

**Supplemental Document 1:** Summary of legislation, National Park Service policy and guidance relevant to development and implementation of natural resources monitoring in National Parks.

<b>PUBLIC LAWS</b>	
<p><b>National Park Service Organic Act</b> (16 USC 1 et seq. [1988], Aug. 25, 1916).</p>	<p>The 1916 National Park Service Organic Act is the core of park service authority and the definitive statement of the purposes of the parks and of the National Park Service mission. The act establishes the purpose of national parks: “.... To conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”</p>
<p><b>General Authorities Act of 1970</b> (16 USC 1a-1—1a-8 (1988), 84 Stat. 825, Pub. L. 91-383</p>	<p>The General Authorities Act amends the Organic Act to unite individual parks into the ‘National Park System’. The act states that areas of the National Park System, “though distinct in character, are united through their inter-related purposes and resources into one national park system as cumulative expressions of a single national heritage; that individually and collectively, these areas derive increased national dignity and recognition of their superb environmental quality through their inclusion jointly with each other in one national park system preserved and managed for the benefit and inspiration of all the people of the United States....”</p>
<p><b>Redwood National Park Act</b> (16 USC 79a-79q (1988), 82 Stat. 931, Pub. L. 90-545</p>	<p>This act includes both park-specific and system-wide provisions. This act reasserts system-wide protection standards for the National Park System. This act qualifies the provision that park protection and management “shall not be exercised in derogation of the values and purposes for which these areas have been established” by adding “except as may have been or shall be directed and specifically provided for by Congress.” Thus, specific provisions in a park’s enabling legislation allow park managers to permit activities such as hunting and grazing.</p>
<p><b>National Environmental Policy Act of 1969</b> (42 USC 4321-4370)</p>	<p>The purposes of NEPA include encouraging ‘harmony between [humans] and their environment and promote efforts which will prevent or eliminate damage to the environment... and stimulate the health and welfare of [humanity].’ NEPA requires a systematic analysis of major federal actions that includes a consideration of all reasonable alternatives as well as an analysis of short-term and long-term, irretrievable, irreversible, and unavoidable impacts. Within NEPA the environment includes natural, historical, cultural, and human dimensions. Within the NPS emphasis is on minimizing negative impacts and preventing “impairment” of park resources as described and interpreted in the NPS Organic Act. The results of evaluations conducted under NEPA are presented to the public, federal agencies, and public officials in document format (e.g., EAs and EISs) for consideration prior to taking official action or making official decisions.</p>

<p><b>Clean Water Act</b> <b>(33 USC 1251-1376)</b></p>	<p>The Clean Water Act, passed in 1972 as amendments to the Federal Water Pollution Control Act, and significantly amended in 1977 and 1987, was designed to restore and maintain the integrity of the nation’s water. It furthers the objectives of restoring and maintaining the chemical, physical and biological integrity of the nation’s waters and of eliminating the discharge of pollutants into navigable waters by 1985. Establishes effluent limitation for new and existing industrial discharge into U.S. waters. Authorizes states to substitute their own water quality management plans developed under S208 of the act for federal controls. Provides an enforcement procedure for water pollution abatement. Requires conformance to permit required under S404 for actions that may result in discharge of dredged or fill material into a tributary to, wetland, or associated water source for a navigable river.</p>
<p><b>Clean Air Act</b> <b>(42 USC 7401-7671q, as amended in 1990)</b></p>	<p>Establishes a nationwide program for the prevention and control of air pollution and establishes National Ambient Air Quality Standards. Under the Prevention of Significant Deterioration provisions, the act requires federal officials responsible for the management of Class I Areas (national parks and wilderness areas) to protect the air quality related values of each area and to consult with permitting authorities regarding possible adverse impacts from new or modified emitting facilities. The act establishes specific programs that provide special protection for air resources and air quality related values associated with NPS units. The EPA has been charged with implementing this act.</p>
<p><b>Endangered Species Act of 1973, as amended (ESA)</b> <b>(16 USC 1531-1544)</b></p>	<p>The purposes of the ESA include providing “a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved. According to the ESA ‘all federal departments and agencies shall seek to conserve endangered species and threatened species ‘ and ‘[e]ach federal agency shall...insure that any action authorized, funded, or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species or threatened species.’ The USFWS (non-marine species) and the National Marine Fisheries Service (NMFS) (marine species, including anadromous fish and marine mammals) administers the ESA. The effects of any agency action that may affect endangered, threatened, or proposed species must be evaluated in consultation with either the USFWS or NMFS, as appropriate.</p>
<p><b>Environmental Quality Improvement Act of 1970 (42 U.S.C. 56 § 4371)</b></p>	<p>Directs all Federal agencies, whose activities may affect the environment, to implement policies established under existing law to protect the environment.</p>
<p><b>Coastal Zone Management Act of 1972 (16 U.S.C. 33 § 1452)</b></p>	<p>“Congress finds and declares that it is the national policy - to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations.”</p>

