United States Department of the Interior

NATIONAL PARK SERVICE
1849 C Street, N.W.
Washington, D.C. 20240

DIRECTOR'S ORDER #100: RESOURCE STEWARDSHIP FOR THE 21ST CENTURY

Approved: Jonathan B. Jarvis
Director

Effective Date: December 20, 2016

Duration: This Order will remain in effect until amended or rescinded.

This Director's Order, together with Reference Manual 100, supersedes and replaces Policy Memorandum 16-01, and any other previously issued conflicting guidance.

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1. Background and Purpose

The National Park System[1] and related areas[2] face environmental and social changes that are increasingly widespread, complex, accelerating, and uncertain. Addressing these challenges requires updates of National Park Service (NPS) policy to reflect the complexity of decisions needed for resource stewardship. This Director's Order (Order) is intended to guide the Service in taking the necessary actions to support resource stewardship to fulfill its mission in the 21st century. The Order builds on the direction set in Policy Memorandum 16-01. See also Policy Memoranda 12-02, 14-02 and 15-01.

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[1] The "National Park System" includes those areas of land and water administered by the National Park Service for park, monument, historic, parkway, recreational, or other purposes (see, 54 USC 100501).
[2] "Related areas" include affiliated areas, national heritage areas, national trails, and wild and scenic rivers that are not part of the National Park System.

1.1 Background

In 1963, A. Starker Leopold chaired a committee of scientists in preparing a report titled, *Wildlife Management in the National Parks*. Known as the "Leopold Report," it represented the first comprehensive attempt at evaluating best practices and principles for sustainable resource management, and was a source of longstanding policies for natural resource management in the National Park System.

Much has changed for the NPS since the 1960s. The number and types of units in the System, and its overall size, have increased significantly. The annual number of visitors has grown four-fold. Social, cultural, and demographic changes to American society have been profound. Climate change is creating and will continue to drive dynamic environmental shifts that affect natural and cultural resources, facilities, visitation patterns, and visitor experiences. Additional pressures such as biodiversity loss, invasive species, land use changes, and pollution are accelerating. New scientific information and new disciplines of science have expanded our understanding of natural and cultural systems, and revealed that much is still unknown about how these systems function.

For these reasons, the Director asked the Science Committee of the National Park System Advisory Board (NPSAB) to revisit the Leopold Report and provide findings and recommendations. The committee delivered *Revisiting Leopold: Resource Stewardship in the National Parks* (Report) to the NPSAB, which adopted and presented it to the Director.

The Report makes several important recommendations for advancing resource stewardship in the 21st century, noting:

> The overarching goal of NPS resource management should be to steward NPS resources for continuous change that is not yet fully understood, in order to preserve ecological integrity and cultural and historical authenticity, provide visitors with transformative experiences, and form the core of a national conservation land- and seascape.

1.2 Purpose

The purpose of this Order, and its companion Reference Manual (RM-100), is to articulate and communicate policies and actions to support resource stewardship in the 21st century. This Order will help the Service fulfill the NPS mission:

> The National Park Service preserves unimpaired the natural and cultural resources and values of the [N]ational [P]ark [S]ystem for the enjoyment, education, and inspiration of this and future generations. The National Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world. [*Management Policies* (2006), inside front cover.]

This Order provides policies that form a new framework for stewardship decision making within the NPS based upon the overarching resource stewardship goal described in section 3. The Order also defines new terms and concepts that will be used in this and future guidance.

2. Authority

Authority to issue this Order is contained in the National Park Service Organic Act and other NPS laws (54 USC 100101(a) et seq.), and delegations of authority contained in Part 245 of the Department of the Interior (DOI) Manual.

This Order is intended only to improve the internal management of the NPS, and is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its departments, agencies, instrumentalities or entities, its officers or employees, or any other person.

3. Establishing the NPS Overarching Resource Stewardship Goal

This Order reaffirms that resource stewardship is a preeminent duty of the NPS, and that "[w]hen proposed park uses and the protection of park resources and values come into conflict, the protection of resources and values must be predominant." *Management Policies,* section 1.5. The NPS defines resource stewardship as both an ethic of active responsibility to pass on the parks unimpaired to future generations as well as the application of the necessary expertise to meet this duty. This ethic and application of expertise extends to NPS programs and NPS participation in partnerships. This Order does not redefine "unimpaired," but instead recognizes (1) there are new and complex environmental and social forces affecting park resources that must be considered in resource management, and (2) these forces may be beyond the influence of the NPS and their consequences may be irreversible.

