

FOREST SERVICE MANUAL  
WASHINGTON

TITLE 2600 - WILDLIFE, FISH, AND SENSITIVE PLANT HABITAT  
MANAGEMENT

Amendment No. 2600-91-8

Effective October 22, 1991

POSTING NOTICE. Amendments are numbered consecutively by title and calendar year. Post by document name. Remove entire document and replace with this amendment. Retain this transmittal as the first page of this document. The last amendment to this Title was Amendment 2600-91-7 to FSM 2600 Zero Code.

This amendment supersedes Amendment 2600-91-7 to FSM 2600 Zero Code.

<u>Document Name</u>	<u>Superseded</u>	<u>New</u>
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2600 Zero Code	13	15

Digest:

2609 - This is a technical amendment to delete the section on 2609.11, Wildlife Habitat Improvement Handbook. This obsolete Handbook was removed by the previous amendment 2600-91-7, but the text mistakenly was not revised.

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Chief

FSM 2600 - WILDLIFE, FISH, AND SENSITIVE PLANT HABITAT  
MANAGEMENT  
WO AMENDMENT 2600-91-8  
EFFECTIVE 10/22/91

ZERO CODE

2601 - AUTHORITY.

2601.1 - Laws and Orders. The major laws and Executive Orders that provide authority to manage wildlife, fish, and plant resources on National Forests and Grasslands are listed as follows:

1. Agricultural Appropriation Act of May 23, 1908. (35 Stat. 251, 259; 16 U.S.C. 553.) provides authority for Forest Officers to assist States in wildlife and fish law enforcement.

2. Fish and Wildlife Coordination Act (72 Stat. 563, 16 U.S.C. 661 et seq.) provides that wildlife and fish resources will receive equal consideration with other resources in water resource development programs.

3. Multiple-Use, Sustained-Yield Act of June 12, 1960 (74 Stat. 215, as amended; 16 U.S.C. 528-531) recognizes and clarifies Forest Service authority and responsibility to manage wildlife and fish.

4. National Environmental Policy Act of January 1, 1970 (83 Stat. 852 as amended; 42 U.S.C. 4321, 4331-4335, 4341-4347) requires fish and wildlife concerns to be assessed in environmental analysis and environmental impact statements.

5. Endangered Species Act of December 28, 1973. (87 Stat. 884 as amended; 16 U.S.C. 1531, 1532, 1533, 1536, 1540). See FSM 2670 for summary.

6. Forest and Rangeland Renewable Resources Planning Act of 1974, (88 Stat. 476 as amended; U.S.C. 1601-1614) provides that wildlife and fish be included in the development of the National Resources Assessment and related Forest Service Program.

7. Federal Water Pollution Control Act of July 9, 1956, as amended, (33 U.S.C. 1151) provides for restoration of water quality to meet National standards.

8. National Forest Management Act of 1976 (90 Stat. 2949.; 16 U.S.C. 472a, 476 (note), 500, 513-516, 521b, 528 (note), 576b, 592-594 (note), 1600 (note), 1600-1602, 1604, 1606, 1608-1614) provides for balanced consideration of all resources in National Forest land management planning.

9. Federal Land Policy and Management Act of 1976, (90 Stat. 2743; 43 U.S.C. 1701 (note), 1701, 1702, 1712, 1714-1717, 1732, 1740, 1744, 1745, 1751-1753, 1763-1771, 1781; 7 U.S.C. 1012a; 16 U.S.C. 478a, 1338a), provides authority for the Secretary of Agriculture to designate areas of National Forest System lands where, and for established periods when, hunting and fishing will not be permitted.

10. Preservation of Tule Elk, August 14, 1976 (90 Stat. 1189), provides for Federal participation in preserving the Tule Elk population in California.

11. Bald Eagle Protection Act. June 8, 1940. (16 U.S.C. 668-668d). See FSM 2670 for summary.

12. Executive Order 11990, May 24, 1977, Protection of Wetlands. Provides special restrictions on manipulation of wetlands.

