REAL ESTATE OPERATIONS AND NATURAL RESOURCES MANAGEMENT PROCEDURAL MANUAL
NAVFAC P-73
VOLUME 11

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CHAPTER 1: INTRODUCTION

1. SCOPE:

Volume II of the Navy Real Estate Operations and Natural Resources Management Procedural Manual has been prepared to provide a comprehensive document which addresses all Chief of Naval Operations natural resources progr requirements, guidelines, and standards.

2. DEFINITIONS:

a. Annual Increment. A document, prepared annually, to facilitate implementation of a natural resources management (NRM) plan section. The annu increment concisely provides details of proposed work to be carried out during fiscal year. The annual increment is prepared in advance of the fiscal year i covers. It serves as the hasis for funding authorizations and for evaluating progress in achieving obiectives of a NRM plan section.

b. Conservation. Pertains to the wise use of natural resources and prevention of unnecessary loss, waste, or harm to natural resources.

c. EFD. Engineering Field Division of Naval Facilities Engineering Command.

d. Installation. Shore activity with land management responsibility.

e. Major Claimant. Second echelon command responsihle for installations.

f. Multiple Use Manaaement. Coordinated management of natural resources to support the best combinition of uses serving present and future needs of th United States and its people without impairing the productivity of the land ar water.

g. Natural Resources. Soil, water, mineral, faunal, and floral resources

h. Natural Resources Manaqement (NRM) Plan. A long ranqe planning document that guides ecologically sound and cost effective management of natur resources to maximize benefits for the installation and neighboring community. The NRM plan consists of up to four sections as described in this chapter.

i. Natural Resources Management (NRM) Program. Includes, but is not limited to, soil and water conservation; landscaping and grounds maintenance; aqricultural and grazing outlease management; range management; forest management; fish and wildlife management; protection of wetlands, floodplains and coastal barrier islands; protection of endangered species; development and management of natural resources for outdoor recreation; establishment and management of ecological reserves and research areas; establishment and management of youth programs; and reduction of the potential for collisions between aircraft and birds or other animals.

j. NAVFACENGCOM. Naval Facilities Engineering Command.

k. NAVFACENGCOMHQ. Naval Facilities Engineering Command Headquarters.

3. REFERENCES:

a. Public Law 86-797, Sikes Act as amended (16 USC 670a through o)
b. DODDIR 4700.1, Natural Resources Management Program
c. SECNAVINST 6240.6E, Department of the Navy Environmental Protection and Natural Resources Management Program
d. OPNAVINST 5O90.1, Environmental and Natural Resources Protection Manual

4. AUTHORITY:

The Sikes Act, as amended, requires military installations to manage natural resources for multipurpose uses and to provide the public access for those uses to the extent it is appropriate, and consistent with the military mission.

DODDIR 47OO.l requires that the Department of the Navy implement and maintain a balanced and integrated program for the management of natural resources.

SECHAVINST 6240.6E assigns responsibility to the Chief of Naval Operations and the Commandant of the Marine Corps for the development and implementation of natural resources programs on all land and water areas under the jurisdiction of the Department of the Navy. This SECNAVINST also tasks the Chief of Naval Operations with providing professional technical assistance, upon request, to Marine Corps Installations.

OPNAVIUST 5O90.1 establishes broad policy and assigns responsibilities for the Navy Natural Resources Program. COMNAVFACENGCOM is assigned overall program management responsibility with authority to establish, coordinate, and promulgate the program, to issue appropriate instructions to Navy installations for implementation of the various natural resources programs, and to provide professional natural resources services and technical assistance, through the EFDs, to Navy and Marine Corps installations. OPNAVINST 5O9O.l directs major claimants and intenmediate commands to ensure that subordinate commands support natural resources programs on installations under their control. Installation Commanders/Commanding Officers are tasked with:

a. Requesting and using technical assistance from the appropriate EFD in developing and maintaining an effective natural resources program.

b. Providing funding to ensure adequate support of the natural resources program.

c. Applying practices set forth in approved natural resources management plans.

d. Assigning specific responsibilities, centralized supervision, and qualified personnel to the natural resources program. (All installations should, as a minimum, appoint a natural resources program coordinator or manager.)

5. DISCUSSION:

Natural resources management produces benefits for the Department of the Navy and supports the military mission by:

a. Reducing grounds maintenance costs and producing income to pay for program costs. Land areas managed for commercial forest product production, or outleased for agricultural uses, do not require O&MN funded maintenance. Income generated from the sale of timber and outleased land is used to pay for natural resources program administration costs and many land improvement projects.

b. Reducing the potential for collisions between birds and aircraft on Naval airfields. Scientifically managing the land adjacent to runways to make it less attractive for certain birds and other animals identified as hazards to aircraft saves millions of dollars in jet engine foreign object damage (FOD) repair costs.

c. Avoiding unnecessary conflicts between mission requirements and natural resources legal mandates. Identification of protected resources such as threatened/endangered species and wetland areas allows planning of mission support requirements to avoid possible conflicts. If a conflict cannot be avoided, it is advantageous to address it at the earliest stage of planning.

d. Demonstrating to the public that we are taking care of invaluable land, water, and wildlife resources. The advantages to an installation of a good land steward image cannot be overstated. Conscientious natural resources management is a major element in earning this image.

e. Enhancing the quality of life for Navy personnel. Scientifically managing natural resources increases the esthetic appeal of an installation environment and develops opportunities for outdoor recreation such as hunting, fishing, hiking, and nature study.

