



NATIONAL PLAN FOR CIVIL EARTH OBSERVATIONS

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Executive Summary

The U.S. Government is the largest provider of environmental and Earth-system data in the world. These data are derived from observations of the Earth, which are used by Federal agencies and their partners to carry out their missions. These data form the foundation of services that protect human life, property, the economy, and national security, and they support research to foster scientific advances. Provided through public funding, they are made open to the greatest extent possible to advance human knowledge, to enable private industry to provide value-added services, and for general public use.

As the Nation's Earth-observation capacity and related data holdings have grown, so has the complexity of the challenge of managing Earth observation systems effectively and taking full advantage of the data they collect. While Earth observations and data are often collected to support the delivery of well-defined products and public services or meet specific research needs, improved coordination and access would ensure that the data are used more broadly. By expanding the use of observations and data beyond the purposes for which they are originally collected, the United States can maximize the impact of the resources invested in Earth-observation systems.

In October 2010, Congress charged the Director of the Office of Science and Technology Policy (OSTP) with establishing a mechanism for addressing this challenge through the production and routine update of a strategic plan for Earth observations. In response, OSTP convened a National Earth Observations Task Force (NEOTF) in February 2011, which produced the National Strategy for Civil Earth Observations in April 2013. The NEOTF also conducted the first assessment of the Federal Earth observations enterprise. The resulting Earth-Observation Assessment (EOA) considered the impact of observing systems on distinct societal benefit areas.

This document, the *National Plan for Civil Earth Observations* (hereafter referred to as the National Plan), incorporates the priorities identified in the EOA to provide strategic guidance for a balanced portfolio approach to managing civil Earth observations to fulfill agency mandates and achieve national objectives. As required by law, this National Plan will be updated every three years to provide greater coordination of Federal civil Earth-observation systems.

The National Plan defines a new framework for constructing a balanced portfolio of Earth observations and observing systems. This framework classifies Earth-observation activities according to two broad categories, "sustained" and "experimental" based on the duration of the anticipated Federal commitment:

- Sustained observations are defined as measurements taken routinely that Federal agencies are committed to monitoring on an ongoing basis, generally for seven years or more. These measurements can be for public services or for Earth-system research in the public interest.
- Experimental observations are defined as measurements taken for a limited observing period, generally seven years or less, that Federal agencies are committed to monitoring for research and development purposes. These measurements serve to advance human knowledge, explore technical innovation, and improve services, and in many cases may be first-of-their-kind Earth observations.

Within the subcategory of sustained observations for public services, the National Plan defines two tiers of measurement groups. Tier 1 measurement groups are those derived from systems identified in the EOA as having high impact on a majority of the societal benefit areas; Tier 2 measurement groups include those derived from the remaining high-impact systems. While the EOA provided higher overall scores to Tier 1 systems, many Tier 2 systems contribute critically, or are essential, to key objectives in one or more societal benefit areas. Some Tier 2 systems are the only observing systems available for accomplishing a particular objective.

These new categories advance the Nation's approach to Earth observations by describing a new framework based on the duration of Federal commitment to the period of observation, which is an essential step for prioritizing the Nation's Earth observations portfolio. This framework is also a step toward addressing a key policy challenge in Earth observations: determining when experimental observations should be transitioned to sustained observations for research or for delivery of public services.

Based on this framework and the results of the EOA, the National Plan establishes the following rank-ordered priorities:

1. Continuity of sustained observations for public services
2. Continuity of sustained observations for Earth-system research
3. Continued investment in experimental observations
4. Planned improvements to sustained observation networks and surveys for all observation categories
5. Continuity of, and improvements to, a rigorous assessment and prioritization process

The overall set of observations resulting from these priorities should yield a balanced Earth-observations portfolio.

While the National Plan provides guidance in setting priorities for the construction of the portfolio, agencies have discretion, in consultation with the Executive Office of the President and Congress, to deviate from the National Plan's rankings of priorities when necessary for managing specific systems in the categories and tiers outlined in this document. The National Plan provides this flexibility while still meeting the Nation's overall civil Earth-observation priorities and objectives.

The National Plan also identifies the following rank-ordered supporting actions that will maximize the benefits derived from the Nation's Earth observations:

1. Coordinate and integrate observations
2. Improve data access, management, and interoperability
3. Increase efficiency and cost savings
4. Improve observation density and sampling
5. Maintain and support infrastructure

6. Explore commercial solutions
7. Maintain and strengthen international collaboration
8. Engage in stakeholder-driven innovation

The National Plan also describes specific agency roles and responsibilities for sustaining observation systems and platforms.

Implementation and coordination of the activities outlined in the National Plan will be conducted through the budget and program-planning activities of the relevant Federal agencies and through interagency processes. Federal agencies will determine implementation schedules, progress reviews, and funding profiles in consultation with the Executive Office of the President.

The primary forum for interagency discussion and coordination of Earth observation, related data management, and related international issues is the United States Group on Earth Observations (USGEO) Subcommittee of the National Science and Technology Council (NSTC) Committee on Environment, Natural Resources, and Sustainability (CENRS). OSTP, in consultation with the USGEO Subcommittee, the NSTC CENRS, and their member agencies, will review and update this National Plan on a three-year cycle. As part of the update process, OSTP will solicit and consider the input of external stakeholders and the general public. For this first National Plan, OSTP sought input from external stakeholders through a publicly released Request for Information.