13. Sikes Act of September 16, 1960, (16 U.S.C. 670a) provides for carrying out wildlife and fish conservation programs on Federal lands including authority for cooperative State-Federal plans and authority to enter into agreements with States to collect fees to fund the programs identified in those plans.

2601.2 - Departmental Regulation 9500-4. USDA policy on wildlife, fish, and plant habitat management pertinent to public lands is as follows:

(1) National Forest System Lands

Habitats for all existing native and desired non-native plants, fish, and wildlife species will be managed to maintain at least viable populations of such species. In achieving this objective, habitat must be provided for the number and distribution of reproductive individuals to ensure the continued existence of a species throughout its geographic range.

Habitat goals for threatened or endangered plants and animals, species with special habitat needs, species in demand for hunting, fishing, and trapping, and for other species as appropriate, will be established and implemented. This will be accomplished through the Forest planning process in response to targets identified in the Forest and Rangeland Renewable Resources Planning Act (RPA) program and public issues and concerns brought up in the planning process, consistent with available resources. Habitat goals will be coordinated with State Comprehensive Plans developed cooperatively under Sikes Act authority and carried out in forest management plans with State cooperators. Monitoring activities will be conducted to determine results in meeting population and habitat goals.

Land and water management activities will integrate fish and wildlife habitat needs with other resources and programs and will, where possible, mitigate habitat losses, consistent with Forest Plan goals and objectives as developed in the planning process.

Research needed to accomplish these goals and objectives will be planned and carried out within FS research authorities.

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d. Threatened or Endangered Species

The Department will conduct its activities and programs to assist in the identification and recovery of threatened and endangered plant and animal species and to avoid actions which may cause a species to become threatened or endangered. In cooperation with the States, critical habitat and other habitats necessary for the conservation of threatened and endangered species on lands administered by the Department will be evaluated and measures prescribed to prevent its destruction or adverse modification. The Department will consult as necessary with the Departments of the Interior and/or Commerce on activities that may effect threatened and endangered species.

Agencies of the Department will not approve, fund or take any action that is likely to jeopardize the continued existence of threatened and endangered species or destroy any habitat necessary for their conservation unless exemption is granted pursuant to subsection 7(h) of the Endangered Species Act of 1973, as amended. The Department will cooperate with other Federal and State agencies in carrying out this policy and will coordinate with the Secretaries of the Interior and Commerce in the administration of the Endangered Species Act and the animal and plant quarantine laws. However, nothing in this policy shall be construed as superseding or limiting in any manner the functions of the Department under the plant and animal quarantine laws.

The Department will enforce, to the fullest extent possible, the regulations, provisions, goals, and objectives of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, and the Lacey Act, as amended, involving the importation and exportation of terrestrial plants.

e. Economic Losses From Plant and Animal Pests

Programs of the Department will seek to alleviate damage by plant and animal pests to farm crops, livestock, poultry, forage, forest and urban trees, wildlife and their habitats. Departmental agencies, through management and research programs, will develop or assist in developing new techniques and methodologies for the prevention of damage to agricultural or forestry production. They also will strive to reduce potential depredation through improved management of USDA programs. Such techniques and considerations will be incorporated into appropriate management and education programs.

One goal is to minimize actual or potential conflicts between predators and livestock. Another goal is to reduce depredation on crops, poultry, livestock, forests, wildlife, other resources, and threats to human health, under registered control methods. When control is necessary, the offending animals will be removed as humanely and efficiently as possible, provided such action does not threaten the continued existence of any species.

On lands administered by the Department, direct predator and rodent damage control programs will be coordinated with other Federal and State agencies. The Department will coordinate with appropriate agencies of the Department of the Interior and with State agencies on predator-livestock research, extension-education programs, and on damage control activities.

In accordance with Executive Order 11987 (Introduction of Exotic Species), the Animal and Plant Health Inspection Service of the Department will cooperate with the Department of the Interior in development and implementation of appropriate procedures to restrict the introduction of undesirable exotic species into natural ecosystems.