6. NAVY NATURAL RES0URCES PROGRAM OBJECTIVES:

Wise use of natural resources is essential to the continued strenqth of our nation. Our natural heritage provides the foundation upon which the defense of freedom rests. The Navy is committed to conserving and managing soil, water, forests, fish, wildlife, and outdoor recreation resources. Our primary purposes in managing these natural resources are to support our national defense mission, maximize multiple land use benefits, and fulfill land stewardship responsibilities required by applicable Laws, Executive Orders, and Department of Defense Directives. In order to achieve these purposes, Navy natural resources program objectives are to:

a. Prepare and maintain, as current working documents, all required sections of each installation integrated natural resources management plan. Each plan must adequately facilitate mission planning and decision making to ensure compatibility of natural resources management with local, state, and federal objectives and policies.

b. Implement land management practices that reduce grounds maintenance costs, conserve soil and water, improve real estate value, protect wetlands and floodplains, abate non-point sources of water pollution, control noxious weeds, and prevent erosion.

c. Identify wetlands and threatened/endangered species on Navy lands.

d. Outlease all lands that are suitable and available for agricultural uses (with consideration for operational requirements and a balanced multiple-use natural resources program).

e. Reduce the potential for bird and other animal collisions with aircraft in the airfield environment.

f. Manage fish, wildlife, and plant resources within ecological limits; maintain appropriate wildlife population levels; and support optimum use of consumptive and non-consumptive fish and wildlife resources.

g. Develop commercial forest resources; manage commercial forest resources on a sustained yield basis; and reduce grounds maintenance costs through forest management.

h. Manage natural resources to provide opportunities for outdoor recreation.

7. MULTIPLE-USE MANAGEMENT RESPONSIBILITIES:

Navy lands shall be managed under the principles of multiple-use and sustained yield, using proven scientific methods and an interdisciplinary approach. Each level of command must ensure that effective natural resources management is an identifiable and accountable function of management. Program implementation will require coordination, and interfacing of responsibilities, by pollution abatement, pest management, master planning, environmental planning, land management, and morale/welfare/recreation functions.

a. Naval installations having land or water areas suitable for the conservation or management of natural resources shall ensure preparation of an integrated, comprehensive natural resources management (NRM) plan which includes all phases of natural resources management applicable to the installation. The purpose of the plan is to systematically decide, in advance, what needs to be done and how to do it. Each plan should be as simple as practicable. A NRM plan is composed of a land management section, a forest management section, a fish and wildlife management section, and a section regarding management of natural resources for outdoor recreation.

additional documents for requirements such as bird-aircraft strike hazard (BASH) reduction or conservation procedures for agricultural/grazing outleases will be addenda to the pertinent management section. (Note that a BASH plan may also be an addendum to an air installation pest control instruction since it contains pest management responsibilities.) The need for each management section is assumed until the EFD natural resources branch makes a professional evaluation and documents the absence of sufficient natural resources for any particular phase of a multiple-use natural resources program. A determination that any phase of natural resources management is not applicable shall be documented in the installation NRM plan.

b. Comprehensive, integrated NRM plans shall be prepared by professionally competent personnel and shall be applied continuously. The appropriate EFD will assist or manage the preparation of NRM plan sections if preparation of the sections is beyond the technical capability of the installation and the installation requests this assistance.

c. Natural resources management plans shall be used to assist planners and implementors of mission activities as well as natural resources managers. New and continuing mission activities that impact natural resources shall be coordinated with appropriate natural resources managers.

d. Basic or foundation information should be found in only one portion of the NRM plan. This portion is usually the land management section or a separate "basic" section. Avoiding repetition (and the potential for variation) of basic inventory information in each management section may facilitate integration of the natural resources program.

e. The installation is responsible for funding implementation of all portions of the natural resources management plan except forest management and agricultural/grazinq management which are centrally funded. Agricultural outlease funds may be available, through the appropriate EFD, for certain projects implementing approved plans. (See criteria established in Chapter 19, Vol. I, of this manual.)

f. All sections of the natural resources plan shall be reviewed annually by the installation and updated as needed to remain current. A well prepared natural resources management section should not require major revision each year. Quite often, "pen and ink" corrections, additions, or updates are sufficient. The appropriate EFD will review and update sections of an installation NRM plan, if requested by the installation.

g. Copies of the most current installation NRM plan sections shall be provided to and retained by the appropriate EFD.

h. Installations shall prepare an annual increment for each management section of the installation natural resources plan. The appropriate EFD will prepare an annual increment, if requested by the

installation. The annual increment is a management section addendum which concisely provides details of all proposed work or projects to be carried out during a fiscal year.

(The term "projects" includes studies, plans, surveys, inventories, and land/water treatments as well as physical improvements). The annual increment shall also be the basis for funding authorizations and shall contain an endorsed certification, by the installation natural resources coordinator (manager), that the management section received an annual review. Within thirty (30) davs of the close of each fiscal year, the annual increment for the closed fiscal year shall be annotated (with handwritten notes) to indicate the status of each project (e.g. completed, in-progress, canceled, deferred, rescheduled). Annotated annual increments for prior years will be retained with the pertinent management section for five (5) years.

i. Copies of the most recent (new) and annotated (old) annual increments for a11 installation NRM plan management sections shall be provided to the appropriate EFD.

j. All management sections of an installation natural resources management plan shall have a title page in the format shown as Appendix l-A. This title page must be endorsed by the Installation Commanding Officer, or his authorized representative, to indicate the installation's commitment to and acceptance of the section and by the Comnanding Officer of the appropriate EFD or his authorized representative, to indicate technical approval of the section.

k. Funding for natural resources projects shall be approved only if the projects support or achieve objectives of an approved natural resources management plan section.

