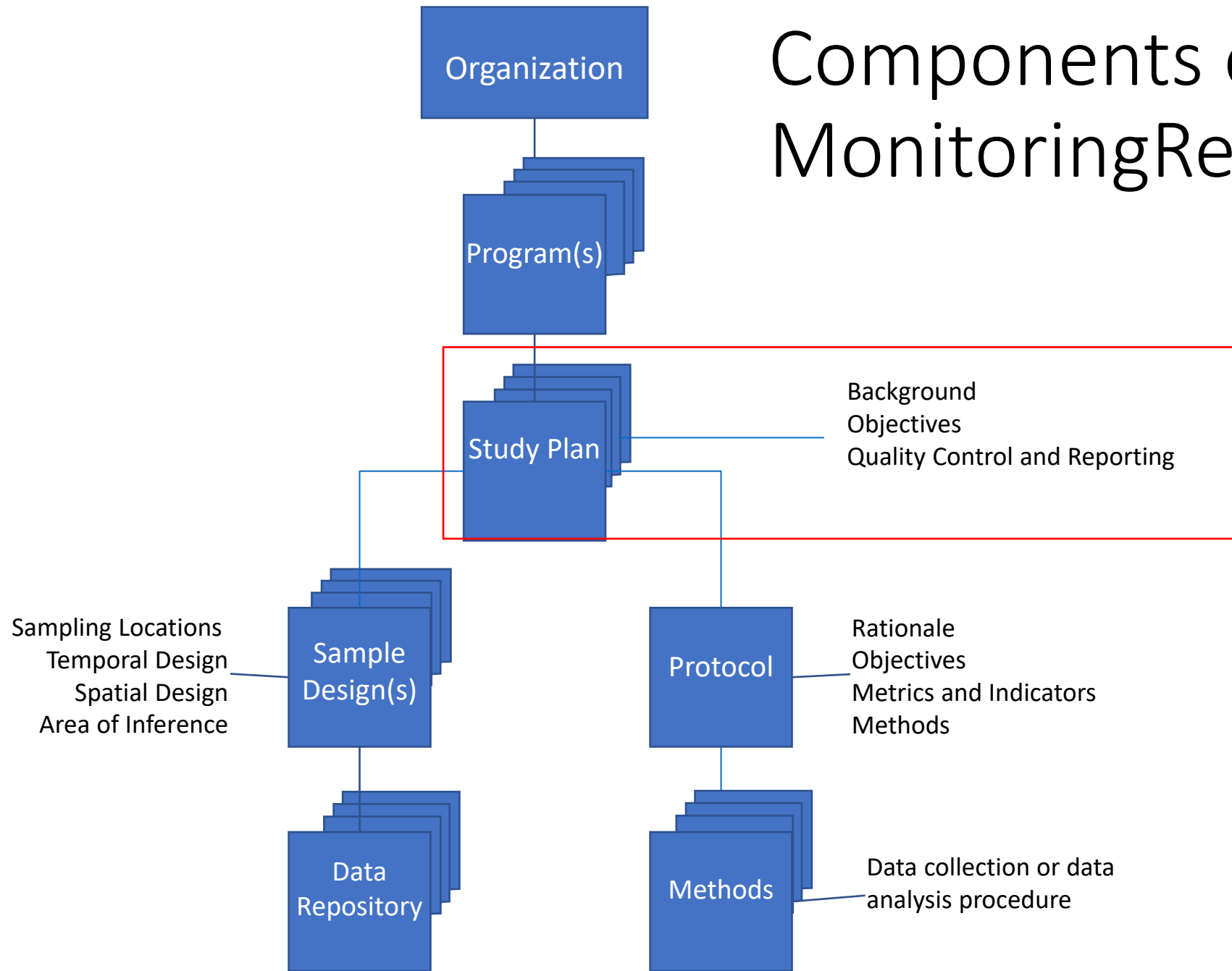
Table Of Contents

| | |
|---|---------------------------|
| General MonitoringResources.org Tips | <u>3</u> |
| Components of MonitoringResources.org | <u>4</u> |
| Workflow for MonitoringResources.org | <u>5</u> |
| What is a Study Plan? | <u>6</u> |
| Tips for Study Plans | <u>7</u> |
| Search for Study Plans | <u>8</u> |
| Tips for Searching and Creating Study Plans | <u>9</u> |
| Document Your Study Plan | <u>12</u> |
| Study Plan Summaries | <u>13</u> |

General MonitoringResources.org Tips

- Login to Edit!
- If you have a question, check the FAQ or glossary.
- Only owners and colleagues can edit or make new versions.
- Components must be Finalized (formerly called “Published”).
- You can make new versions or clone published content.
- Within components, red asterisk fields * are required.