The overarching goal of resource stewardship (stewardship goal) is to manage NPS resources in a context of continuous change that we do not fully understand, in order to:

- preserve and restore ecological, historical, and cultural integrity;
- contribute as an ecological and cultural core of national and international networks of protected lands, waters, and resources; and
- provide visitors and program participants with opportunities for transformative experiences that educate and inspire.

The stewardship goal will be achieved by incorporating it into NPS management and culture. This requires relying on science and scholarship for guidance in understanding novel conditions, threats, and risks to resources and identifying and evaluating management actions; exemplary resource management practices; collaboration with partners outside park boundaries; and open and inclusive communication with partners and the public. In addition, it is essential that policies consider NPS resources and values in a broader context, with particular attention to preservation of significant natural and cultural land/seascape elements, critical habitats and features, and wilderness character. (See Director's Order #41: Wilderness Stewardship, section 6.2).

To achieve the stewardship goal, the NPS will:

- integrate the management of natural and cultural resources, where beneficial to resource stewardship;
- adopt and apply new conservation concepts and guiding strategies for resource stewardship;
- update and sustain the NPS workforce; and
- incorporate these concepts, policies, and actions into appropriate management documents.

The following sections identify specific policies and actions necessary for implementing this stewardship goal in the 21st century.

This Order does not explicitly address the transformative experiences component of the stewardship goal. Efforts in that regard are already underway, and can be found in *Achieving Relevance in Our Second Century* (2014) and future guidance.

4. Integrating Natural and Cultural Resource Stewardship

4.1 Objective

To incorporate the stewardship goal into NPS management and culture, the Service will integrate natural and cultural resource management where beneficial to resource stewardship. This integration recognizes the impact of humans on their environment and the impact of a changing environment on humans. Although natural and cultural resource management have much in common, their separate and specific needs must also be recognized. Integrating resource stewardship requires coordination between natural and cultural resource programs. It also requires coordination within these programs where beneficial to resource stewardship. In addition, traditional ecological knowledge (TEK) can inform integrated resource stewardship.

4.2 Policies

The NPS will take the following actions to integrate natural and cultural resource programs, functions, and funding mechanisms, where beneficial to resource stewardship:

- Create incentives for funding projects, including the Service-wide Comprehensive Call, that integrate perspectives and disciplines from natural and cultural resources;
- Require existing and future Resource Stewardship Strategies to consider natural and cultural resource integration concepts;
- Co-locate natural and cultural resource operations where possible and when beneficial to resource stewardship; and
- Utilize opportunities through Cooperative Ecosystem Studies Units (CESUs), Research Learning Centers (RLCs), and additional NPS programs and partners to support integrated natural and cultural resource projects.

The NPS will take the following actions to increase the understanding and use of TEK:

- Include indigenous peoples and perspectives in defining management objectives;
- Create mechanisms to facilitate collaboration, mutual trust, and understanding with federally recognized Tribes, and other indigenous peoples that build relationships beyond minimum obligatory consultation;
- Stimulate and apply research and scholarship that incorporates TEK and participation of indigenous peoples; and
- Incorporate TEK into resource planning efforts.

5. Managing Resources Emphasizing Resilience, Connectivity at Land/seascape Scales, and Life-cycle Stewardship

5.1 Objective

To achieve the stewardship goal and set priorities for conservation, restoration, and protection of resources, the NPS will emphasize resilience, connectivity at land/seascape scales, and life-cycle stewardship as guiding strategies for resource management. Application of these strategies in resource management will be informed by scientific and scholarly research and TEK.

5.2 Policies

The NPS adopts the following operational definitions and will provide additional guidance in RM-100:

- **Resilience** is the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions. Resilience strategies may include managing for the persistence of current conditions, accommodating change, or managing towards desired new conditions. Resilience strategies may vary and desired conditions must be clearly identified.
- **Connectivity at land/seascape scales** means managing natural resources such that processes that sustain biodiversity and viable ecosystems and populations, and that facilitate adaptation in the face of climate and other environmental change are maintained. See *Management Policies*, chapter 4. For cultural resources, connectivity refers to the understanding of the larger thematic and geographic context for these resources and supporting historical and cultural integrity. See *Management Policies*, chapter 5. Spatial scales to maintain connectivity may vary and desired conditions must be clearly identified. In addition, cultural connectivity goes beyond spatial considerations to include representation of cultures through time. Understanding the larger context for these resources requires partnerships with stakeholders to identify shared conservation values. See *Management Policies*, section 1.6.
- **Life-cycle stewardship** for natural resources means managing natural resources such that ecological processes or species' full life cycles are sustained over time. For cultural resource management, life-cycle stewardship means managing resources, historic infrastructure, and the built environment for long-term preservation.