1. Cooperative agreements with appropriate federal and state agencies are required for installations having potential for management of fish, life, and outdoor recreation resources (See Chapters 4 and 5, Vol. II, of this manual). Natural resources cooperative agreements are intended to expand installation opportunities for assistance and cooperation with federal and state agencies. In practice, the assistance and cooperation available from federal and state agencies varies greatly from locality to locality regardless of the existence/non-existence of a cooperative agreement. However, the Sikes Act and DODDIR 47OO.l requires military installations to manage fish and wildlife cooperatively with the U.S. Fish and Wildlife Service, and the appropriate state agency. Additionally, installations cannot legally allow trapping, hunting, fishing, or collecting fees for these activities without a cooperative management document. Cooperative agreements for outdoor recreation are required by the Memorandum of Understanding between the Department of Defense and the Department of Interior. Installations should formally request the participation of the appropriate federal and state agencies in a cooperative agreement. If they decline, it should be in writing and the

declination should be maintained on file in place of a cooperative agreement. Additional information regardinq coordination and cooperation with appropriate federal, state, and local agencies is addressed in Chapters 2, 3, 4, and 5, Vol. II, of this manual.

m. If any multiple land use program involves pesticides, users shall ensure that:

(1) All pesticide applicators (in-house, contract, or outlease) are certified in the appropriate pest control category.

(2) Pesticide use is reported in accordance with NAVFACINST 6250.3F series.

(3) Pesticide application and procurement is coordinated with installation and appropriate EFD natural resources and pest management program managers.

(Title Page Format for Navy Natural Resources Management Plan Section)

APPENDIX A

_____ MANAGEMENT SECTION

COMPREHENSIVE NATURAL RESOURCES MANAGEMENT PLAN

INSTALLATION NAME, STATE

Prepared by:
(Name and Title)

Approving Officials:

Installation Commander Date

Engineering Field Division Date
Naval Facilities Engineering Command

Date of Annual Review/Update Name and Title of Reviewer(s):

CHAPTER 2: LAND MANAGEMENT

1. SCOPE:

This chapter sets forth the authority, responsibilities, and procedures for land management under the jurisdiction of the Chief of Naval Operations.
The land management program encompasses soil and water conservation, landscaping, land restoration, agricultural outleasing, range management, noxious weed and poisonous plant control, grounds maintenance, and erosion control.

2. REFERENCES:

a. Executive Order 11990, Protection of Wetlands
b. Executive Order 11998, Floodplains Management
c. lO U.S.C. 2667(d), Leases: Non-Excess Property
d. DODDIR 4700.1, Natural Resources Management Program
e. OPNAVINST 509O.l, Environmental and Natural Resources Management Program
f. NAVFAC MO-lOO.l, July 1982, Natural Resources, Land Management

3. AUTHORITY:

10 USC 2667(d) provides for the outleasing of military lands.

DODDIR 47OO.l establishes fundamental land management policies and procedures for all military lands.

OPNAVINST 5O90.1, Chapter 15, establishes a policy that the Navy will conserve, develop, manage, and maintain land, grounds, and water areas under Navy jurisdiction in accordance with proven scientific methods, procedures, and techniques.

NAVFAC MO-lOO.l provides tri-service technical guidance in land management practices.

4. RESPONSIBILITIES:

a. Each installation which controls at least 30 acres of land unoccupied by structures, facilities, or pavement shall:

(1) Implement and maintain a balanced and integrated program for soil and water management.

(2) Prepare and implement a land management section, of the installation natural resources plan, in accordance with guidance, criteria, and procedural requirements outlined in paragraph 5 of this chapter and Appendix 2-A. (Assistance from NAVFACENGCOM is addressed in paragraphs 7b and 7h, Chapter 1, Vol. II, of this manual.)

(3) Review all non-excess land to identify areas that may be suitable and available for agricultural outleasing. The results of this

review shall be documented in accordance with guidance in Chapter 19, Vol. I, of this manual.

(4) Prepare project proposals for use of agricultural outlease funds in accordance with guidance in Chapter 19, Vol. I, of this manual and submit to the appropriate EFD for approval and funding.

(5) Provide for periodic and comprehensive technical instruction and training of personnel to ensure efficient development, management, and maintenance of grounds.

(6) Take appropriate action to avoid direct or indirect support of new construction in wetlands whenever there is a practicable alternative.

(7) As required by Executive Orders 11988 and 11990, provide opportunities for early public review of all plans or proposals for actions in wetlands or floodplain areas even if an impact is not significant enough to require an Environmental Impact Statement (EIS). A notice of intent to conduct, support, or allow actions in a floodplain or wetlands will be prepared and circulated. Forthright solicitation of suggestions and comments from the public is required.

(8) Ensure a Department of the Navy Determination to Construct in the Base Control Floodplain/Wetlands is prepared and signed by a SECNAV representative after appropriate circulation of the notice of intent to construct or notice through the environmental documentation, whichever is applicable. The decision document will be prepared by the appropriate command and forwarded to CNO (OP-45 with a copy to the appropriate EFD natural resources management and environmental planning offices) for processing.

(9) Ensure that forestry, outdoor recreation, natural areas, fish, wildlife, and land management programs are compatible with minimization of flood hazards and restoration and preservation of wetlands and floodplains.

(lO) Ensure sitings of future facilities are in accordance with natural resources considerations identified in the installation's master plan and natural resources management plan.

(11) Ensure erosion prevention/control measures are included as requirements in the specifications for all around disturbing construction projects.

b. Naval Facilities Engineering Command Engineering Field Divisions shall:

(1) Provide professional and technical assistance to Naval and Marine Corps installations for land management, preparation of land management sections, and compliance with wetlands and floodplains requirements.

(2) Ensure that site approval investigations and master plan preparations include consideration of natural resources requirements.

(3) Incorporate soil and water conservation measures and landscaping in the preliminary engineering, design, and construction of facilities involving ground disturbance. Include these costs as a specific item in new project investigations and preliminary engineering reports.

(4) Resolve natural resources issues in support of the environmental impact analysis process.

(5) Conduct technical reviews of installation land management programs, at least every two years, to ensure that approved land management sections are being followed to the best advantage of the installation.