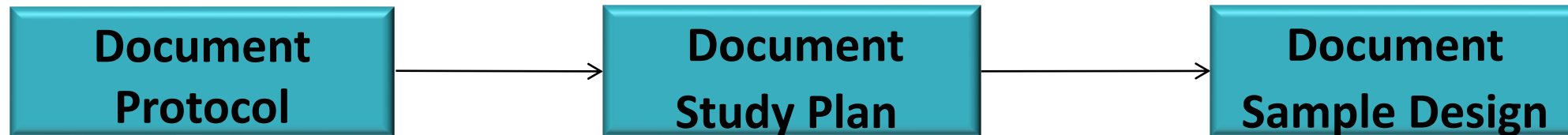
Components of MonitoringResources.org



Workflow for MonitoringResources.org

If you have a new project to document, login into MonitoringResources.org, then follow these three-steps:

1. Create and finalize a Protocol.
2. Create a Study Plan. In the Study Plan, link to your Protocol.
3. Create a Sample Design. In the Sample Design, link to your Study Plan

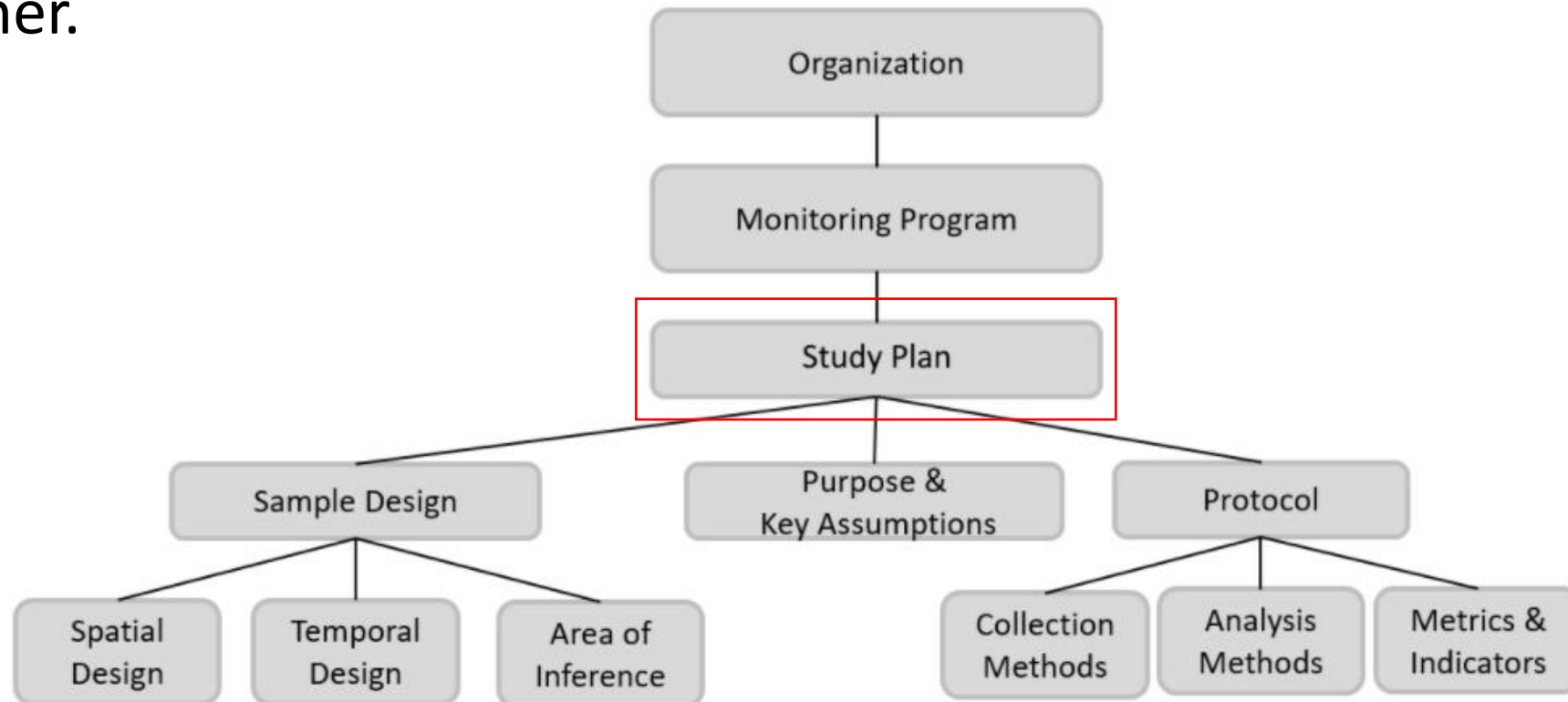


After you complete the documentation, you can perform your field work. Then, after performing field work for the season or the year, you can return to your sample design to revise planned locations to document the actual locations that you sampled, for the dates you sampled, and add post-implementation notes about each site sampled. You can use this same workflow to complete drafts of metadata that you or a colleague started some time ago.

What is a Study Plan?

Study Plans describe why you are addressing these management or research questions and contain information specific to your project.

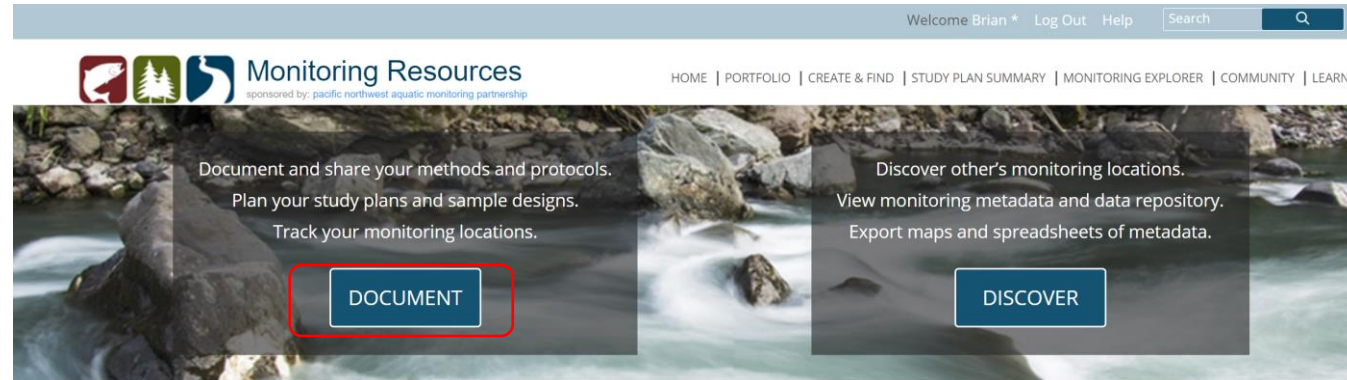
Study Plan objectives provide detail about results you plan to achieve by applying the selected protocol at the locations documented in the Sample Designer.



Tips for Study Plans in MonitoringResources.org

- Study Plan objectives describe the overarching management or research questions for the work, the contract number and name, agency name, a general location for the work, and focal species unique to that study.
- You must have a Protocol to complete a Study Plan. Protocol is a required field in Study Plan. The Protocol describes how you address the study plan's questions. ***This is a one-to-one relationship: one Protocol to one Study Plan.***
- A Study Plan cannot reference multiple Protocols. However, multiple Study Plans can reference a specific Protocol because Protocols can be general and shareable across studies .
- When you develop your Sample Design(s), link to an appropriate Study Plan.
- Multiple Sample Designs can reference a given Study Plan.

Search for Study Plans



Your Recent Content

- Sample Design: 251 Bureau Of Reclamation Site Effectiveness Monitoring In 2014 (2/16/2023 11:49:08 PM)

Create or search for new content

You can search for content without being logged in, but to create content, you must log in to MonitoringResources.org.

From the home page select DOCUMENT and then from the Document page, select the documentation type you would like to create or search for (Methods, Protocols, or Study Plans).



