Methods for Monitoring Fish Communities of Buffalo National River and Ozark National Scenic Riverways in the Ozark Plateaus of Arkansas and Missouri, Version 2.0

Standard Operating Procedure (SOP) 12: Revision of the Protocol, Version 2.0

Revision History Log:

Previous version number	Revision date	Author	Changes made	Reason for change	New version number
1.0	12/14/2016	Dodd	Protocol Narrative Revision log removed from SOP and added to Protocol Narrative	Make SOPs stand-alone documents from the Protocol Narrative	1.1
1.0	4/30/2018	DeBacker, Dodd	Updated to incorporate review guidance from IMD	New protocol review guidance from IMD	1.1
1.1	6/4/2018	DeBacker, Dodd	Clarify different types of review, their expected outcomes, and steps to document protocol review and revision	Integrated IMID protocol review guidance into SOP	2.0

Inventory and Monitoring Division Protocol Review Guidance (Mitchell *et al*. 2018) provides thorough guidance for conducting protocol reviews and for revising protocols. A brief summary is provided here. Guidance prescribes two categories of protocol reviews, operational and scientific. Operational reviews may, and scientific reviews will result in changes to the protocol narrative, SOPs or QAP. Within the scientific review category, guidance defines three levels of review – targeted, full protocol, and multi-protocol. "A targeted protocol review typically addresses one or two goals, in a rapid manner designed to minimize interference with ongoing network operations. A full protocol review is more time consuming, and takes a holistic and in-depth look at the protocol, while a multi-protocol review looks at the larger program and how the protocols interrelate to provide scientists and managers with scientifically sound information" (Mitchell et al. 2018). Operational reviews are conducted annually and documented through the annual reporting process (See Reporting SOP 11). Scientific reviews are conducted as needed (Table 1).

The table and following text (in italics) are taken from Mitchell, B., A. Chung-MacCoubrey, J. Comiskey, L. Garrett, M. MacCluskie, B. Moore, T. Philippi, G. Sanders and J.P. Schmit. 2018. Inventory and Monitoring Division protocol review guidance. Natural Resource Report NPS/NRSS/IMD/NRR—2018/1644. National Park Service, Fort Collins, Colorado.

Table 1. Types of reviews covered by this guidance and basic characteristics of each. NPM = Network Program Manager, RPM = Regional Program Manager.

Type of Review	Purpose	Triggers	Timing	Outcomes	Managed By	Approved By
Operational	Review protocol implementation and effectiveness	Completion of a field season.	Annual; required time ranges from a few hours to a few days	Documented suggestions for improving protocol. Documented decisions about suggestions. Documented deviations from protocol. Updated protocol documents (primarily SOPs). Plan for addressing safety concerns.	Protocol lead	NPM[1]
Scientific: Targeted Protocol	Discuss one or a few SOPs or limited design changes	Findings from operational review, multi-protocol review, or data analyses. Concerns from network staff or RPM. Availability of new approach or tool. Budget concerns.	As needed; required time ranges from a few days to several weeks	Synopsis of rationale for the review. Validation of current approach or approval to modify protocol. Documentation of the effects of changes on data and plan for updating data management and analysis. Revised protocol documents.	NPM or protocol lead	RPM
Scientific: Full Protocol	Conduct in-depth review of protocol	Findings from operational review, multi-protocol review, or data analyses. Concerns from network staff or RPM. Availability of new approach or tool. Budget concerns.	As needed; required time ranges from a few days to several weeks	Synopsis of rationale for the review. Validation of current approach or approval to modify protocol. Documentation of the effects of changes on data and plan for updating data management and analysis. Revised protocol documents.	NPM or protocol lead	RPM
Scientific: Multi-Protocol	Big-picture review of network Vital Signs and integration between them	Network staff or RPM believe a review is warranted.	As needed; required time ranges from one to several weeks	Synopsis of rationale for the review. Validation of current approach or approval to modify Vital Signs or other aspects of network operations.	NPM	RPM and IMD Chief

[1]RPM if there is a change to the protocol narrative or Quality Assurance Plan.

Scientific Review Required Outcomes

1. Brief synopsis of rationale for the scientific review. Concisely describe the issue or concern that the scientific review is investigating. This could range from a general desire to ensure the scientific validity of a protocol to a specific issue that needs to be addressed.

2. For targeted and full protocol reviews, validation of current protocol objectives, design, methods, and standards (as appropriate for the type of scientific review), or recommendations to modify the protocol based on the findings of the scientific review. For example, a targeted review may only require validation or modification of some specific methods. In some situations, additional expert guidance regarding proposed changes may be needed before a decision can be approved. In this case the outcome will be an approved plan outlining the steps and timeline for making a decision.

3. If a recommendation is made to modify a protocol:

a. Documentation of any effects on data quality, data usability, or data quality standards, including whether (and how) data collected prior to protocol changes will be compatible with data collected after the changes.

b. Plan (tasks and timeline) for updating data management processes, revising the protocol database, flagging affected data, updating analysis methods, and updating reporting (as appropriate) to accommodate the changes.

c. Revised protocol documents suitable for peer review, or a plan (tasks and timeline) to accomplish the revisions.

4. For full protocol and multi-protocol reviews, an additional outcome is validation of current operations, or approval to modify the protocol(s) to improve information dissemination (what is being produced, in what formats, and how is it being made available) and support intended scientific and decision-support needs. If modifications are approved, an approved plan (tasks and timeline) for accomplishing the modifications is needed.