(6) Ensure that all DD Form 1391s are reviewed for natural resources requirements compliance.

(7) Prepare, in accordance with guidelines in Appendix 2-B, conservation plans for agricultural outleases on Naval and Marine Corps installations.

(8) Perfonm compliance inspections, at least annually, for agricultural outleases on Naval and Marine Corps installations. (See paragraph 6b, of this chapter.)

(9) Prepare and administer agricultural outlease improvement projects (using agricultural outlease proceeds) on Naval and Marine Corps installations.

(10) Ensure timely obligation of budget authority provided for land management projects accomplished using agricultural outlease funds.

(11) Prepare and submit to NAVFACENGCOMHQ (Code 2O42), no later than thirty (30) days after the close of each fiscal year quarter, an agriculture and grazing outleasing financed program requirements report as required by paragraph 39 of Chapter 19, Vol. I, of this manual.

c. Major claimants and intermediate commands shall require, budget for ensure, and assist subordinate installation land management planning and program implementation.

d. Naval Facilities Engineering Command Headouarters shall:

(1) Provide leadership, technical assistance, and administrative coordination to ensure effective implementation of the land management program.

(2) Assure coordination and mutual support between pollution abatement, pest management, master planning, environmental planning, and multiple land use management functions of NAVFACENGCOM.

(3) Establish, coordinate and promulgate land management guidance, policy, and services required and issue appropriate instructions.

(4) Establish EFD annual workload guidance and approve EFD annual operating plans regarding land management program requirements.

(5) Provide timely distribution of agricultural outleasing funds to EFDs.

5. TECHNICAL REQUIREMENTS AND CONSIDERATIONS:

a. Land Management Section. The land management section (of an installation natural resources plan) shall provide guidance covering soil and water conservation, lake or pond management, surface and sub-surface water protection and use, agricultural outleasing, erosion control, landscaping, grounds maintenance, and range management, where applicable. An installation land management section is an installation's most important natural resources management plan section. It should provide a foundatlon of information for all other natural resources programs and serve as the basic land use and conservation management guidance. Foundation information addressed in the land management section (such as soil types, climate, faunal-vegetative communities, topography, wetlands, and floodplain identification) need not be repeated in other installation NRM plan management sections if a reference to the land management section will suffice. Foundation infonmation may alternatively be contained in a separate "basic” section, completed prior to preparation of any of the management sections. Appendix 2-A provides a model land management section outline. This outline must be tailored to meet the unique requirements of each installation.

b. Wetlands Protection and Floodplains Management. Executive Order 11990 (Protection of Wetlands) and Executive Order 11998 (Floodplain Management) set forth responsibilities of federal agencies in reducing the risk of flood loss or damage to personal property; minimizing the impact of flood loss on human safety, health, and welfare; and restoring the natural and beneficial functions of floodplains and wetlands. Both Executive Orders were issued in furtherance of the National Environmental Policy Act of 1969. Executive Order 11988 was issued in furtherance of the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973.

(1) Requests for new authorizations or appropriations for proposals potentially affecting floodplains or wetlands must be justified by a statement that the proposals comply with the intent of the Executive Orders.

(2) In lease, easement, right-of-way, or disposal transactions, EFDs must reference existing federal, state, or local wetlands regulations, attach other appropriate restrictions, or withold such property from disposal.

c. Improved Grounds. Lands in this category shall be maintained at the level and intensity necessary to meet designated use criteria, protect the natural environment, and ensure a pleasing appearance that harmonizes with

the natural landscape. Appropriate measures shall be taken to beautify buildings

through the planting of low maintenance trees, flowers, and shrubs. Utilize native and drought tolerant species wherever practicable. Priority shall be given to landscaping buildings located adjacent to, or within urban areas, and areas adjoining public thoroughfares. Landscaping should be in accordance with the base exterior architectural plan (if prepared).

d. Semi-improved Grounds. Lands in this category shall be maintained at a lesser degree of intensity than improved grounds but at a level that will enhance natural beauty, ensure conservation of natural resources, and reduce the vegetative fire hazard.

e. Unimproved Grounds. Lands in this category shall be maintained to enhance natural beauty and conserve natural resources, including beneficial vegetative cover and fire management.

f. Weeds and Poisonous Plants. Poisonous plants and noxious weeds shall be controlled or destroyed in accordance with approved practices and applicable laws when they interfere with safe and efficient land use, endanger the health and welfare of personnel, or constitute a source of weed infestation to adjacent property.

9. Protect Proposals and Construction. Soil erosion considerations, watershed impacts, landscaping requ1rements, wildlife habitat losses, forest resources losses, and impacts to outleased land for agricultural use shall be fully considered in all site feasibility studies and in project planning, design, and construction (especially the DD Form 1391 process). To minimize the adverse impacts of construction and operations on land, wetlands, surface and sub-surface water quality, vegetation, fish, and wildlife, appropriate requirements for mitigating losses shall be determined for all projects as an integral part of site development studies. All construction and site development plans shall be reviewed by qualified natural resources and environmental planning personnel to ensure optimal use of natural resources, and that adverse impacts on soil and water resources and other natural resources are minimized and mitigated. All DD Form 1391s and site approval requests must be formally coordlnated (signed) by EFD natural resources and environmental planning representatives before being forwarded to NAVFACENGCOMHQ.

h. Landscape Development. Landscape development work shall be in accordance with an approved landscape development addendum to the land management section. Landscaping shall be functional in nature, simple and informal in design, compatible with adjacent surroundings, enhance the overall natural beauty of the area, use low maintenance planting, and conform to the base exterior architectural plan.

i. Special Ground Cover. In arid areas, where rainfall is insufficient to support mesophytic vegetative growth, crushed rock, gravel, or other similar material shall be considered for use to control wind and water erosion. Native xerophytic plants should be considered for landscaping in

arid areas, if readily available, after reviewing local and state regulations governing transplanting native xerophytic plants.

j. Improved Grounds Irrigation. Improved grounds irrigation shall be minimize and limited to areas where supplemental water is essential to establish lawns and other improved types of vegetation. Frequency of application shall be in accordance with the installation water conservation program and shall not interfere with the military and domestic water supply requirements.

k. Range Management. Grazing outleases shall include consideration for: preserving, enhancing, or reestablishing woody vegetation along riparian zones; impacts on water quality due to animal traffic, recreational use, or road construction; impact on wildlife habitat; prevention of soil erosion, compaction, and overgrazing. Grazing management criteria should cover, wherever practical, the kind, number, and distribution of livestock and the season of grazing.