The Department will promote the concept and use of integrated pest management practices in carrying out its responsibilities for pest control.

#### 2602 - OBJECTIVES.

1. Maintain ecosystem diversity and productivity by:
  - a. Recovering threatened or endangered species.
  - b. Maintaining at least viable populations of all native and desired non-native wildlife, fish, and plants in habitats distributed throughout their geographic range on National Forest System lands.

- c. Producing habitat capability levels to meet sustained yield objectives relative to demand for featured and management indicator species identified in RPA and Forest Plans.
2. Provide diverse opportunities for esthetic, consumptive, and scientific uses of wildlife, fish, and sensitive plant resources in accordance with National, Regional, State and local demands.

2603 - POLICY.

1. Serve the American people by maintaining diverse and productive wildlife, fish, and sensitive plant habitats as a integral part of managing National Forest ecosystems. This includes recovery of threatened or endangered species, maintenance of viable populations of all vertebrates and plants, and production of featured species commensurate with public demand, multiple-use objectives and resource allocation determined through land management planning process.

2. Maintain a partnership with State fish and wildlife agencies in habitat management efforts. Recognize the State wildlife and fish agencies as responsible for the management of animals and the Forest Service as responsible for the management of habitat. Involve other Federal agencies, concerned conservation groups, and individuals in activities affecting wildlife and fish as appropriate.

3. Resolve habitat management issues, concerns, and opportunities as close to the local level as possible.

4. Specify quantitative wildlife, fish, and sensitive plant habitat objectives and standards in the RPA Program, Regional guides, Forest Plans and Sikes Act schedules.

5. Develop a balanced program that meets goals by investing directly in habitat improvements when necessary to meet public demand and coordinate management activities that produce other resources to restore or mitigate habitat losses or provide improved habitat.

6. Use Wildlife and Fish Habitat Relationships classifications, models, and procedures in quantitative habitat evaluations, planning for diversity, viable populations, and management indicator species habitat productivity, and to support monitoring of fish and wildlife resources.

7. Give coequal consideration to wildlife and fish habitat with other resources in Forest Service programs.

8. Involve Research and other scientists in the development of strategies to resolve major issues and concerns and identify management opportunities in order to foster awareness of management needs and gain timely application of new insights and information.

9. Acquire habitats or adjust ownership patterns to meet wildlife, fish, and plant habitat goals and objectives identified through Forest planning.

2604 - RESPONSIBILITY.

2604.1 - Chief. The Chief reserves the authority to sign national level agreements with national level cooperating agencies and groups involved in Fish and Wildlife activities on National Forests.

2604.11 - Deputy Chief, National Forest System. The Deputy Chief:

1. Approves quality standards for management of wildlife and fish resources.
2. Approves standards for management of interregional species where viability is a concern and for RPA indicator species.

2604.12 - Director, Wildlife and Fisheries Staff. The Director:

1. Negotiates National level agreements with National level cooperating agencies and groups involved in Fish and Wildlife activities on National Forests.
2. Recommends Service-wide wildlife, fish, and sensitive plant habitat management program continuity and balance through:
  - a. the annual budget and RPA processes.
  - b. training and coordination on major new issues, concepts, and processes.
  - c. coordination on issues having national significance.
3. Maintains relations with the public and organizations that have a concern about wildlife, fish, and sensitive plant resources and their management on a national scale. Keep abreast of Nation-wide public attitudes and desires.
4. Maintains coordination among the Regions for major fish, wildlife, and sensitive plant activities through:

- a. Wildlife and Fish Habitat Relationships System.
  - b. Wildlife and fish values.
  - c. Wildlife and fish and sensitive plant planning and budgeting concepts.
  - d. Annual Wildlife and Fisheries and Sensitive Plant Report.
  - e. Wildlife and fish direction for land and resource management planning.
5. Develops and recommends quality standards for management of National indicator species.