Search for Study Plans

Keyword Search

Filter by Pull Down Items

List Of Study Plans

| ID | Title | State | Owner | Program | Protocol | Sa... | Last Mod... |
|----|---|-----------|----------------|-----------------------------|----------------------------|-------|-------------|
| 1 | ODEQ Statewide Biomonitoring Surface Waters Western Pilot Study: | Finalized | Shannon Hubler | EMAP (Environmental Mon | Surface Waters Western Pil | 1 | 1/29/2015 |
| 2 | ODEQ Statewide Biomonitoring Environmental Monitoring and Asse: | Draft | Shannon Hubler | EMAP (Environmental Mon | Environmental Monitoring | 0 | 1/29/2015 |
| 3 | ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Vegetation P | Finalized | Matt Fairchild | PIBO (USFS Pacfish/Infish B | PIBO - Sampling Protocol f | 0 | 7/21/2016 |

ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Vegetation Parameters v1.0 v1.0

Protocol

10 - PIBO - Sampling Protocol for Vegetation Parameters

Methods (4 of 4)

- 1211 - Modified Estimating Cover in Quadrats v1.0
- 1212 - Modified Greenline Vegetation v1.0
- 1213 - Modified Riparian Cross-Sections v1.0
- 1210 - Modified Collecting Plant Specimens v1.0

Sample Designs (0 of 0)

None

Monitoring Program

PIBO (USFS Pacfish/Infish Biological Opinion)

Background

The Pacific Anadromous Fish Strategy (PACFISH) and Inland Fish Strategy (INFISH) Biological Opinion Effectiveness Monitoring Program (PIBO - EM) for aquatic and riparian resources was developed in 1998 in response to monitoring needs addressed in the Biological Opinions for bull trout (U.S. Department of the Interior, Fish and Wildlife Service 1998) and steelhead (U.S. Department of Commerce, National Marine Fisheries Service 1995). An interagency team representing the U.S. Department of Agriculture, Forest Service, the U.S. Department of Interior, Bureau of Land Management and U.S. Fish and Wildlife Service, and the U.S. Department of Commerce, National Marine Fisheries Service was convened to develop a large-scale monitoring program with the primary objective of determining whether PACFISH/INFISH management practices are maintaining, degrading, or improving biological and physical attributes, processes, and functions of riparian and aquatic habitats throughout the upper Columbia River Basin.

Objectives

- Determine whether PACFISH/INFISH management practices are maintaining, degrading, or improving biological and physical attributes, processes, and functions of riparian and aquatic habitats through UCRB

| | | | | | | | |
|---|---|-----------|----------------|-----------------------------|----------------------------|---|-----------|
| 4 | ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Stream Chan | Finalized | Matt Fairchild | PIBO (USFS Pacfish/Infish B | PIBO - Sampling Protocol f | 2 | 7/21/2016 |
| 5 | ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Vegetation P | Draft | Matt Fairchild | PIBO (USFS Pacfish/Infish B | PIBO - Sampling Protocol f | 0 | 7/21/2016 |

Search for content

Typically Study Plans are very specific to the Monitoring Program conducting the study. However, you may want to search for another program's or project's Study Plan to discover their data or search for a similar Study Plan that can be cloned, and thus, not start from scratch.

Search for Study Plans in the study plan library by:

- Typing in keywords in the Title
- Filtering columns
- Only see Finalized content
- Identify a specific Program
- Identify a Specific Protocol

Search for Study Plans

Quick Overview

List Of Study Plans [Ⓢ]

Collapse All Download Create Study Plan

| ID | Title | State | Owner | Program | Protocol | Sa... | Last Mod... |
|----|---|-----------|----------------|-----------------------------|----------------------------|-------|-------------|
| 1 | ODEQ Statewide Biomonitoring Surface Waters Western Pilot Study: | Finalized | Shannon Hubler | EMAP (Environmental Mon | Surface Waters Western Pil | 1 | 1/29/2015 |
| 2 | ODEQ Statewide Biomonitoring Environmental Monitoring and Asse: | Draft | Shannon Hubler | EMAP (Environmental Mon | Environmental Monitoring | 0 | 1/29/2015 |
| 3 | ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Vegetation P | Finalized | Matt Fairchild | PIBO (USFS Pacfish/Infish B | PIBO - Sampling Protocol f | 0 | 7/21/2016 |

ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Vegetation Parameters v1.0 v1.0

Protocol

10 - PIBO - Sampling Protocol for Vegetation Parameters

Methods (4 of 4)