1. Fire Prevention. Land management sections shall incorporate necessary fire management programs essential for conservation and protection of natural resources and other assets. Measures implemented shall be coordinated with federal, state, county, municipal, or other community agencies, as appropriate.

6. AGRICULTURAL OUTLEASING:

a. Department of the Navy and DOD policy is to aggressively promote agricultural outleases (as defined in DODDIR 4700.1), along with other multiple land uses, to the maximum degree compatible with operational requirements. However, a balanced, multiple-use natural resources program through professional management is the Navy's ultimate goal. The benefits of unimproved land used alternatively for other soil and water conservation programs, wildlife habitat, forest production, and quality of life enhancement through outdoor recreation must receive full consideration.

b. In the development of agricultural outlease conservation plans, EFD's should consider coordination with local U.S. Department of Agriculture agencies and state and local agencies involved in natural resources management. These plans shall be prepared according to quidelines of Appendix 2-B and shall be included as an integral part of bid invitations for agricultural outleases. Professionally trained natural resources personnel of the EFD staff shall make an on-site, compliance inspection and document the inspection for the file at least annually to ensure that use of the leased area is in accordance with the conservation plan, and to provide assistance to the lessee and installation personnel in plan implementation. In all cases, a natural resources specialist from the EFD or the installation shall conduct a pre-inspection of the lease, a final inspection on the expiration or termination of the lease, and document the inspection for the file.

c. In consonance with OPNAVINST 5090.1, a preliminary environmental assessment shall be made for each new or proposed agricultural outlease.

d. Policy, criteria, and procedures for use of agricultural outlease proceeds are addressed in Chapter 19, Vol. I, of this manual.

APPENDIX A

LAND MANAGEMENT SECTION OUTLINE

(The outline below is a guide that should be tailored to the unique needs of particular installation. More detailed section preparation guidance is available from the appropriate EFD.)

1. Introduction: (Much of this information may be addressed in a “basic" section of the natural resources plan. If so, a reference to that section will suffice.)

a. Purpose of Section.
   (1) Military mission
   (2) Land use and its capabilities
   (3) Integrated management of natural resources
b. Location of Installation.
c. History of Installation. (Brief)
d. Present Land Use and Management. (Include total installation acreage.)

2. LAND RESOURCES DESCRIPTION/INVENTORY: (Much of this information may be addressed in a "basic" section of the natural resources plan. If so, a reference to that section will suffice.)

a. General-Synopsis.
   (1) Climate
   (2) Soil
   (3) Topography (land forms)
   (4) Water
   (5) Vegetation
b. Climate.
   (1) Precipitation
   (2) Min/max temperature
   (3) Humidity
   (4) Wind
   (5) Frosts
   (6) Seasons
   (7) Growth limiting condition
c. Soils.
   (1) Major soil associations
   (2) Soil series descriptions (Reference USDA County Soil Survey)
   (3) Engineering specifications (Reference USDA County Soil Survey)
   (4) Special problems/management: identify and characterize severity of problem areas
      (a) Stability
      (b) Upheaval
      (c) Wind erosion
      (d) Water erosion

(e) Salinity/alkalinity/toxicity
(f) Soil pollution
(g) High water tables
(h) Subsidence
(i) Drainage

d. Landforms.
(1) Types (e.g. deserts, canyons, lakes, ponds, streams)
(2) Description/history of problem areas
(3) Maps:
(a) Topographic
(b) Flooding: history/management plans
(c) Drainage: natural/engineered

e. Water.
(l) Available source: natural/engineered
(2) Quality (suitability for agricultural, grounds, wildlife, fisheries)
(3) Existing use (ag/grazing, landscape)
(4) Problems/ management

f. Vegetation: Define major communities (grasslands, brushlands, woodlands, riparian/wetlands croplands, marine, shoreline).
(1) IMPROVED (Intensively developed and maintained/landscaped)
(a) Acreage by type (e.g. housing, golf course, etc.)
(b) Plant species and characteristics
(c) Condition
(d) Problems/needs
(2) SEMI-IMPROVED (Extensively developed and maintained)
(a) Acreage by land use (e.g. Ag lease, park, forest, plantation, orchard)
(b) Species and characteristics
(c) Condition
(d) Problems/needs
(3) UNIMPROVED (Undeveloped)
(a) Acreage by vegetation type (e.g. wetlands, riparian, woodland, research areas, preserves)
(b) Vegetative species composition and characteristics
(c) Condition (e.g. excessively eroding, fire hazard)
(d) Problems/needs

3. MANAGEMENT PRACTICES AND MAINTENANCE PROCEDURES:
a. Objectives. (Clearly identify the objectives of managing the installation's land. General objectives should include many of the items addressed in paragraphs 5 and 6 of Chapter 1, Vol. II, of this manual.)
b. Management Analysis.
(1) Landscape
(a) Identify
1) Screen
2) Windbreak
3) Erosion control
4) Aesthetics/quality of life

5) Shade
6) Urban wildlife: attraction and control (may alternatively refer reader to wildlife management section)
7) BASH potential (if appropriate)