The NPS will apply these strategies to resource management by taking the following actions:

- Expand research related to resilience, connectivity, and life-cycle stewardship to inform current and future management and restoration projects and programs;
- Ensure research findings and new discoveries are shared with resource managers and the scientific community;
- Expand land/seascape-scale resource stewardship and connectivity by using existing authorities to form partnerships for collaboratively managing resources outside parks. NPS efforts to advance collaborative conservation need to be expanded to deal with 21st century conservation challenges. (See Scaling Up: Collaborative Approaches to Large Landscape Conservation and future guidance);
- Participate and collaborate in interagency and non-governmental efforts to promote connectivity that in particular address issues such as climate change, endangered species, and habitat protection. These efforts may include large-land/seascape conservation efforts, regional networks of protected areas, and wilderness preservation;
- Actively develop and apply tools, capacity, and expertise available from NPS partnerships programs, including but not limited to, the National Natural Landmarks Program, National Historic Landmarks Program, Rivers, Trails, and Conservation Assistance Program, National Heritage Areas Program, Technical Preservation Services, and Land and Water Conservation Fund Program to advance resilience, connectivity at land/seascape scales, and life-cycle stewardship as resource stewardship strategies;
- Develop in collaboration with stakeholders shared management goals for ecological, historical, and/or cultural integrity where terrestrial and aquatic protected areas share borders;
- Use existing and form new partnerships with State, Tribal, regional, and local governments, other federal agencies, non-governmental partners, and the international community to support life-cycle stewardship and to engage in land/seascape conservation. (See Director's Order #21: Donations and Philanthropic Partnerships, Director's Order #20: Agreements, and Director's Order #56: International Activities);
- Support the needs of collaboratively managed areas, such as national rivers and trails that promote recreational activities and visitor enjoyment as key values to be recognized;
- Promote the use of parks for scientific and scholarly inquiry by streamlining the research permit process; and
- Establish partnerships with (1) educational and scientific institutions to identify, encourage, and promote scientific and scholarly research; and (2) federally recognized Tribes and other indigenous peoples to identify, encourage, and promote TEK, both of which will help us to better understand the complexities and uncertainties of the future.

6. Incorporating the Precautionary Principle and Adaptive Management into Resource Stewardship

6.1 Objective

To achieve the stewardship goal, the NPS will adopt the precautionary principle and adaptive management as guiding strategies for resource management subject to all existing authorities. These strategies will promote science-based decisions, help deal with uncertainty, and promote a

culture of learning. Management decisions based on the precautionary principle may often require adaptive management.

6.2 Policies

The NPS adopts the following operational definitions and will provide additional guidance in RM-100:

- The **Precautionary Principle** requires that, when an action, activity, or emerging condition raises plausible or probable threats of harm to park resources and/or human health, management should take anticipatory action even when there is uncertainty. When such uncertainty exists, NPS managers will take actions that err on the side of caution to protect resources in accordance with existing authorities, including NPS obligations to prevent resource impairment and the decision-making criteria described in section 7 of this Order. Any decision made using the precautionary principle should take into account: (1) the threat of harm to park resources or public health; (2) the level of scientific uncertainty; and (3) the preventive, precautionary action and its associated risks.
- **Adaptive Management** is a flexible decision-making strategy that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management is a strategy for more effective decision making. Measures of successful adaptive management are how well it (1) helps meet environmental, social, and economic goals; (2) increases scientific knowledge; and (3) reduces tensions among stakeholders. (See DOI Adaptive Management Applications Guide and future guidance).

