
2.0 Biological Resource Management at Hanford



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This chapter provides an overview of the primary legal requirements that affect biological resource management decisions at Hanford, as well as the concept and policy implications of ecosystem management. Within the context of Executive Branch, Department, and Richland Operations Office ecosystem management policy directives, it also defines DOE-RL's specific biological resource management policies and goals at Hanford. The policies have been developed based on the goals, principles, and tools of ecosystem management and legal requirements. Further discussion of ecosystem management and the laws, regulations, Executive Orders, and policies that potentially affect how biological resources are managed at Hanford is included in Appendices A and B, respectively.

2.1 Legal Requirements

Several substantive and procedural legal requirements have a major effect in determining how biological resources should be managed at Hanford. The following four federal Acts provide a strong impetus for a comprehensive approach to biological resource management at Hanford:

- **National Environmental Policy Act (NEPA)** states it is the policy of the federal government to create and maintain conditions under which people and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans. The Act says the federal government is responsible for using all practicable means to: (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations, (2) attain the widest range of beneficial uses of the environment without degradation, and (3) preserve important natural aspects of the nation's heritage.
- **Endangered Species Act (ESA)** provides for designation and protection of wildlife, fish, and plant species in danger of becoming extinct because of natural or human-made factors and for the conservation of the ecosystems on which these species depend. The Act makes it illegal to kill, collect, remove, harass, import, export, or conduct interstate or international commerce in an endangered or threatened species without a permit from the Secretary of the Interior. The Act requires all federal agencies to use their authorities to carry out programs that conserve endangered or threatened species. Section 7 of the ESA requires that federal agencies consult with the National Marine Fisheries Service on activities they authorize, fund, or carry out to ensure they are not likely to jeopardize the continued existence of listed species or destroy or adversely modify their critical habitat.
- **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment as well as the remediation of inactive hazardous waste disposal sites.
- **Migratory Bird Treaty Act (MBTA)** prohibits hunting, taking, killing, capturing, or possessing migratory birds (or any part, nest, or egg of such a bird) except as authorized by regulation or in accordance with a permit. The U.S. Fish and Wildlife Service designates those species that qualify as migratory birds under the Act and administers the permit system.
- **Presidential Proclamation 7319 of June 19, 2000**, established the Hanford Reach National Monument. The proclamation specifies several environmental protection-related management

requirements. Section 2 of the American Antiquities Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431), authorized the president, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the government of the United States to be national monuments, and to reserve as part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected.

2.2 Ecosystem Management

Ecosystem management (or an ecosystem approach) can be defined as a process that "... integrates scientific knowledge of ecological relationships within a complex sociopolitical and values framework toward the general goal of protecting native ecosystem integrity over the long term" (Grumbine 1994).

It is the Department's policy to strengthen the stewardship of DOE lands. To facilitate accomplishing this policy initiative, the Department has embraced the ecosystem management approach. The Land and Facility Use Policy issued by the Secretary states:

It is Department of Energy policy to manage all of its land and facilities as valuable national resources. Our stewardship will be based on the *principles of ecosystem management* (emphasis added) and sustainable development. We will integrate mission, economic, ecological, social and cultural factors in a comprehensive plan for each site that will guide land and facility use decisions. Each comprehensive plan will consider the site's larger regional context and be developed with stakeholder participation. This policy will result in land and facility uses which support the Department's critical missions, stimulate the economy, and protect the environment.¹

The DOE also has indicated its support for a more holistic approach to natural resource management by becoming a signatory to a Memorandum of Understanding, along with 13 other federal

agencies, that fosters an ecosystem [management] approach.² The policy portion of the Memorandum of Understanding states:

The federal government should provide leadership in and cooperate with activities that foster the ecosystem approach to natural resource management, protection, and assistance. Federal agencies should ensure that they utilize their authorities in a way that facilitates, and does not pose barriers to, the ecosystem approach. Consistent with their assigned missions, federal agencies should administer their programs in a manner that is sensitive to the needs and rights of landowners, local communities, and the public, and should work with them to achieve common goals.

The DOE-RL approach to ecosystem management, related to biological resources management at Hanford, involves the following elements (these are described more fully in Appendix A):

- defining the goal of ecosystem management
- identifying principles that guide how the goal is attained
- formulating management tools that will enable successful implementation of ecosystem management at Hanford.

To provide a policy basis for the ecosystem management approach at Hanford, DOE-RL has established a broad biological resources protection policy. This policy states:

It is the policy of the U.S. Department of Energy, Richland Operations Office to act as a responsible steward of the environment. This stewardship will be based on the principles of ecosystem management and sustainable development.