(b) Proposed landscape design (coordinate with and refer to the base exterior architectural plan (BEAP), if appropriate)

1) Identify appropriate species, characteristics
a) Consider drought tolerant, site adapted native species
b) Consider effects on wildlife habitat (refer reader to wildlife management section)
c) Consider exotic plants, with low maintenance and high aesthetic or functional value (such as pest resistant, low maintenance fruit and nut trees for improving quality of life in residential areas.) Ensure coordination with appropriate state and federal agencies before introducing exotic species.
2) Map proposed design
3) Plan plant establishment program
a) Techniques
b) Timing

(c) Describe or reference established landscape restoration and maintenance guidelines where available and appropriate for:

1) Irrigation system(s)
a) Equipment
b) Methods
c) Problems/needs/recommendations
2) Soil Conservation
a) Amendments, cultural practices (e.g mulch, establish compost for maintenance operations)
b) Problems/recommendations
3) Pest Management (refer to installation pest management plan, if appropriate)
a) Problems
b) Identify biological management alternatives
4) Mowing, edging, and pruning
a) Equipment
b) Methods: timing/techniques

(2) Agriculture (existing and potential)
(a) Location/acreage/crop
(b) BASH potential (if appropriate)

(3) Fire Protection (may also refer reader to forest management section)
(a) Firebreaks
(b) Prescribes burning
(c) Vegetation management (e.g. grazing)

(4) Erosion Control
(a) Biological (vegetation management)
(b) Engineered (structural)

(5) Noxious Weed Control
(a) Species
(b) Mapped locations
(c) Control methods available

c. Site-Specific Management Guidelines.

d. Long Range Schedule of Action (to achieve management guidelines outlined in paragraph 3c above.) (This will serve as a basis for annual increments. Include special projects to correct identified problems.)

4 APPENDIXES:

a. Maps/photos. (as needed)

b. References to Contracts, Leases, Agreements (existing and potential.)

APPENDIX B

AGRICULTURAL OUTLEASE CONSERVATION PLANS

Agricultural outlease conservation plans shall contain, but not be limited to the following:

a. An introduction with a brief description of the historical land use of the area outleased.

b. A section which describes the military use of the outleased parcel and appropriate coordination procedures to facilitate communications between the lessee, installation command, and the EFD.

c. Agricultural practices to be adhered to by the lessee to insure conservation of the soil, water, and related resources. These practices may include, but are not limited to: tillage practices; fertilization and soil amendments; crop residue management; pest management practices (in consultation and coordination with the EFD pest management consultant); fire management; farm equipment use limitations and storage; erosion control; and debris removal.

d. Grazing and range management regulations which include kinds of livestock allowed, annual seasonal stocking rates, season of grazing, methods to distribute livestock; animal health, dead animal disposal, and reporting requirements. These regulations are essential to the plan in order to ensure proper and econoical use of the grazing resources while protecting the range and its associated resources from overgrazing, erosion, noxious pests, wildfire, and other detriments.

e. A section giving the names, addresses, and telephone numbers of government offices who have assisted in the development of the plan and who are available for consultation in the implementation of the plan. Such offices may include, but are not 1imited to: EFD Natural Resources Management Branch, installation Public Works Office, local USDA Soil Conservation Service Office, and the County Agricultural Extension Agent.

f. An appendix which includes a lease area conservation plan map, soils capability and/or a range site map, soils and/or range site descriptions, a schedule of conservation work to be performed by the lessee on reimbursable or non-reimbursable terms, specifications, job sheets, plans and diagrams which explain in detail, procedures and projects described in the body of the plan.

CHAPTER 3: FOREST MANAGEMENT

1. SCOPE: .

This chapter sets forth the authority, responsibilities, and procedures for the conservation and management of forest resources under the jurisdiction of the Chief of Naval Operations. It provides guidelines and assigns responsibilities for preparing forestry contracts, forest management sections of the installation integrated natural resources management plan, annual increments, and forms.

2. REFERENCES:

a. Public Law 86-797, Sikes Act as amended (16 USC 67Oa through o)
b. lO USC 2665, Sale of certain interests in land; logs
c. 10 USC 2667 (d), Leases: non-excess property
d. DODINST 731O.5, Accounting for Production and Sale of Lumber and Timber Products
e. NAVCOMPT Manual Vol. 3
f. NAVFAC P-68, Navy Contracting Manual

3. AUTHORITY:

The sale of forest products is authorized by Title 10 U.S. Code, Section 2665. Reimbursement for the cost of managing forest resources for timber production is also authorized by 10 USC 2~65 and is administered in accordance with DODINST 7310.5. NAVCOMPT Manual, Volume 3, para. 07150 and 035475-79 provide guidance on funding, accounting, and fiscal reporting procedures. Annual Department of the Navy Forestry Program expenditures will normally not exceed annual income from the sale of forest products. Transfer of surplus funds between military departments is authorized to balance forestry income with expenses for each department.

4. DISCUSSION:

Forest resource management includes timber management, forest administration, timber sales, reforestation, timber stand improvement, timber area access road construction and maintenance, forest protection, and all other elements directly related to the commercial production and sale of forest products.

5. RESPONSIBILITIES:

a. Each Naval Installation with potential for commercial forest production shall:

(1) Manage and develop forest resources within its boundary for the economical production of con~nercial forest products.

(2) Use forest contracts (including technical specifications) approved by the EFD Real Estate Director to effectively conduct program operations. (Contracting authority may be delegated to the installation by the appropriate EFD in accordance with Chapter 10, Vol. I, of this manual.)

(3) Prepare and submit a forestry management section for the installation natural resources management plan to the appropriate EFD for review prior to approval for implementation. The outline in Appendix 3-A shall be used to prepare the management section. (Assistance from NAVFACENGCOM is addressed in paragraph 7b, Chapter 1, Vol. II, of this manual.)