The NPS will take the following actions to apply these strategies to resource management:

- Incorporate the precautionary principle and adaptive management into appropriate resource stewardship policies and decision-making processes, while considering how actions may adversely affect the qualities of wilderness character within the National Park System;
- If existing or future conditions are likely to result in unacceptable impacts to or impairment of park resources, managers should (1) consider action even if all cause-and-effect relationships are not fully established, and (2) modify the action as new information becomes available;
- Apply relevant guidance for adaptive management stated in the DOI Adaptive Management Technical Guide; and
- Incorporate references to the precautionary principle and adaptive management into other appropriate policy guidance, in due course, including Director's Order #12 and the NEPA Handbook; Director's Order #2: Park Planning; Director's Orders #28 and #28A, and the Cultural Resource Management Guideline; Director's Order #41: Wilderness Stewardship; Director's Order #47: Soundscape Preservation and Noise Management;

the Director's Order #77 series and Reference Manual 77–Natural Resource Management; and Director's Order #79: Integrity of Scientific and Scholarly Activities.

7. Basing Resource Stewardship Decisions on Science, Law, and Long-term Public Interest

7.1 Objective

To fulfill the stewardship goal, the NPS will use a decision-making framework that is explicitly based upon three criteria: (1) best available sound science and scholarship, (2) accurate fidelity to the law, and (3) long-term public interest. These criteria are not mutually exclusive and are often interdependent. The focus of each of these criteria will vary with the stage in the decision-making process and the particular decision being made. These criteria will be applied to management decisions using professional judgment[3] and incorporating the resource management concepts in sections 4-6 of this Order.

7.2 Policies

The NPS adopts the following operational definitions and will provide additional guidance in RM-100:

- **Best available sound science and scholarship** is up-to-date and rigorous in method, mindful of limitations, peer-reviewed when appropriate and required, and delivered at the appropriate time in the decision-making process in ways that allow NPS managers to apply its findings. Sound science and scholarship is a body of knowledge that draws upon a broad and often interdisciplinary community of practitioners, both within and beyond the NPS.
- **Accurate fidelity to the law** requires that NPS decision making adheres with precision to the law, and consistently and transparently follows regulations and public policy.
- **Long-term public interest** emerges from the NPS mission, an evolving understanding of diverse public values and perspectives, meaningful civic engagement including multiple perspectives and generations, and the professional judgment of NPS professionals.

To ensure the three criteria are applied in the resource decision-making process, the NPS will:

- Conduct and/or facilitate scientific and scholarly inquiry that is directly applicable to current or expected resource management challenges;
- Incorporate the best available sound science and scholarship into resource management;
- Require NPS leadership to foster a culture that values scientific and scholarly expertise, and supports scientists and scholars to conduct, publish, and present research of the highest quality;
- Ensure the proper role and application of a wide variety of scientific and scholarly disciplines and TEK in resource management;

[3] See *Management Policies,* Glossary, "Professional judgment."

- Incorporate accurate fidelity to the law into management decisions by ensuring employees are knowledgeable about and follow applicable laws, regulations, and policies and have access to necessary legal expertise;
- Ensure that legal and ethical behavior is a critical component of resource stewardship; and
- Understand long-term public interest by considering both historical and current public values and perspectives with respect to parks, as well as the NPS mandate to provide enjoyment for future generations.

The NPS will take the following actions to ensure that managers are able to apply the three criteria:

- Support resource managers, scientists and scholars, and other appropriate staff to (1) engage diverse communities in park resource issues, values, and science; and (2) communicate scientific and scholarly ideas and findings to internal and external audiences in order to continuously improve professional judgment;
- Develop and maintain open and inclusive public engagement strategies to identify and understand long-term public interest and foster "co-stewardship" of resources through sustained and committed collaborations with governmental partners, federally recognized Tribes, other indigenous peoples, the public, and other stakeholders (see Director's Order #75A: Civic Engagement and Public Involvement); and
- Strategically incorporate emerging technologies, when applicable and feasible, into park resource management to conduct sound science and scholarship and engage the public.

8. Updating and Sustaining the Workforce

8.1 Objective

To further the stewardship goal and integrate it into the organizational culture, the NPS will update, strengthen, and maintain its workforce to diversify, modernize, and support new generations of scientists, scholars, resource managers, and superintendents. Enhancing and diversifying the workforce allows our national parks and programs to reflect the diversity of America.

