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MEMORANDUM FOR EXECUTIVE DEPARTMENTS AND AGENCIES

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SUBJECT: Incorporating Ecosystem Services into Federal Decision Making

Overview. Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in decisions. This memorandum provides direction to agencies on incorporating ecosystem services into Federal planning and decision making. (Broadly defined, ecosystem services are the benefits that flow from nature to people, e.g., nature's contributions to the production of food and timber; life-support processes, such as water purification and coastal protection; and life-fulfilling benefits, such as places to recreate.)

Specifically, this memorandum:

(1) Directs agencies to develop and institutionalize policies to promote consideration of ecosystem services, where appropriate and practicable, in planning, investments, and regulatory contexts. (Consideration of ecosystem services may be accomplished through a range of qualitative and quantitative methods to identify and characterize ecosystem services, affected communities' needs for those services, metrics for changes to those services and, where appropriate, monetary or nonmonetary values for those services.)
(2) Sets forth the process for development of implementation guidance and directs agencies to implement aforementioned policies and integrate assessments of ecosystem services, at the

appropriate scale, into relevant programs and projects, in accordance with their statutory authority.

Purpose. The goal of this memorandum and subsequent implementation guidance is to better integrate into Federal decision making due consideration of the full range of benefits and tradeoffs among ecosystem services associated with potential Federal actions, including benefits and costs that may not be recognized in private markets because of the public-good nature of some ecosystem services. An ecosystem-services approach can: (1) more completely inform planning and decisions, (2) preserve and enhance the benefits provided by ecosystems to society, (3) reduce the likelihood of unintended consequences, and, (4) where monetization is appropriate and feasible, promote cost efficiencies and increase returns on investment. Adoption of an ecosystem-services approach is one way to organize potential effects of an action within a framework that explicitly recognizes the interconnectedness of environmental, social, and, in some cases, economic considerations, and fosters consideration of both quantified and unquantified information. This memorandum sets a course to implement this approach.

Scope. This memorandum complements but does not supersede agency activities prescribed by or pursuant to law, tribal consultation policy, Executive Order, regulation, or other relevant guidance. This document provides direction for relevant Federal programmatic and planning activities (including activities such as natural-resource management and land-use planning, climate-adaptation planning and risk-reduction efforts, and, where appropriate, environmental reviews under the National Environmental Policy Act (NEPA)) and other analyses of Federal and Federally-assisted programs, policies, projects, and regulatory proposals. For example, should an agency's analysis require consideration of costs, the agency should consider ecosystem-services assessment methods, where appropriate and feasible.

Background. Ecosystem services provide vital contributions to economic and social well-being. These include, but are not limited to, provisioning food and materials, improving the quality and moderating the quantity of water, providing wildlife habitat and spawning and nursery habitats for fisheries, enhancing climate resilience, mitigating storms and floods, buffering pollutants, providing greater resilience for communities and ecosystems, and supporting a wide array of cultural benefits, recreational opportunities, and aesthetic values. Since the President's Council of Advisors on Science and Technology (PCAST) underscored the value of the Nation's natural capital in its 1998 report, *Teaming with Life*, successive Administrations have worked to develop methodologies and have convened interagency dialogues to advance ecosystem-services approaches in Federal decision making. In 2011, the PCAST revisited the 1998 report, making a specific recommendation to improve the capabilities of Federal agencies to promote consideration of ecosystem services in decision making. The Federal government has made progress toward this goal within individual agencies—for example, in the U.S. Forest Service's 2012 Forest Planning Rule—and in setting broad policy across agencies—for example, by including ecosystem-services concepts in the recent Principles, Requirements and Guidelines for Federal Investment in Water Resources (PR&G).

In recent years, considerable attention has also focused on the role that healthy and intact natural habitats can play in enhancing resilience of communities and ecosystems, including reducing

vulnerability to climate-change impacts. Multiple efforts are underway to incorporate natural and nature-based infrastructure (e.g., dunes and barrier islands) to enhance storm and flood protection, along with efforts to restore natural features (e.g., oyster reefs in the Chesapeake Bay) to benefit multiple ecosystem services, such as fish habitat and water quality. Increased emphasis on ecosystem services to enhance resilience underscores the need for a consistent framework for incorporating ecosystem services into Federal decision making.

Today, the links among land, air, fresh water, ocean, and human activities are better understood. Advances in science and technology have provided timely and usable information to guide decision making. For example, advances in the social sciences have further developed methods to articulate the value of ecosystem services in both monetary and non-monetary terms. By incorporating ecosystem services into Federal agency planning and decision making, and recognizing that healthy ecosystems are essential to human welfare, security, and the health of social and economic systems, Federal agencies will more effectively address the challenges facing the Nation and ensure ecosystems are healthy for this and future generations.