(4) Prepare and submit a draft annual increment to the appropriate EFD for review prior to its approval by the Installation Commading Officer. Use the format in Appendix 3-B or 3-C to prepare the annual increment. The approved annual increment shall be submitted in final form to the appropriate EFD by l5 May each year. (Assistance from NAVFACENGCOM is addressed in paragraph 7h, Chapter 1, Vol. II, of this manual.)

(5) Prepare and submit to the appropriate EFD Annual Reforestation information in the format of Appendix 3-G (see schedule in paragraph 7a, of this chapter).

(6) Prepare and submit to the EFD quarterly Forest Management information in the format of Appendix 3-H (see schedule in paragraph 7a, of this chapter).

b. Naval Facilities Engineering Canmand Engineering Field Divisions shall:

(1) Provide assistance to installations in preparing and implementing contracts and carrying out the forestry program.

(2) Prepare and submit to NAVFACENGCOMHQ (see schedule in paragraph 7a, of this chapter) accounting information regarding of actual expenses and income attributable to each installation using NAVFAC form 7330/1 (Rev. 5-87) provided as Appendix 3-f.

(3) Provide funding from the timber sale receipts account and technical forestry assistance to installations for preparing and implementing forest management sections and annual increments.

(4) Review and approve installation management sections and annual increments. Upon approval of management sections, distribute copies to NAVFACENGCOMHQ (Code 2042A) and other appropriate commands.

(5) Prepare and submit to NAVFACENGCOMHQ (see schedule in paragraph 7a, of this chapter) an EFD annual increment using the outline provided as Appendix 3-D and a summary of installation annual increments using the outline provided as Appendix 3-E.

(6) Summarize annual reforestation information from installations and forward to NAVFACENGCOMHQ (see schedule in paragraph 7a, of this chapter).

(7) Prepare and submit to NAVFACENGCOMHQ a summary of installation quarterly forest management information using NAVFAC Form 11015/3 (Rev. 5-87), provided as Appendix 3-H, and according to the schedule set forth in paragraph 7a, of this chapter.

(8) Conduct technical reviews of installation forestry programs each year. Provide the installations with a written report discussinq findings and providing recommendations for deficiencies.

c. Major claimants and intermediate commands shall require and ensure subordinate installation commercial forestry planning and program implementation.

d. Naval Facilities Engineerinq Ccmmand Headquarters shall:

(1) Provide leadership, technical assistance, and administrative coordination to ensure effective implementation of the forestry program.

(2) Monitor forest management sections to ensure compliance with outline in Appendix 3-A.

(3) Review and approve annual increments submitted by the EFD's. This will include balancing overall expenses with income, coordinating plans with Marine Corps Headquarters and the DOD Executive agent, and providina resource authorizations to EFD's to implement the approved program prior to 1 October of each year.

(4) Summarize the annual reforestation information and forward it to Department of the Army.

(5) Prepare a summary of EFD and installation accounting information on actual expenses and income attributable to installations (using NAVFAC Form 733O/1 (Rev. 5-87) provided as Appendix 3-F).

(6) Prepare payment of obligations to states, the DOD reserve account, and the U.S. Treasury as required by DnnIN~T 731O.5, NAVCO~PT ~anual Vol. 3, and lO USC 2655.

(7) Prepare a summary of quarterly forest management infomation as required by DODINST 7310.5 using the fonmat of Appendix 3-H.

6. TECHNICAL REQUIREMENTS AND CONSIDERATIONS:

a. Commercial Forest Product Production. Forest lands suitable for timber production shall be intensively managed for restoration and improvement of forest resources, based on soil-site capabilities, integrated with the total natural resources program, and in consonance with military uses. Timber harvested from construction sites prior to construction and the sale of surplus forest products from Navy lands, in general, will he disposed of as provided in Chapter 23, Vol. I, of this manual. Allowable cut for each installation will be based on forest inventory and will be regulated according to sustained yield and multiple-use management for Department nf the Navy lands as a whole.

b. Forest Management Section of the Natural Resources Management Plan. The section for forest management shall be prepared according to the outline in Appendix 3-A. The forest management section is a guide for installation participation in the Department of the Navy forestry program. This section is also intended for use by facilities planners so that forest resources may be conserved and used to the optimum extent possible in support of the military mission and to ensure compatibility between forest management activities and the mission. The Sikes Act prohibits sale of forest products unless the effects of the sale are compatible with the purposes of an installation's cooperative fish and wildlife management document (if one exists). See paragraph 6, Chapter 4, Vol. II, of this manual.

c. Annual Increments. Annual increments are forest management section addenda which describe all forest management work to be completed during a fiscal year. Planned work and expenditures are itemized using the accounts listed in NAVCOMPT Manual, Volume 3. Operational funding is based on project and administrative expenses needed for proper and economical forest management and not on the level of anticipated timber sales receipts from any given installation. Past year costs with adjustments for current conditions, shall be used to estimate costs of proposed forestry work. All equipment purchases shall be justified by economic analysis and submitted to NAVFACENGCOMHQ, for review and approval, with the annual increments. Annual increments for installations with professional foresters shall be prepared and submitted to the appropriate EFD by 15 May of each year. EFDs shall assist all installations in preparing annual increments. EFDs shall approve and summarize installation annual increments and request appropriate funding from NAVFACENGCOMHQ.

d. Forestry Contracts. Sale of forest products shall be accomplished in accordance with the procedures in this paraqraph. EFDs may delegate timber sales contracting authority in accordance with Chapter 10, Vol. I, of this manual. Service contracts are used to acquire services and are handled in accordance with Federal Acquisition Regulations as outlined in NAVFAC P-68. Sales contracts are used to dispose of forest products produced on Navy installations. Sales and service-type work shall not be combined under one contract, but shall be accomplished by separately advertised and awarded contracts.