2604.2 - Regional Forester. The Regional Forester:

1. Prescribes and implement Regional objectives, policies, and responsibilities for all major aspects of the wildlife, fish, and sensitive plant jobs.
2. Develops standards for consistency and coordination between Forests and Regions in meeting: 1) Recovery Plan goals; 2) maintaining viable populations; 3) making quantitative evaluations of habitat capability for management indicator species; 4) maintaining major fish, wildlife and State and Private activities; 5) meeting RPA targets; and 6) integrating Sikes Act plans with Forest plans.
3. Maintains a partnership with State fish and wildlife agencies and close communications with other people and organizations concerned about wildlife, fish, and sensitive plant management on a Statewide or Regional basis.
4. Provides training and technical assistance to Forest Supervisors in those areas lacking expert staffing.
5. Uses the Technology Transfer process for implementing new technologies.
6. Develops and administers the Regional Wildlife and Fish Habitat Relationships Systems.
7. Maintains and annually revises with appropriate Station Director(s) a list of priority wildlife, fish, and sensitive plant habitat research needs.

2604.21 - Forest Supervisor. The Forest Supervisor:

1. Establishes management direction (objectives, standards, and policies) that ensures coordination of wildlife, fish, and sensitive plant habitat objectives in Ranger District programs.

2. Maintains communications with individuals and organizations with local concerns about wildlife, fish, and sensitive plant resources management.

3. Coordinates implementation of Forest and project level plans with State wildlife and fish management agencies. Implement Sikes Act plans through Forest plans or as otherwise appropriate and provide for their annual updating.

4. Uses Wildlife and Fish Habitat Relationships classifications, models, and procedures to integrate wildlife and fish habitat inventory, habitat capability evaluation, and resource coordination guidelines into Forest level interdisciplinary resource planning.

5. Maintains expert level staffing capable of: 1) meeting objectives; 2) developing new Forest policies, plans, and processes; 3) determining the adequacy of biological evaluations; 4) evaluating population viability and habitat capability; and 5) training District biologists, rangers, and other personnel in wildlife and fish management.

6. Ensures that all management activities authorized, funded or implemented, do not jeopardize endangered, threatened or sensitive animal and plant species.

2604.22 - District Ranger. The District Ranger:

1. Plans and implement wildlife and fish projects that are most responsive to Forest Plan goals.

2. Monitors and evaluate wildlife and fish management prescriptions to measure compliance with objectives, determine effects and adjust subsequent management actions when needed.

3. Uses Wildlife and Fish Habitat Relationships classifications, models, and procedures to integrate wildlife and fish habitat inventory, habitat capability evaluation, and resource coordination guidelines into project level interdisciplinary resource planning and management.

4. Maintains communications with individuals and organizations concerned about fish and wildlife in the District's area of influence.

5. Encourages local fish and wildlife groups and individuals to accomplish project work through volunteer efforts.

2605 - DEFINITIONS.

See FSM 2670 for definitions relating to threatened, endangered, and sensitive species.

These definitions are for use in administering National Forest System lands.

Adfluvial Fish. Lake-dwelling fish that ascend tributary streams to spawn and whose progeny grow for one to three years in the natural streams before they emigrate to the lakes to mature.

Anadromous Fish. Fish species that mature in the sea and migrate into freshwaters to spawn. Salmon, steelhead, and shad are examples.

Aquatic Habitat. Environments characterized by the presence of standing or flowing water.

Cold-water Fishery. Aquatic habitats that predominately support fish species that have temperature tolerances up to about 70° F, and exhibit their greatest reproductive success at temperatures below 65° (18.3° C). Salmon, trout, whitefish, and grayling are examples.

Cool-Water (Intermediate) Fishery. Aquatic habitats that are intermediate between cold and warm waters and support fish species that have greatest reproductive success in a temperature range of 60° to 75° F (15-24° C). Usually included in this group are such species as smallmouth bass, northern pike, walleye, muskellunge, sturgeon, and shad.

Deepwater Habitats. Permanently flooded lands lying below the deepwater boundary of wetlands.

Direct Habitat Improvement. A project (set of activities) designed and initiated to improve habitat capability (carrying capacity) for fish, wildlife, or sensitive plants. These are functions 081, 082, 083, and 084 funded with appropriate dollars, KV, or co-op dollars (FSM 6553).