8.2 Policies

The NPS will take the following actions to update and sustain the workforce:

- Create, through strategic partnerships with educational institutions and other organizations, a new generation of scientists, scholars, and resource managers who reflect the diverse backgrounds, demographics, and values of the Nation. These partnerships will help the NPS obtain the scientific and scholarly information needed to better understand park resources and visitors, work effectively across cultures, and address the complexities and uncertainties of the dynamic and changing environment;

- Establish and enhance formal relationships, agreements, and internships with key diverse educational institutions and organizations to identify and develop candidates for potential positions and careers within the NPS;
- Support new generations of scientists, scholars, resource managers, superintendents, and all other employees by ensuring a safe and respectful work environment that is free from discrimination, harassment, and retaliation;
- Incorporate the stewardship goal into new and revised position descriptions and performance plans for all appropriate positions throughout the NPS;
- Work with regions, parks, and programs to create new pathways to NPS careers, and increase diversity through improved use of direct-hire authorities;
- Support and encourage NPS scientists and scholars to publish research in scientific and/or scholarly literature by adding this responsibility to appropriate position descriptions of NPS scientists; and
- Support participation of NPS scientists and scholars at professionally recognized meetings, symposia, and conferences to (1) disseminate NPS scientific and scholarly findings; (2) learn from other scientists and scholars; (3) maintain professional competence and credibility; and (4) contribute to best available sound science and scholarship, and best practices in stewardship decision making.

9. Ensuring Scientific Literacy for Superintendents

9.1 Objective

To further the stewardship goal in management decisions, the NPS will require superintendents and those who aspire to leadership positions to possess scientific literacy appropriate to their positions and resource management decision-making responsibilities. This includes the full range of scientific disciplines needed to steward resources.

9.2 Policies

The NPS adopts the following definition and criteria for achieving scientific literacy and will provide additional guidance in RM-100:

- **Scientific literacy** is the knowledge and understanding of scientific concepts and processes, an understanding of the strengths and limitations of scientific findings, and the appropriate application of scientific research to management and policy issues.
- Scientific literacy requires superintendents to be able to:
  - identify scientific issues underlying decisions within the framework of best available sound science and scholarship, accurate fidelity to the law, and long-term public interest;
  - understand the scientific process and associated strengths and limitations, data integrity and management, and peer review; and
  - evaluate the quality of scientific information and evidence available on the basis of its source and the methods used to generate it.

The NPS will take the following actions to ensure that superintendents and those who aspire to leadership positions are scientifically literate:

- Adapt existing and appropriate scientific literacy standards;
- Modify position descriptions to include scientific literacy requirements;
- Include information about relevant scientific issues related to resource stewardship in supervisory training and other training courses for superintendents; and
- Identify the specific ways superintendents can demonstrate, achieve, and maintain scientific literacy standards. These may include formal higher education degrees, completion of relevant advanced graduate course work, or successful completion of training courses.

10. Investing in Service-wide Resource Stewardship Training

10.1 Objective

To further the stewardship goal, the NPS will invest in Service-wide resource stewardship training to educate and support employees to use the concepts and decision-making framework presented in this Order. This resource stewardship training will be incorporated into existing training opportunities.

10.2 Policies

The NPS will ensure all employees develop the knowledge, skills, and abilities appropriate to their positions and needed to support successful resource stewardship, by taking the following actions:

- Establish a training and development workgroup to develop a strategic plan for resource stewardship training that builds upon existing training programs and opportunities (e.g., Fundamentals, Natural and Cultural Resource Career Academies, Emerging Leaders, New Supervisor Training, New Superintendents Academy);
- Implement a training program based upon the strategic plan that makes use of both in-person and distance learning;
- Develop training about TEK for superintendents, resource staff, and others, including training by indigenous peoples;
- Develop detailed guidance and training for the application of the precautionary principle and adaptive management to be incorporated into appropriate documents;
- Develop detailed guidance and implement training on the resource stewardship criteria, with special focus on training superintendents; and
- Require superintendents and other employees in leadership positions to participate in advanced training courses on an ongoing basis to ensure implementation of the most up-to-date approaches to resource stewardship.

11. Integrating the Stewardship Goal within Appropriate Management Documents

11.1 Objective

To ensure the organization consistently works toward the stewardship goal, the NPS will integrate the concepts, policies, and actions in this Order into all appropriate policies, plans, studies, and inventories; funding priorities and allocations; and field operations and programs.