1211 - Modified Estimating Cover in Quadrats v1.0

1212 - Modified Greenline Vegetation v1.0

1213 - Modified Riparian Cross-Sections v1.0

1210 - Modified Collecting Plant Specimens v1.0

Sample Designs (0 of 0)

None

Monitoring Program

PIBO (USFS Pacfish/Infish Biological Opinion)

Background

The Pacific Anadromous Fish Strategy (PACFISH) and Inland Fish Strategy (INFISH) Biological Opinion Effectiveness Monitoring Program (PIBO - EM) for aquatic and riparian resources was developed in 1998 in response to monitoring needs addressed in the Biological Opinions for bull trout (U.S. Department of the Interior, Fish and Wildlife Service 1998) and steelhead (U.S. Department of Commerce, National Marine Fisheries Service 1995). An interagency team representing the U.S. Department of Agriculture, Forest Service, the U.S. Department of Interior, Bureau of Land Management and U.S. Fish and Wildlife Service, and the U.S. Department of Commerce, National Marine Fisheries Service was convened to develop a large-scale monitoring program with the primary objective of determining whether PACFISH/INFISH management practices are maintaining, degrading, or improving biological and physical attributes, processes, and functions of riparian and aquatic habitats throughout the upper Columbia River Basin.

Objectives

- Determine whether PACFISH/INFISH management practices are maintaining, degrading, or improving biological and physical attributes, processes, and functions of riparian and aquatic habitats through UCRB

| | | | | | | | |
|---|---|-----------|----------------|-----------------------------|----------------------------|---|-----------|
| 4 | ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Stream Chan | Finalized | Matt Fairchild | PIBO (USFS Pacfish/Infish B | PIBO - Sampling Protocol f | 2 | 7/21/2016 |
| 5 | ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Vegetation P | Draft | Matt Fairchild | PIBO (USFS Pacfish/Infish B | PIBO - Sampling Protocol f | 0 | 7/21/2016 |

Search for content

After you've narrowed down your search, you can get a quick overview of a Study Plan before committing and opening it up as a new web page.

The overview will provide the associated Protocol, a list of Methods, a list of Sample Designs, the Monitoring Program or Project, the Background for the Study Plan, and the Study Plan Objectives.

Create New Study Plans

Create New

List Of Study Plans [?]

Collapse All Download **Create Study Plan**

| ID | Title | State | Owner | Program | Protocol | Sa... | Last Mod... |
|----|---|-----------|----------------|-----------------------------|----------------------------|-------|-------------|
| 1 | ODEQ Statewide Biomonitoring Surface Waters Western Pilot Study: | Finalized | Shannon Hubler | EMAP (Environmental Mon | Surface Waters Western Pil | 1 | 1/29/2015 |
| 2 | ODEQ Statewide Biomonitoring Environmental Monitoring and Asse: | Draft | Shannon Hubler | EMAP (Environmental Mon | Environmental Monitoring | 0 | 1/29/2015 |
| 3 | ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Vegetation P | Finalized | Matt Fairchild | PIBO (USFS Pacfish/Infish B | PIBO - Sampling Protocol f | 0 | 7/21/2016 |

ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Vegetation Parameters v1.0 v1.0

Protocol
10 - PIBO - Sampling Protocol for Vegetation Parameters

Monitoring Program
PIBO (USFS Pacfish/Infish Biological Opinion)

Methods (4 of 4)
[1211 - Modified Estimating Cover in Quadrats v1.0](#)
[1212 - Modified Greenline Vegetation v1.0](#)
[1213 - Modified Riparian Cross-Sections v1.0](#)
[1210 - Modified Collecting Plant Specimens v1.0](#)

Sample Designs (0 of 0)
None

Background
The Pacific Anadromous Fish Strategy (PACFISH) and Inland Fish Strategy (INFISH) Biological Opinion Effectiveness Monitoring Program (PIBO - EM) for aquatic and riparian resources was developed in 1998 in response to monitoring needs addressed in the Biological Opinions for bull trout (U.S. Department of the Interior, Fish and Wildlife Service 1998) and steelhead (U.S. Department of Commerce, National Marine Fisheries Service 1995). An interagency team representing the U.S. Department of Agriculture, Forest Service, the U.S. Department of Interior, Bureau of Land Management and U.S. Fish and Wildlife Service, and the U.S. Department of Commerce, National Marine Fisheries Service was convened to develop a large-scale monitoring program with the primary objective of determining whether PACFISH/INFISH management practices are maintaining, degrading, or improving biological and physical attributes, processes, and functions of riparian and aquatic habitats throughout the upper Columbia River Basin.