Diversity. The distribution and abundance of different kinds of plant and animal species and communities in a specified area. (Use the 36 CFR 219 definition for diversity as applied to a National Forest Plan.)

Ecological Indicator. A plant or animal whose population dynamics reflect significant changes in the conditions or productivity of an ecosystem.

Estuarine Habitat. Tidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater

runoff from the land. Limits are: (1) upstream and landward to where ocean-derived salts measure less than 0.5 parts per thousand during the period of average annual flow; (2) to an imaginary line closing the mouth of a river, bay or sound; and (3) to the seaward limit of wetland emergents, shrubs or trees where they are not included in (2).

Exotic. Species not originally occurring in the United States and introduced from a foreign country. Exotic species that have become naturalized such as the ring-necked pheasant are considered the same as native species. Consult the Fish and Wildlife Service where there is a question. A native species is considered native to the United States. An indigeous species is considered indigeous to a National Forest.

Featured or Emphasis Species. A species of high public interest and demand. The management goal for these species is usually to maintain or improve habitat capability when economically and biologically feasible.

Feral animals. Animals, or their progeny, which once were domesticated but escaped captivity and are running wild, (e.g., horses, burros, and house cats). Feral pigs are considered game animals in some States. The determination of game animal status is made cooperatively within the States.

Game. Wild animals hunted, trapped, or fished for sport, financial gain, or food under State or Federal laws, codes, and regulations.

General Population Distribution. For the purposes of planning under the National Forest Management Act, the geographic range of a species as of 1976.

Habitat. A place where the physical and biological elements of ecosystems provide a suitable environment and the food, cover, and space resources needed for plant and animal livelihood.

Habitat Capability. The estimated carrying capacity of an area to support a wildlife, fish, or sensitive plant population. Habitat capability can be stated as existing or future and is normally expressed in numbers of animals, pounds of fish, or acres of plants.

Habitat Capability Model. A model (word, graphic, or mathematical) that specifies the quantitative relationships between habitat elements and their conditions and the ability of an area to support wildlife, fish, and sensitive plant populations.

Indigenous species. A species which originally inhabited a particular National Forest or National Grassland (see definition of exotic).

Lacustrine Habitat. All wetland and deepwater habitats with all of the following characteristics: (1) situated in a topographical depression or a dammed river channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30 percent aerial coverage; and (3) total area exceeds 20 acres (8 ha). Limits: Lakes or reservoirs are bounded by upland, or by wetland dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens. Where a river enters a lake or reservoir of the lacustrine shoreline forms a boundary.

Management Indicator Species. Any species, group of species, or species habitat element selected to focus management attention for the purpose of resource production, population recovery, maintenance of population viability, or ecosystem diversity.

Native Species. All animal and plant species originally occurring in the United States.

Nongame. Any species of wildlife or fish which is ordinarily not managed or otherwise controlled by hunting, fishing, or trapping regulations. The designation may vary by State.

Old Growth. Terrestrial ecosystems characterized by vegetation and associated animals requiring the oldest and most mature successional stages. Old growth forests contain trees normally beyond the age of optimum maturity for economic timber harvest.

Palustrine Habitat. All nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5‰. Also all wetlands lacking such vegetation, but with all of the following characteristics: (1) areas has less than 20 acres (8 ha.) (e.g., a pond); (2) active wave formed a bedrock shoreline features lacking; (3) water depth is deepest part of basin less than 6.5 feet (2m) at low water; and (4) salinity due to ocean-derived salts is less than 0.5‰. Limits: Palustrine habitats are bounded by upland and any other wetland habitat.

Population. For the purposes of Forest planning, the set of individuals of the same species that occurs within a National Forest. Geographically and biologically isolated groups of individuals within a National Forest are considered to be local or subpopulations.

Potential Habitat. Habitat that is suitable but currently unoccupied by the species or community in question.