11.2 Updates to Management Structures

As appropriate and in due course, management documents will be developed, revised, or updated to incorporate the stewardship goal and other requirements of this Order. These include:

- Service-wide Policies—Director's Orders and Policy Memoranda
- Foundation Documents
- Management, Strategic, and Implementation Plans—Resource Stewardship Strategies, Wilderness Stewardship Plans, and General Management Plans
- Resource Inventories, Studies, and Surveys—cultural landscape inventories, natural resource inventories, and visitor use studies and surveys (for example, the Comprehensive Survey of the American Public)
- Program Funding—annual budget plans and Project Management Information System (PMIS) project funding requests
- Agreements—cooperative agreements (for example, those establishing relationships with cooperative study units per 54 USC 100703, or to further park research by educational institutions per 54 USC 101702(b)), interagency agreements, and general agreements (for example, cooperating association agreements)
- Operational Plans—annual performance plans (work plans) and standard operating procedures

A more comprehensive list of plans, studies, surveys, and other appropriate documents will be included in RM-100.

12. Roles and Responsibilities

Director and Deputy Director(s)

The Director and deputy director(s) will:

- provide Service-wide leadership on new and revised policies and actions to lead the NPS into the 21st century of managing and preserving resources under NPS care;
- integrate the concepts, policies, and actions in this Order into all appropriate policies, plans, studies, and inventories; funding priorities and allocations; and field operations and programs;
- encourage parks, programs, and regions to collaborate with national, Tribal, State, regional, and local partners, and the public when setting priorities for conservation, restoration, and integration of natural and cultural resources in order to promote land/seascape-scale connectivity and management;

- work with DOI, other agencies, non-governmental entities, the international community, and other partners to communicate and promote the goals and actions of this Order;
- promote and ensure a safe and respectful work environment that is free from discrimination, harassment, and retaliation Service-wide;
- prepare annual agency funding requests in support of the integration of natural and cultural resource management where beneficial to resource stewardship, land/seascape-scale conservation, and other priorities as outlined in this Order; and
- promote a culture of science- and scholarly-based research and expertise within NPS decision making.

Associate and Assistant Directors (ADs)

All ADs will:

- communicate the importance of integrating the stewardship goal into all work performed by the programs under their responsibility; and
- ensure that all appropriate staff complete the necessary resource stewardship training as outlined in sections 9 and 10.

ADs, Natural Resource Stewardship and Science (AD-NRSS) and Cultural Resources, Partnerships, and Science (AD-CRPS)

The AD-NRSS and AD-CRPS will:

- together with the AD, Workforce and Inclusion, issue, review, and revise as appropriate RM-100, which will provide comprehensive procedures for implementation of this Order;
- develop standards and procedures necessary to implement the actions in sections 4, 5, 6 and 7 in collaboration with other relevant directorates;
- develop initiatives that support integration of natural and cultural resource management and ensure funding calls use this as a ranking criterion during proposal review and funding allocation;
- ensure, in collaboration with other relevant directorates, regional directors, and superintendents, that indigenous peoples have opportunities to be involved in resource stewardship planning and actions;
- finalize guidelines for the establishment of interdisciplinary teams developing Resource Stewardship Strategies;
- create guidelines and opportunities for employees to remain current in their fields by conducting, publishing, and presenting scientific and scholarly work; and
- develop initiatives to support research on resilience, connectivity at the land/seascape scales, and life-cycle stewardship.

AD, Workforce and Inclusion (AD-WI)

The AD-WI, in collaboration with other relevant directorates, will:

- develop standards and procedures necessary to implement the actions in sections 8, 9 and 10;
- review and develop additional requirements for new and existing position descriptions and performance plans in furtherance of this Order;

- develop the criteria, standards, measures, and training associated with scientific literacy requirements for superintendents and other employees;
- ensure staff within Servicing Human Resources Offices, Human Resources Operation Centers, and other staff involved in position description classifications, recruitment, and hiring are familiar with the stewardship goal and priorities outlined in this Order; and
- establish a training and development workgroup to develop a strategic plan for resource stewardship training that includes TEK, the precautionary principle, adaptive management, and other concepts contained in this Order.

The AD-WI, and the AD, Interpretation and Education (AD-IE) will establish relationships with key diverse educational institutions and organizations in support of the actions in section 8.

