

Core Expectations for Vital Signs Monitoring

What this Guidance Does

This guidance summarizes programmatic expectations for National Park Service Inventory and Monitoring Division (IMD) networks in their implementation of long-term ecological monitoring. The IMD Leadership Team and Extended Leadership Team outlined this set of expectations to clarify and set achievable standards that serve as an actionable roadmap for delivering high-quality, accessible science in support of the National Park Service mission.

What It's For

This framework is a tool to inform network planning and program management. Networks may use this tool to identify where contemporary vital signs monitoring is and is not meeting expectations, then develop an approach to bringing operations in alignment with expectations.

Larger Context

This is the first in a series of guidance that will establish minimum requirements for multiple aspects of the Inventory & Monitoring Division, including Network Program Management, Central Support Office, and Inventories. ***Best practices to guide implementation are being developed for each numbered component below.***

Timeline

At minimum, the IMD Leadership Team will annually review the Core Expectations and update them as needed, and link to new or updated guidance and best practices as they are developed. It is anticipated that networks may take 2–5 years to begin meeting these expectations.

Core Expectations for Vital Signs Monitoring

1. Update and Follow Sustainable Network Monitoring Plans

- Periodically amend Network Monitoring Plans to outline the suite of vital signs that can be achieved within contemporary capacity.
- Design sustainable plans with sufficient capacity to complete all steps in the IMD Science Delivery Life Cycle for every active network vital sign.

2. Use Peer-reviewed Study Designs to Guide Collection of Monitoring Data

- Ensure all protocols or study plans conform to best practices (e.g., measurable objectives can be addressed by data analyses; data quality assurance practices are designed and implemented to ensure accuracy and consistency of long-term monitoring data).
- Periodically review each protocol to ensure staff use best current monitoring techniques and that methods are effective and efficient.
- Publish revised protocols when there is a major change.

3. Ensure Scientific Excellence and Integrity

- Gather data using methods established in published, peer-reviewed protocols, protocol implementation plans, and SOPs.
- Conduct Operational Reviews after each field season and document sampling aberrations from the protocol along with any other key characteristics of the season that may influence future data analyses in a consistent location per protocol.
- Ensure that all science information products receive the appropriate level of peer review.

4. Follow Sound Data Management Practices

- Periodically update data management documentation of procedures (including QA/QC and data delivery practices).
- Publish data to DataStore with public availability (or NPS-only availability for sensitive data) in a timely fashion.

5. Disseminate Routine Data Summaries (produced and distributed per protocol or monitoring plan).

- Publish summaries to report basic status.
- Summarize data at intervals relevant to the program design to screen for erroneous data and supplement QA/QC procedures, as well as communicate program and resource status.

6. Perform Analyses and Publish Results

- Undertake analyses at intervals relevant to the monitoring subject, that address the objectives of the protocol.
- Publish trend or synthesis reports in either external journals or in the NPS Science Publication Series.
- Evaluate whether results of multi-year analyses fulfill protocol objectives are relevant to supporting park needs; confirm study design validity; or inform whether to change monitoring frequency, parameters, or geographic scope.

7. Communicate Our Science

- Provide science results to park managers and staff for use in decisionmaking.
- Conduct outreach to multiple internal, external, and public audiences to amplify the role and utility of IMD in the NPS conservation mission.
- Collaborate with park natural resource staff through regular meetings to coordinate IMD work with park activities and improve the capacity of the I&M program to meet NPS needs.