<p><b>Marine Protection, Research, and Sanctuaries Act of 1972 (16 U.S.C. 32 § 1431)</b></p>	<p>Recognizes that the United States has historically protected “Special areas of its public domain, but (that) these efforts have been directed almost exclusively to land areas above the high-water mark.” For this reason congress elected to recognize and protect “Certain areas of the marine environment possess(ing) conservation, recreational, ecological, historical, scientific, educational, cultural, archeological, or esthetic qualities which give them special national, and in some cases international, significance.” Specifically this law intends to “Improve the conservation, understanding, management, and wise and sustainable use of marine resources; (to) enhance public awareness, understanding, and appreciation of the marine environment; and (to) maintain for future generations the habitat, and ecological services, of the natural assemblage of living resources that inhabit these areas.</p>
<p><b>National Historic Preservation Act of 1966, as amended (16 USC 470 et seq.)</b></p>	<p>Congressional policy set forth in NHPA includes preserving ‘the historical and cultural foundations of the Nation’ and preserving irreplaceable examples important to our national heritage to maintain ‘cultural, educational, aesthetic, inspirational, economic, and energy benefits.’ NHPA also established the National Register of Historic Places composed of ‘districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture.’ NHPA requires federal agencies take into account the effects of their actions on properties eligible for or included in the National Register of Historic Places and to coordinate such actions with the State Historic Preservation Offices (SHPO).</p>
<p><b>Wilderness Act of 1964 (16 USC 1131 et seq.)</b></p>	<p>Establishes the National Wilderness Preservation System. In this act, wilderness is defined by its lack of noticeable human modification or presence; it is a place where the landscape is affected primarily by the forces of nature and where humans are visitors who do not remain. Wilderness Areas are designated by Congress and are composed of existing federal lands that have retained a wilderness character and meet the criteria found in the act. Federal officials are required to manage Wilderness Areas in a manner conducive to retention of their wilderness character and must consider the effect upon wilderness attributes from management activities on adjacent lands.</p>
<p><b>Forest and Rangeland Renewable Resources Planning Act of 1974 (16 U.S.C. 36 § 1642)</b></p>	<p>Mandates that the Secretary of Agriculture inventory and monitor renewable natural resources in National Forests, and has been cited as congressional authorization for the inventory and monitoring of natural resources on all federal lands. While this is not specifically directed in the act it is perhaps indicative of a national will to account for and manage the nation’s natural heritage in manner that sustains these resources in perpetuity.</p>

<p><b>Surface Mining Control and Reclamation Act</b></p>	<p>The Surface Mining Control and Reclamation Act was enacted in 1977. It establishes a nationwide program to protect the environment from adverse effects of surface coal mining operations, establishes minimum national standards for regulating surface coal mining, assists states in developing and implementing regulatory programs, and promotes reclamation of previously mined areas with inadequate reclamation. Under the Act, the Secretary of the Interior is directed to regulate the conduct of surface coal mining throughout the United States for both federally and non-federally owned rights. The Act establishes the Abandoned Mine Reclamation Fund, which is for the reclamation of land and water affected by coal mining. Eligibility for reclamation under this program requires that the land or water had been mined for coal, or affected by coal mining, and had been inadequately reclaimed prior to the enactment of this act in 1977. Both public and private lands are eligible for funding. Sections 522(e)(1) and 533(e)(3) of the act specifically prohibit surface mining within the National Park Service, National Wildlife Refuge System, National System of Trails, National Wilderness Preservation System, or Wild and Scenic Rivers System. The act also prohibits surface mining that adversely impacts any publicly-owned park or place included in the National Register of Historic Sites. These prohibitions are subject to valid existing rights at the time of the Act, the exact definition of which remains the subject of administrative and legal action. How valid existing rights are ultimately defined will affect the ability of mineral owners to mine in the Recreation Area.</p>
<p><b>Federal Advisory Committee Act</b></p>	<p>Creates a formal process for federal agencies to seek advice and assistance from citizens. Any council, panel, conference, task force or similar group used by federal officials to obtain consensus advice or recommendations on issues or policies fall under the purview of FACA.</p>
<p><b>National Parks Omnibus Management Act, 1998 (P.L. 105-391)</b></p>	<p>Requires Secretary of Interior to continually improve NPS' ability to provide state-of-the-art management, protection, and interpretation of and research on NPS resources. Secretary shall assure the full and proper utilization of the results of scientific study for park management decisions. In each case where an NPS action may cause a significant adverse effect on a park resource, the administrative record shall reflect the manner in which unit resource studies have been considered. The trend in NPS resource conditions shall be a significant factor in superintendent's annual performance evaluations. Section 5939 states that the purpose of this legislation is to:</p> <ol style="list-style-type: none"> <li>(1) More effectively achieve the mission of the National Park Service;</li> <li>(2) Enhance management and protection of national park resources by providing clear authority and direction for the conduct of scientific study in the National Park System and to use the information gathered for management purposes;</li> <li>(3) Ensure appropriate documentation of resource conditions in the National Park System;</li> <li>(4) Encourage others to use the National Park System for study to the benefit of park management as well as broader scientific value, and</li> <li>(5) Encourage the publication and dissemination of information derived from studies in the National Park System.</li> </ol>