2.2.1 Hanford's Biological Resources Management Policies

Based on legal requirements, the ecosystem management approach, and its own broad biological resources protection policy directive, DOE-RL also has developed a more specific set of policies for biological resource management at Hanford as shown in the box on the next page.

¹ Memorandum from H. R. O'Leary, Secretary of Energy, to Secretarial Officers and Operations Office Managers, December 21, 1994, Land and Facility Use Policy.

² Memorandum of Understanding to Foster the Ecosystem Approach, dated December 15, 1995. See Appendix A for the list of signatories.

DOE-RL Biological Resources Management Policies

DOE-RL will:

- act to preserve and enhance the biological resources under its stewardship as valuable national resources
- ensure biological resource values are considered by all programs in all actions conducted on DOE-RL's behalf consistent with applicable treaties, laws, regulations, and obligations as a natural resource trustee
- endeavor to enhance throughout the Hanford complex an awareness of and appreciation for biological resource values and their preservation, restoration, and enhancement
- integrate biological resource management goals and administrative procedures into relevant program- and project-level activities to ensure potential adverse impacts to biological resources are avoided or minimized
- integrate biological resource information into land and facility use plans to ensure broad-scale land use planning and specific site-selection decisions consider biological resource values, apply ecosystem management principles, and minimize cumulative impacts to biological resources
- incorporate ecosystem management principles and tools into the program (project) planning process to facilitate meeting biological resource management goals and objectives while minimizing impacts to program (project) budgets and schedules
- adopt recommendations of the Council on Environmental Quality to incorporate biodiversity considerations into environmental impact analysis under NEPA (CEQ 1993)
- mitigate, as necessary, adverse impacts to biological resources that may result from current and future Hanford activities in a manner commensurate with the value of the resource and the severity of the impact
- as the Lead Response Agency at Hanford under the National Contingency Plan, conduct response activities (i.e., removal or remedial actions) cost effectively that avoid or minimize adverse impacts to biological resources
- cooperate with federal and state resource agencies to ensure a cost-effective yet adequate information baseline on resource status is maintained for Hanford's biological resources within a bioregional context
- coordinate with other governmental agencies and stakeholders, as applicable, on biological resource management issues in an open and cooperative manner.

2.2.2 Hanford's Biological Resources Management Goals

Biological resources management goals can be used to formulate specific resource management objectives that relate to measurable outcomes for managed resources. To accomplish each objective, specific actions to be taken and monitoring necessary to evaluate success need to be clearly defined. The following are DOE-RL's biological resource management goals:

1. Continue on an as-needed basis the process of inventorying the biological resources of the Hanford Site and relate their occurrence, abundance, and distribution to their status within the Columbia Basin Ecoregion. Maintain an up-to-date data base of inventory results.
2. Preserve Hanford's *native* biological diversity (terrestrial and aquatic) and the ecological processes that sustain it within a bioregional context. At the same time, support human needs, including the DOE-RL mission. Secondary goals [from Grumbine (1994)] include maintaining viable populations of all native species and representatives of all native ecosystem types across their natural range of variation.
3. Establish consistent and effective requirements, guidelines, and procedures for the program- and site-wide management of biological resources at Hanford.
4. Identify Hanford's biological resources of concern that require status monitoring, impact assessment, and appropriate mitigation.
5. Expand the focus of biological resource management from threatened and endangered species and their critical habitat needs to recognize that a broader array of fish, wildlife, plants, and habitats are of value. Focus increased management attention on the overall integrity of the Hanford ecosystem and its connection to the surrounding landscape versus managing single species or small areas.
6. Preserve and enhance ecosystem integrity by managing biological resources at a scale commensurate with the scale of the natural processes that sustain them; protecting communities, ecosystems, and landscapes to ensure protection for a large number of species and their

interrelationships; managing to maintain evolutionary and ecological processes; minimizing fragmentation by promoting the natural pattern and connectivity of habitats; restoring degraded resources to enhance ecosystem integrity; avoiding introduction of non-native species and minimizing further expansion of currently present non-native species into native communities;

protecting rare and ecologically important species and unique or sensitive environments; maintaining or mimicking naturally occurring structural diversity; monitoring ecosystem integrity; and acknowledging uncertainty [derived in part from CEQ (1993) and Grumbine (1994)].

7. Establish focused objectives for biological resource information needs to support both resource management and the Hanford mission.