Objectives

- Determine whether PACFISH/INFISH management practices are maintaining, degrading, or improving biological and physical attributes, processes, and functions of riparian and aquatic habitats through UCRB

| | | | | | | | |
|---|---|-----------|----------------|-----------------------------|----------------------------|---|-----------|
| 4 | ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Stream Chan | Finalized | Matt Fairchild | PIBO (USFS Pacfish/Infish B | PIBO - Sampling Protocol f | 2 | 7/21/2016 |
| 5 | ARNF_Forest Plan_Stream PIBO - Sampling Protocol for Vegetation P | Draft | Matt Fairchild | PIBO (USFS Pacfish/Infish B | PIBO - Sampling Protocol f | 0 | 7/21/2016 |

Create new content

If you can't find a Study Plan that is similar enough to yours to clone and then adjust, you can create a new Study Plan by clicking the Create Study Plan button in the upper right-hand corner of the List of Study Plans.

Document Your Study Plan

- Create a concise and informative Study Plan title that identifies purpose, location, and focal species, select a monitoring program, and select a Protocol that will be linked to your Study Plan.
- To choose a Protocol that links to your Study Plan, you must have created a Protocol. The Protocol does not have to be finalized for you to select it in a study plan. By choosing **Not Listed?** you can create a new Protocol at this point.
- Complete the Background and Objectives (required) sections. This is a specific description of the issue, what you are doing and why, where you are sampling, and expected outcomes or results.
- Complete the Quality Control & Reporting, Personnel and Training, and Schedule & Budget sections. To help others better understand your Study Plan, please upload photos, images, illustrations, diagrams, and/or data collection forms and provide appropriate captions for each upload. These sections are not required but can provide relevant metadata so that your Study Plans can easily be replicated.
- Remember to Save your Study Plan, then proceed to the Sample Design to describe your sampling design and locations. At the top menu, choose DESIGN/Sample Design or navigate using the road map.
- Study Plans do not go through a finalization / review process step.

Edit Study Plan

* Study Plan Title: ODFW_CTUIR GRTS Test Annual Age-0 White Sturgeon Recruitment Indexing v1.0
Include specific focal species or project focus, location, organization. Example: "Oregon Department of Fish and Wildlife Steelhead Spawning Surveys in the Deschutes, Bakeoven, and Buck Hollow".

State: Finalized

* Monitoring Program: Oregon Department of Fish and Wildlife (ODFW)

* Protocol: Annual Age-0 White Sturgeon Recruitment Indexing v1.0

Owner: Josh Hanson (josh.hanson@state.or.us)

* Background

Recruitment of age-0 white sturgeon *Acipenser transmontanus* in the impounded reaches of the lower Columbia River (i.e., Bonneville, The Dalles, and John Day reservoirs) is assessed each year to identify and track status and trends in productivity (Cox 2015). This information is critical to the effective management of the resource, as dam construction and operation has negatively effected white sturgeon productivity in these reaches (Beamesderfer et al. 1995; Chapman and Jones 2010). This work, as part of a larger program designed to develop and implement a management plan for enhancing production of white sturgeon in the lower Columbia River Basin, has helped identify physical and environmental conditions favorable to spawning and subsequent age-0 recruitment within individual reservoirs.

What management or research questions and hypotheses do you intend to address? Include your project name, spatial, temporal, and species or species assemblage information. Please refer to supplemental information such as documents, diagrams, statistical models, or tables here, then upload them using Documents, Figures and Forms.

* Objectives

- Estimate the relative annual abundance of age-0 white sturgeon in each of the impounded reaches of the lower Columbia River. Characters Remaining: 75
- Relate age-0 recruitment to physical and environmental variables. Characters Remaining: 137
- Develop management recommendations to increase natural recruitment of age-0 white sturgeon in each of the impounded reaches of the lower Columbia River. Characters Remaining: 48

[Add an objective](#)

What objectives will meet your overarching goals planned for the research or monitoring project? These objectives will be achievable by executing the the protocol(s) referenced in this study plan and detailed in the sampling designs.