<b>Government Performance and Results Act (GPRA)</b>	Requires the NPS to set goals (strategic and annual performance plans) and report results (annual performance reports). The NPS Strategic Plan contains four GPRA goal categories: park resources, park visitors, external partnership programs, and organizational effectiveness. In 1997, the NPS published its first GPRA-style strategic plan, focused on measurable outcomes or quantifiable results.
<b>EXECUTIVE ORDERS</b>	
<b>Off-Road Vehicle Use (Executive Orders 11644 and 11989)</b>	Executive Order 11644, enacted February 8, 1972 and amended by Executive Order 11989 on May 24, 1977, regulates off-road vehicle use. If the enabling legislation allows the use of off-road vehicles, NPS is required to designate specific areas for off-road vehicle use. These areas must be “located to minimize damage to soil, watershed, vegetation, or other resources” (Section (3)(a)(1)). If it is determined that such use is adverse to resources, the NPS is to immediately close such areas or trails until the impacts have been corrected.
<b>Floodplain Management (Executive Order 11988)</b>	Executive Order 11988 was enacted May 24, 1977. It requires all federal agencies to “reduce the risk of flood loss,... minimize the impacts of floods on human safety, health and welfare, and ... restore and preserve the natural and beneficial values served by flood plains.” To the extent possible, park facilities, such as campgrounds and rest areas, should be located outside floodplain areas. Executive Order 11988 is implemented in the National Park Service through the <i>Floodplain Management Guidelines</i> (National Park Service, 1993b). It is the policy of the National Park Service to 1) restore and preserve natural floodplain values; 2) to the extent possible, avoid environmental impacts to the floodplain by discouraging floodplain development; 3) minimize the risks to life and property when structures and facilities must be located on a floodplain; and, 4) encourage nonstructural over structural methods of flood hazard mitigation.
<b>Protection of Wetlands (Executive Order 11990)</b>	Executive Order 11990 was enacted May 24, 1977. It requires all federal agencies to “minimize the destruction, loss, or degradation of wetlands, and preserve and enhance the natural and beneficial values of wetlands”. Unless no practical alternative exists, federal agencies must avoid any activities that have the potential to adversely affect wetland ecosystem integrity. NPS guidance pertaining to this Executive Order is stated in <i>Floodplain and Wetland Protection Guidelines</i> (National Park Service, 1980).
<b>Executive Order 13112 on Invasive Species</b>	This executive order was signed into law on February 3, 1999, to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. Among other things, this Executive Order It established the National Invasive Species Council and required the preparation of a National Invasive Species Management Plan to recommend specific, performance-oriented goals and objectives and specific measures of success for Federal agency efforts concerning invasive species.

<b>NPS POLICIES AND GUIDANCE</b>	
<b>NPS Management Policies – 2001 (NPS Directives System)</b>	This is the basic NPS servicewide policy document. It is the highest of three levels of guidance documents in the NPS Directives System. The Directives System is designed to provide NPS management and staff with clear and continuously updated information on NPS policy and required and/or recommended actions, as well as any other information that will help them manage parks and programs effectively.
<b>NPS Directors Orders</b>	Second level of NPS Directives System. Directors Orders serve a vehicle to clarify or supplement <i>Management Policies</i> to meet the needs of NPS managers. Relevant Directors Orders: DO-2.1 Resource Management Planning DO-12 Environmental Impact Assessment DO-14 Resource Damage Assessment & Restoration DO-24 Museum Collections Management DO-41 Wilderness Preservation & Management DO-47 Sound Preservation & Noise Management DO-77 Natural Resource Protection
<b>NPS Handbooks and Reference Manuals</b>	This is the third tier in the NPS Directives System. These documents are issued by Associate Directors. These documents provide NPS field employees with a compilation of legal references, operating policies, standards, procedures, general information, recommendations and examples to assist them in carrying out <i>Management Policies</i> and Director's Orders. Level 3 documents may not impose any new servicewide requirements, unless the Director has specifically authorized them to do so. Relevant Handbooks and Reference Manuals: NPS-75 Natural Resources Inventory & Monitoring NPS-77 Natural Resources Management Guidelines NPS Guide to Fed. Advisory Committee Act Website: Monitoring Natural Resources in our National Parks, <a href="http://www.nature.nps.gov/im/monitor">http://www.nature.nps.gov/im/monitor</a>