Regional Directors (RDs)

Regional directors will:

- communicate the importance of integrating the stewardship goal into all work performed by the parks and regional programs under their responsibility, as well as including it in superintendents' performance standards;
- ensure that all appropriate staff complete the necessary resource stewardship training as outlined in sections 9 and 10;
- develop regional and park initiatives that support the integration of natural and cultural resource management;
- require regional offices and parks to consult with and involve indigenous peoples in resource stewardship planning, training, and actions;
- enhance NPS involvement in land/seascape-scale management through collaborative efforts with international, national, Tribal, State, regional, and local partners, and the public;
- review and develop additional requirements to integrate the stewardship goal into new and existing position descriptions and performance plans for regional and park employees;
- direct regional and park staff to adopt the precautionary principle and adaptive management as guiding strategies for resource management at all levels within the region;
- ensure that resource stewardship training needs within their regions are met, and that parks are adequately supported to meet their resource stewardship responsibilities; and
- expand capacities for scientific- and scholarly-research by hiring and sustaining a diverse cohort of professionals in parks and regional programs, and support the technical and training needs that allow these professionals to remain current in their fields and integrated within broader communities of professional practice.

Superintendents

Superintendents will:

- integrate the stewardship goal into day-to-day park operations, short- and long-range planning activities, and overall park management;

- complete educational coursework or training programs to further scientific literacy competencies;
- build relationships and consult with indigenous peoples to expand the understanding and use of TEK in park planning and training, and in the decision-making process;
- develop and revise Resource Stewardship Strategies based on the integration of natural and cultural resources;
- establish and sustain integrated, interdisciplinary resource management and assessment programs based on sound science and scholarship that are designed, conducted, and/or applied by professionals;
- incorporate the precautionary principle and adaptive management as guiding strategies for interdisciplinary resource management actions;
- collaborate with international, national, Tribal, State, regional, and local partners, and the public to support land/seascape-scale management of resources and solve complex resource stewardship challenges;
- apply the decision making criteria described in section 7 to all resource management actions; and
- build and sustain relationships at all levels to increase public involvement and participation while developing resource stewardship policies and plans, and undertaking management activities (see Director's Order #75A).

Program Managers

Program managers will:

- integrate the stewardship goal into short- and long-range planning activities, and management decisions across multiple disciplines;
- coordinate, develop, and maintain strategic plans for scientific and scholarly research and application in resource management decisions, particularly region-wide initiatives that respond to contemporary conditions and stressors at appropriate scales and intervals;
- establish and sustain integrated, interdisciplinary resource management programs and assessments based on sound science and scholarship that are designed, conducted, and/or applied by professionals;
- incorporate the precautionary principle and adaptive management as guiding strategies for interdisciplinary resource management actions;
- build relationships and consult with indigenous peoples to further the understanding and use of TEK in the planning and decision-making process;
- provide program staff the necessary training, skills, and resources to be effective resource stewards and to carry out the responsibilities of this Order;
- assign responsibility to appropriate staff to ensure implementation of this Order by informing them of the key principles and how to apply them in their duties and activities;
- collaborate with international, national, Tribal, State, regional, and local partners, and the public to support land/seascape-scale management of resources and solve complex resource stewardship challenges; and
- build and sustain relationships at all levels to increase public involvement and participation while developing resource stewardship policies, and undertaking management activities (see Director's Order #75A).

Resource Managers and Park Resource Specialists

Resource managers and park resource specialists will:

- work with superintendents, and other park and regional staff to integrate resource stewardship practices and strategies into park planning, management, compliance, operations, and monitoring activities;
- recognize opportunities to address resource concerns with understanding and consideration of natural and cultural resource perspectives and land/seascape-scale needs;
- seek and support programs, projects, and partnerships with communities, States, non-governmental organizations, other agencies, Tribes, and the public to enhance the NPS's ability to effect change on a larger scale;
- coordinate with superintendents and other park and regional managers and consult with broader communities of practice to develop and revise Resource Stewardship Strategies and practices based on the integration of natural and cultural resources and the best available sound science and scholarship, accurate fidelity to law, and long-term public interest; and
- participate in local resource management coordination with government agencies, Tribes, and other local and regional partners.

Community Assistance Program Coordinators

Community assistance program coordinators will:

- integrate the stewardship goal into short- and long-term planning activities, and management decisions across multiple disciplines;
- build and sustain relationships with partners at all levels to increase public involvement and participation while developing resource stewardship policies, and undertaking management activities;
- align programs, projects, and park activities within communities in support of One NPS to further the stewardship goal;
- conduct annual reviews of conservation and restoration projects that incorporate a large land/seascape or area-wide approach outside park boundaries with appropriate NPS programs to create efficiencies, leverage resources, align efforts, and engage communities; and
- collaborate and align financial and technical assistance resources with other NPS programs where there are shared stewardship objectives and opportunities.