Directive. Agencies shall develop policies to promote consideration of ecosystem-services assessments within existing agency planning and decision frameworks, where appropriate and practicable, in accordance with their statutory authorities and consistent with their specific missions.

1. Policies should describe approaches for conducting decision-relevant and scale-specific ecosystem-services assessments, as well as plans for effective monitoring and evaluation.
2. These policies do not need to be standalone documents and may be most useful when incorporated into existing decision-making frameworks and analyses. Agencies are encouraged to carry out the provisions of this guidance through existing planning and strategic processes such as: Agency and Departmental Strategic Plans, Strategic Sustainability Performance Plans, and Annual Performance Reports.
3. To support agencies in this process, a forthcoming appendix will provide implementation guidance for this memorandum to suggest best practices for ecosystem-services assessment. The implementation guidance will outline an assessment framework for integrating consideration of ecosystem services into existing agency decision process and will describe the elements and approaches for sound integration of ecosystem-services concepts, such as: (1) describing the Federal action; (2) identifying and classifying key ecosystem services in the location of interest; (3) assessing the impact of the Federal action on ecosystem services relative to baseline; (4) assessing the effect of the changes in ecosystem services associated with the Federal action; and (5) integrating ecosystem-services analyses into decision making.

Implementation Process and Timelines. This policy guidance is intended to support those agencies already using ecosystem-services approaches and to encourage other agencies to prepare for implementation in a manner consistent with the forthcoming implementation guidance.

All agencies should begin or continue developing their policies. Agencies already deploying ecosystem-services analyses are encouraged to continue their efforts, but should be prepared to demonstrate over time how their approaches relate to the standards of best practice identified in

the implementation guidance, or to make appropriate adjustments going forward. Implementation of this memorandum will follow the timeline below.

1. **Description of current agency practice and work plans** (6 months; Agencies)
   (a) To inform future governance considerations, agencies shall describe how ecosystem services are currently defined, classified, and incorporated in planning, management, and regulatory decisions. This written description should characterize the current state of agency practice and provide a narrative description of current challenges, if any, which could or do impede the consideration of ecosystem services in Federal decision making. To help with this process, agencies are encouraged, but not required, to review or update existing inventories with relevant efforts, using common definitions and a common framework.
   (b) Each agency shall create a work plan, developed in an internally coordinated manner, laying out how it intends to move toward the goals of this policy directive. These work plans should build off agency descriptions of existing efforts developed in (a). They should identify specific examples of policies planned for the future, as well as identify high-priority programs, projects, or analyses appropriate for integrating ecosystem services assessments within existing decision frameworks.
   (c) Written descriptions (a) and work plans (b) should be completed and submitted to CEQ no later than March 30, 2016.
   (d) Following the release of the implementation guidance (timeline below), agencies will be expected to revise and refine their work plans to show that they are consistent with that document. Revised work plans should be submitted to CEQ within 120 days of the release of the final implementation guidance.

2. **Implementation guidance** (14 months; CEQ)
   (a) The implementation guidance will be developed in collaboration with subject-matter experts from relevant Federal departments and agencies and will be informed by the significant body of research published in the peer-reviewed literature. The guidance will be issued as an appendix to this memorandum.
   (b) The implementation guidance will be subject to an external peer review and public comment period, consistent with the requirements of the Office of Management and Budget (OMB)'s Final Information Quality Bulletin for Peer Review.
   (c) Prior to release for external peer review, there shall be an interagency review period of the implementation guidance of not less than 30 days.
   (d) External peer review will commence no later than November 30, 2016. The memo will be finalized and released following the resolution of the peer review and public-comment process.
   (e) The implementation guidance is intended to be a living document and will be updated as needed to incorporate emerging science and new methodological advances.

Governance and Interagency Coordination. Full integration of ecosystem services into agency decisions will be a long-term process, taking place over many years, as agencies modify existing programs and policies in accordance with the practices outlined in the implementation guidance. Ultimately, successful implementation of the concepts in this directive may require Federal

agencies to modify certain practices, policies, or existing regulations to address evolving understandings of the value of ecosystem services.

Moving forward, CEQ, in consultation with OMB, OSTP, and CEA, will facilitate interagency coordination and engagement around ecosystem services, including supporting agencies in their work to incorporate ecosystem-services assessments in decision making. CEQ, in consultation with OMB, OSTP, and CEA, will also coordinate with existing work groups and other governance structures to develop a longer-term strategy for providing sustained leadership and interagency coordination around ecosystem services. Such ongoing coordination is needed to provide support and oversight for agency work plans and to share best practices for integrating ecosystem services into Federal decision making, including policy development and institutionalization, alignment of data and tools, implementation of relevant research priorities, and integrating assessments into program and project analysis.