Quality Control & Reporting

Data Handling Considerations

Data are collected in the field, onboard the research vessel(s). Data are entered onto a Panasonic Toughbook (model CF-19) laptop computer. Data are stored on the computer hard drive and backed up simultaneously to a removable SD card in the laptop. After the sampling week is concluded, the computer is returned to the office where the data is downloaded to a backed-up server located at the ODFW Northwest Regional Office in Clackamas, OR.

Study Plan Summaries

Monitoring Resources
sponsored by: pacific northwest aquatic monitoring partnership

HOME | PORTFOLIO | CREATE & FIND | **STUDY PLAN SUMMARY** | MONITORING EXPLORER | COMMUNITY | LEARN

Home » Study Plan Summary

Active Study Plans | All Study Plans

List Of Active Study Plan Summaries

This grid only displays Study Plans considered to be "Active", so any Finalized Study Plans and non-Finalized Study Plans where the create/last modified date is less than 12 months old.

Viewing 509 of 509 active study plans.

| ID | Title | State | Owner | Program | Protocol | Sa... | Last M... |
|------|--|-----------|---------------------|----------------------------|------------------------------|-------|-----------|
| 1829 | Lethal air temperatures for dewatered lamprey v2.0 | Revising | Theresa "Marty" Lie | Bonneville Power Administr | Expose larval lamprey to el | 1 | 3/17/2022 |
| 1827 | Lamprey-specific electrofishing techniques: impacts to target an | Finalized | Theresa "Marty" Lie | Bonneville Power Administr | Lamprey-specific electrofist | 4 | 3/16/2022 |
| 1825 | Genetic evaluations of the South Fork Snake River Yellowstone C | Finalized | Patrick Kennedy | Idaho Department of Fish a | South Fork Snake River Yell | 0 | 3/10/2022 |

- Once you've started your documentation of a Study Plan, a Study Plan Summary will be automatically created
- The Study Plan Summary is a discovery and organizational tool that allows the user to view all content associated with a Study Plan (Study Plan Basics, Protocol, Methods, Metrics & Indicators, and Sample Design(s)) all on one sheet
- The Study Plan Summary is not editable, but users can easily jump to their editable content from the Study Plan Summary

Study Plan Summary

Study Plan: Environmental DNA (EDNA) Monitoring For Pacific Lamprey In The Columbia River Basin V1.0

ID: 1842 | State: Finalized | Version: 1.0

Owner: Brian McIlraith
Owner Email: brian.mcilraith@hdrinc.com

No. of Sample Designs: 3
No. of Methods: 8

Created by: Brian McIlraith
Created: 10/24/2022
Updated by: Brian McIlraith
Updated: 2/1/2023



Study Plan Basics

Protocol

Protocol Title
Environmental DNA (eDNA) monitoring for Pacific Lamprey in the Columbia River Basin v1.0

Citation
Laurie Porter. 2021. Environmental DNA (eDNA) monitoring for Pacific Lamprey in the Columbia River Basin v1.0. MonitoringResources.org <http://www.monitoringresources.org/Document/Protocol/Details/3605>

Protocol Photos & Protocol Figures

 (~81 KB)  (~83 KB)

Forms
<none>

Protocol [Methods](#) (8) [Expand All](#) [Collapse All](#)

- Environmental DNA (eDNA) Sampling — Filtering Water to Capture DNA from Aquatic Organisms v1.0 [View full Method](#)
- Environmental DNA (eDNA) Extraction from Filters Using the Qiagen DNeasy Kit v1.0 [View full Method](#)
- Environmental DNA (eDNA) Extraction for Centrifuged Samples Using the IBI Scientific gMAX Genomic DNA Kit v1.0 [View full Method](#)
- Environmental DNA (eDNA) Sample Processing — Centrifuging Water to Capture DNA from Aquatic Organisms v1.0 [View full Method](#)
- Environmental DNA (eDNA) Sampling — Water Collection for Centrifuging v1.0 [View full Method](#)
- Environmental DNA (eDNA) Extraction for Centrifuged Samples Using the Qiagen DNeasy Kit v1.0 [View full Method](#)
- Environmental DNA (eDNA) Sampling — Site Selection v1.0 [View full Method](#)
- Modified eDNA extraction method for Lamprey v1.0 [View full Method](#)

[Metrics & Indicators](#)