

Standard Operating Procedure 8: Annual Operational Review

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Change History

Original Version #	Date of Revision	Revised By	Changes	Justification	New Version #

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Overview

This Standard Operating Procedure (SOP) outlines Operational Reviews that should be conducted annually after the previous year's data has been certified. These reviews help ensure that the ERMN collects continuous river water-quality monitoring data consistently through time. Operational Review objectives are to:

1. Obtain feedback from staff on protocol implementation,
2. Ensure that the protocol remains in sync with annual monitoring activities,
3. Document changes in procedures and equipment,
4. Capture lessons learned as changes to be made going forward, and
5. Provide ERMN staff with an opportunity to discuss the state of the science of the protocol.

Outcomes

1. Documentation of suggestions for improving the protocol and decisions regarding those suggestions.
2. Documentation of deviations between the protocol and implementation during the previous year that could potentially affect data quality or utility. For these deviations, document whether they need to be addressed with changes or clarifications to procedures. Update certified records and database by flagging and documenting affected data appropriately.
3. If methods or equipment are changed or clarified, update and approve protocol documents or prepare an approved plan (tasks and timeline) for revising the protocol.
4. Identify and verify mitigation of safety risks associated with protocol implementation. For any newly identified or incompletely mitigated risks, approve a plan (tasks and timeline) for mitigating the risks and updating the Safety SOP (SOP 6).

Timing

Operational reviews occur after each water year, typically in December or January, after the Aquatic Ecologist has certified all data and completed the End of Year Closeout Checklist (SOP 5).

Participants

The Aquatic Ecologist facilitates the review with input from the Hydrologic Technician and Data Manager. The Program Manager provides input and approves any modifications to the protocol. All network staff should be included if they are available.

Content

Discuss protocol implementation, including:

- State of the science. Discuss whether changing needs, new conditions, or emerging information (from the network or external sources) suggest the need for a more intensive scientific review of the protocol's efficacy and relevance (hereafter, scientific review).

- Known situations where SOPs were not followed, and whether these situations affected data quality or utility. If so, affected data should be flagged or removed from the database and/or period of water quality record.
- Safety is a primary concern and should be discussed on an ongoing basis. If a safety risk was identified in the field, staff must not visit sites or implement methods that risk their safety. The operational review should consider the situation and determine if protocol changes to protect safety are needed, as well as whether the proposed changes require a scientific review.
- Instances where SOPs need clarification and how the unclear situation(s) were handled in the field.
- Situations where new SOPs may be needed (for new equipment, new methods, new data management practices, etc.). New SOPs will need scientific review if they affect the monitoring approach or quality of the data.
- Changes to streamline/improve procedures (including new equipment)
 - For changes that are not expected to require scientific review, the operational review may evaluate side-by-side data to ensure that scientific review is unnecessary (e.g., to confirm that a new type of sensor has the same sensitivity as an older type).
- Proposed improvements to reporting and analysis SOPs
 - Note that new analysis approaches and example products will require a scientific review if the intent is to replace or update the current reporting and analysis procedures for routine products.
 - Discussion of sample site issues.
- Changes to data management procedures that maintain or enhance quality assurance and quality control (QA/QC).
- Safety Review.
 - Discuss any incidents, near misses, and actions taken or needed.
 - Discuss suggestions for making procedures safer, including equipment improvement and training needs.

Documentation

- Protocol review meeting minutes in sufficient detail so a reader can understand the issues discussed and decisions made.
- Documentation of known deviations from protocol methods.
- For any newly identified or incompletely mitigated safety risks, provide a plan (tasks and timeline) for mitigating the risks and updating the network safety documents.

- Revised protocol documents (not all of the following documents are applicable in all situations). Tracked-change documents are recommended because they facilitate review by highlighting changes. The Network Program Manager or Regional Program Manager may choose to require tracked-change documents. Revised protocol documents include
 - o revised narrative and QA/QC documentation (rare; generally to synchronize methods descriptions with changes to SOPs);
 - o revised SOPs or new SOPs;
 - o Updated supplementary materials

Responsibilities

- The Aquatic Ecologist manages the operational review.
- The ERMN Data Manager is responsible for updating the protocol's NPS Data Store record, using versioning when available.
- The Program Manager:
 - o Reviews and archives the minutes and associated documentation.
 - o Contacts the Regional Program Manager to request a scientific review if needed, but Operational Reviews will generally not result in a need for scientific and/or external review.
 - o Reviews and approves changes to the protocol that stem from an operational review.
 - o Updates information about the protocol in the protocol tracking database.