Service-wide and Regional Learning and Development Coordinators/Managers

Learning and Development coordinators and managers will:

- develop and maintain an integrated strategic plan for resource stewardship and science and scholarship training;
- develop training in resource stewardship science and scholarship, law, regulation, and policy, and the public interest at all levels of the organization, and in collaboration with resource specialists and larger communities of professional practice;

- coordinate and communicate with Learning and Development managers in other divisions to identify training needs and ensure that all employees are equipped to engage in decision making based in science and scholarship, law and policy, and the public interest; and
- help coordinate participation in professional associations and scientific and scholarly meetings, symposia, and conferences.

NPS Regional and National Resource Advisory Councils

Resource advisory councils will:

- advise the Director, deputy director(s), ADs and RDs about all resource stewardship and decision-making matters in parks and programs;
- encourage participation of external scientists, scholars, and other experts in research and professional activities to inform resource stewardship, and involvement of professionals in larger communities of practice through regular consultations and opportunities with professional associations; and
- assist in the development and implementation of programs and projects that expand and improve the accountability, consistency, and continuity of resource stewardship activities and practices based on sound science and scholarship, law and policy, and the public interest.

NPS Employees Participating in Research Learning Centers (RLCs) and Cooperative Ecosystem Studies Units (CESUs)

NPS employees in RLCs and in CESUs will:

- support natural and cultural resource integration projects;
- provide opportunities to train and hire the next generation of scientists, scholars, and resource managers; and
- provide opportunities for NPS employees to develop and maintain the professional knowledge and skills necessary for resource stewardship through training, conferences, and collaborative projects.

All employees have the responsibility to help manage resources and implement programs that further the stewardship goal.

13. Additional Definitions

Continuous Change is the concept that parks are not static entities, but instead are undergoing long-term change. This change is not merely a constant or seasonal change, but also the dynamic nature of overlapping and accelerating changes facing park systems. Extreme shifts in conditions (such as unexpected, severe wet seasons) within long-term trends of change (such as decadal droughts) that are increasingly exceeding historic experiences, exemplify the complex nature of change. The conditions of park resources will continue to move beyond the bounds of historical range of variation due to continually increasing temperatures and other changes including those associated with ongoing and projected climate change. In addition, ongoing

social, cultural, and demographic shifts will impact park systems. Novel and unpredicted responses to these changes present new challenges for resource stewardship.

Core of National and International Networks of Protected Lands, Waters, and Resources is the concept that NPS-administered lands, waters, and resources are ecologically and/or culturally essential elements of national and international networks of protected areas, when viewed holistically across boundaries and managed through exemplary resource management practices.

Ecological Integrity is the ability of ecosystems to support and maintain a community of organisms that has a species composition, diversity, and functional organization comparable to those natural habitats or projected new conditions within the region. These characteristics may occur within a historical range of variation and with time may progress towards novel conditions associated with a changing climate. While ecological integrity necessarily builds on our understanding of the past, maintaining integrity will also be informed by scientific and scholarly research, TEK, and an evolving understanding of the resources and values that are fundamental to the park's purpose.

Historical and Cultural Integrity is the ability of an object, property, site, or cultural landscape to convey its full historical, cultural, and scientific significance. Historical and cultural integrity incorporates a variety of perspectives, reflects current theories and best practices of all relevant disciplines and promotes dynamic, adaptive, and data-driven resource management.

Program Participants are those individuals who use the Service's programs that extend the benefits of resource conservation and outdoor recreation beyond park visits. These are mainly non-park based experiential programs that often work with parks, but are available in communities and other areas outside park boundaries. See *National Park Service Programs* (2013).

Traditional Ecological Knowledge refers to the on-going accumulation of knowledge, practice and belief about relationships between living beings in a specific ecosystem that is acquired by indigenous peoples over hundreds or thousands of years through direct contact with the environment, handed down through generations by cultural transmission, and used for life-sustaining ways. [Rinkevich et al. Synopsis of Traditional Ecological Knowledge, 2016]

Visitors are individuals who (1) physically visit parks for recreational, educational, or scientific purposes, or (2) otherwise use a park's interpretive, scientific, and educational services, regardless of where or how such use occurs (e.g., via Internet access, library, etc.). See *Management Policies*, p. 160.

-------End of Director's Order-------