Production Function. Quantitative representations of the relationships between inputs and outputs in a modeling process. A habitat capability model is a specific kind of production function.

Riparian Habitat. Habitats related to and influenced by surface or subsurface waters, especially the margins of streams, lakes, ponds, wetlands, seeps, and ditches. Riparian habitat refers to the transition zone between aquatic and upland habitat.

Riverine Habitat. All wetlands and deepwater habitats within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salt in excess of 0.5‰. Limits: A river, stream, or creek is bounded on the landward side by upland, by the channel bank, or by wetland dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens. It terminates at the downstream end where the concentration of ocean-derived salts in the water exceeds 0.5‰ during the period of annual average flow, or where the channel enters a lake. It terminates at the upstream end where tributary streams originate, or where the channel leaves a lake.

Viable Population. A population that has the estimated numbers and distribution of reproductive individuals to ensure the continued existence of the species throughout its existing range in the planning area. For forest planning purposes, a planning area is one or more identified National forest(s).

Warm-Water Fishery. Aquatic habitats that support fish species that have their best reproductive success and summer water temperature tolerance between 75° and 85°F (23-29 C) or about 80° F. The various sunfish species, and largemouth bass are examples.

Wetlands. Habitat that is transitional between terrestrial and aquatic where the water table is usually at or near the land surface, or the land is covered by shallow water. Wetlands have one or more of the following characteristics: (1) at least periodically, the land supports predominantly hydrophytic plants; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at sometime during the growing season of each year.

Wildlife and Fish Habitat Relationships System. The Regional system of species and habitat classifications, species habitat relationships models (e.g., habitat capability models), and procedures used in quantitative habitat evaluations process.

Wildlife and Fish User Day (WFUD). A 12-hour day in which a person participates in a wildlife or fish-related recreation activity. For planning purposes, WFUD's are calculated by looking at animal populations and the projected recreational use that is anticipated from those animals.

#### 2608 - REFERENCES.

Payne, Neil F.; Copes, Frederick, technical editors. 1988. Wildlife and Fisheries Habitat Improvement Handbook, Administrative Report. (unnumbered). Washington, DC: U.S. Department of Agriculture, Forest Service. 406p. Much of the information in this report was formerly in FSH 2609.11 Wildlife Habitat Improvement Handbook, which is no longer in the Directive System. This report is a complete revision and expansion of the technical information in the former Handbook, and it serves as a comprehensive reference for habitat improvement practices.

#### 2609 - HANDBOOKS.

##### 2609.1 - Internal Service-wide Handbooks.

2609.13 - Wildlife and Fisheries Program Management Handbook (FSH). This Service-wide handbook contains specific "how-to" direction for managing wildlife and fisheries programs that was removed from 2600 as a result of the Forest Service Manual Review project.

2609.2 - Internal-Unit Handbooks. Regions should send 5 copies to the WO of each handbook issued under the following code.

2609.21 - Wildlife Habitat Evaluation Handbook (FSH). This code is established for those Regions that want to issue instructions on wildlife habitat inventories, habitat capability analysis, and project efficiency/effectiveness evaluation. Handbooks under this code can include all habitat inventory, evaluation, and monitoring methods for wildlife management indicator species, guilds, or habitats.

2609.22 - Animal-Damage Control Handbook (FSH). This code is established for use by any Region that wants to issue a handbook on this subject.

2609.23 - Fisheries Habitat Evaluation Handbook (FSH). This code is reserved for any Region that wants to issue instructions on fisheries habitat inventories, habitat capability analysis, and project efficiency/effectiveness evaluation. It can include all habitat inventory, evaluation, and monitoring methods for fisheries management indicator species, guilds or habitats. This expands the scope of the Fisheries Surveys Handbook.

2609.24 - Wildlife and Fisheries Habitat Management Handbook (FSH). Regions may issue unit handbooks on this subject at this code.

2609.25 - Threatened and Endangered Plants Program Handbook (FSH). This code is established for any Region that wants to issue a handbook on the development and implementation of management programs for Threatened and Endangered plant species.