5. For multi-protocol reviews, an additional outcome is validation of the current suite of vital signs, or recommendation to modify the vital signs monitoring plan to improve the ability of the network to provide sound science to support park management. If monitoring plan changes are approved, a schedule of tasks and timelines for accomplishing the changes must be approved.

Protocol Revision Documentation

1. Publication

a. The narrative and quality assurance plan are published as NPS Natural Resource Reports, and if these have changed the revised versions need to be submitted to the Natural Resource Publications Management Office (https://www.nps.gov/im/report-procedures.htm) for a new report number.

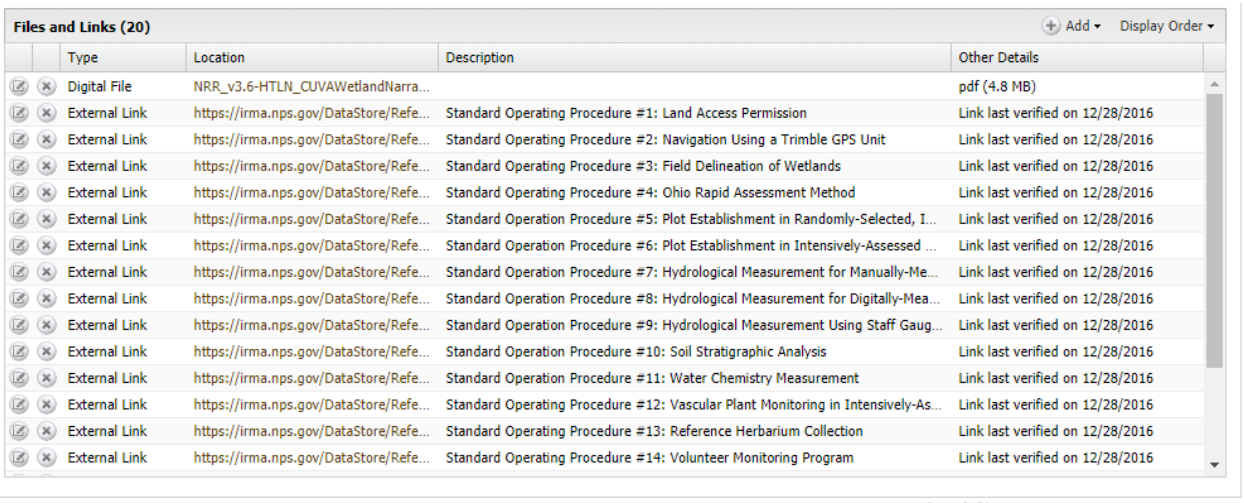
b. Each standard operating procedure is uploaded as a unique record to the Integrated Resource Management Application (IRMA) with the reference type set to Standard Operation Procedure. (Note: SOPs are not published in the NPS Natural Resource Publication Series.)

i. Add the program manager, data manager, and science communication specialist as owners.

ii. Assign HTLN and specific parks where monitoring is conducted as units in the IRMA record.

c. Each SOP record is linked to the protocol narrative record in IRMA using the External Link feature (see example in Figure 1). If you are not an owner of the protocol narrative IRMA record, seek assistance from the science communication specialist or another IRMA administrator with this step.

i. Open the protocol narrative record in IRMA.
ii. Click on the Files and Links tab
iii. Click the add button, and choose external link.
iv. Provide the URL to the SOP record and type in a description
v. Repeat for each SOP



Files and Links (20) Add Display Order

Type	Location	Description	Other Details
Digital File	NRR_v3.6-HTLN_CUVAWetlandNarra...		pdf (4.8 MB)
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operating Procedure #1: Land Access Permission	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operating Procedure #2: Navigation Using a Trimble GPS Unit	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operating Procedure #3: Field Delineation of Wetlands	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operating Procedure #4: Ohio Rapid Assessment Method	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operation Procedure #5: Plot Establishment in Randomly-Selected, I...	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operation Procedure #6: Plot Establishment in Intensively-Assessed ...	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operation Procedure #7: Hydrological Measurement for Manually-Me...	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operation Procedure #8: Hydrological Measurement for Digitally-Mea...	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operation Procedure #9: Hydrological Measurement Using Staff Gaug...	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operation Procedure #10: Soil Stratigraphic Analysis	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operation Procedure #11: Water Chemistry Measurement	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operating Procedure #12: Vascular Plant Monitoring in Intensively-As...	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operating Procedure #13: Reference Herbarium Collection	Link last verified on 12/28/2016
External Link	https://irma.nps.gov/DataStore/Refe...	Standard Operating Procedure #14: Volunteer Monitoring Program	Link last verified on 12/28/2016

Figure 1. Example of a protocol narrative record in IRMA with external links to standard operating procedures.

2. Archiving—The network program manager ensures that review-related documents are organized and stored in a readily discoverable location on the network's server.

3. Protocol tracking database—The network program manager is responsible for updating information about the protocol in the I&M protocol tracking database (https://irma.nps.gov/protocoltracking/)

References Cited

Mitchell, B., A. Chung-MacCoubrey, J. Comiskey, L. Garrett, M. MacCluskie, B. Moore, T. Philippi, G. Sanders and J.P. Schmit. 2018. Inventory and Monitoring Division protocol review guidance. Natural Resource Report NPS/NRSS/IMD/NRR—2018/1644. National Park Service, Fort Collins, Colorado.