(1) Service Contracts.

(a) Advertising, bid opening, and award of service contracts for such work as reforestation, timber stand improvement, or fire prevention shall be accomplished generally in accordance with provisions of the Contracting Manual, NAVFAC P-68. Authority to use small purchase contract format shall be limited to $25,OOO.

(b) Technical specifications shall be made part of all service contracts.

(2) Timber Sale Contracts.

(a) Timber resources, including trees, having potential uses for lumber, pulpwood, or fuelwood; Christmas trees, ornamental trees, pine straw, or stumps; and other forest products are property of the U.S. Navy, and disposal of such timber resources shall be made in a manner to obtain fair market value. Proceeds from timber disposal must be applied to costs related to commercial production and sale of forest products. Timber sale proceeds are deposited in a forestry account as designated by NAVCOMPT Manual, Vol. 3. Sale contracts shall be accomplished in accordance with applicable provisions of Federal Property Management Regulations (FPMR (41 CFR) lOl-45.3), and shall include requirements for orderly harvesting, operational procedures, and payment for products to be sold. Products may be sold in lump sum or on a unit price basis. Contract fonms for bid deposits, performance bonds, bid and awards, general sale terms, and additional provisions are included in the Federal Property Management Regulations and are also available from NAVFACENGCOMHQ (Code 2042A). Conditions and provisions may be included in sales contracts by reference but must be provided to prospective bidders if requested.

(b) Technical specifications shall be made part of all timber sale contracts.

(c) Guidance for negotiating timber sale contracts is provided in Subpart 101-47.3O4-9 of the Federal Property Management Regulations (FPMR). Authority to negotiate contracts shall normally be limited to situations when the fair market value of the timber does not exceed $1,000 or when bid prices after advertising are not reasonable or have not been independently arrived at in open competition. Requests to use negotiated contracts shall be referred to the NAVF CENGCOMHQ and processed in accordance with guidance in the FPMR.

(d) Performance Bonds. A performance bond is used to guarantee proper performance by the purchaser in carrying out provisions for the timer sale contract. A performance bond is required for all timber sales contracts with an appraised value of $3,000 or more. For sales under $3,000 in appraised value, the performance bond is optional, depending on the values to be protected. When required, the perfomance bond should be at least ten (l0) percent, and not over twenty-five (25) percent of the executed contract. The size of the required performance bond must be included in the advertisement (lump sum or percentage). To satisfy the required value of the performance bond, the purchaser shall provide the Government with either:

1) Cash, negotiable bonds, or notes of the United States, certified check, cashier’s check, irrevocable letter of credit issued by a bank or other lending institution, a bank draft or note, or Post Office money order.

2) A bond issued on U.S. Standard Form 25, by a surety company holding a certificate of authority from the Secretary of the Treasury.

(e) Bid Deposits. Any certified or cashier's check, letter of credit, bank draft or note, or Post Office money order furnished by the purchaser shall be drawn to the order or benefit of the "Treasurer of the United States". A "bid deposit" (bid security) is required for all timber sales where biddng is done by sealed bids. This is essentially “earnest money" provided by the bidder at the time of bid opening. Failure by the bidder to furnish the required bid deposit, with the sealed bid, voids the bid. A bid deposit, from ten (l0) to twenty (20) percent of the total amount of the bid, may be in the form of:

1) Bid bond executed on U.S. Standard Form 24.

2) Certified check, cashier’s check, or Post Office money order made payable to the Treasurer of the United States".

The size of the required "bid deposit" (bid security) must be included in the advertisement. If the bid deposit is in the form of a certified check, cashier’s check, or Post Office money order, the successful bidder has the option of using this total value towards either:

1) Partial payment for the forest products as provided for under the contract.

2) Portion of security required for the performance bond.

(f) Government Estimate. A "Government Estimate", which becomes the minimum acceptable bid, shall he prepared and forwarded to the contracting officer at the time of advertisement. The forest products advertisements may include a minimum acceptable bid (lump sum or unit price). The Government Estimate shall not be revealed, if an acceptable bid is not received. Payment for forest products shall always be required in advance of removal of the products being purchased.

(g) Where a construction contract might be delayed by advertising a timber harvesting contract prior to advertising the construction contract, a forester shall appraise the timber to be removed from wlthin the designated limits of clearing. The construction contract shall contain provisions for reimbursing the Nivy forestry account #17(FY)1804 in the amount of the appraised value. Installations shall contact the Real Estate Division of the appropriate EFD on a case-by-case basis. The Invitition for Bids on such construction contracts must contain a provision as follows:

“Valuable Standing Timber: Bidders are advised that there is marketable standing timber, having fair market value which the Government appraises to be $(amount), on the tract described as follows: (detail boundaries). The contractor is required to pay the appraised amount to the Government within 30 days after notice to proceed has been given, to be deposited in the Navy's forestry account."

(h) In accordance with Department of Defense policy of extending every possible effort to cooperate with the Small Business Administration, all invitations for bid on timber sale contracts shall be provided to the appropriate Small Business Administration office and COMNAVFACENGCOM. When bids are opened, a copy of the bid results will also be forwarded to each office. If requested by the Small Business Administration, and agreed to by the Navv, selected sales will be set aside exclusively for bidding by "small business concerns" only. Only those invitations for bids on small business set asides should include the definition: "Small Business Concern."

7. FORMS:

The EFD and installation accounting form (Appendix 3-F) is used as the basis for calculating net revenue by the installations and for distributing a percentage of the net to states where installations are located. The annual reforestation form (Appendix 3-G) is compiled by the Army and forwarded to the U.S. Forest Service where national reforestation records are maintained. Quarterly forest management forms (Appendix 3-H) are used to monitor program implementation, with particular concern for balancing income with expenses, to ensure that funds are being invested in commercial production and sale of forest products, and to insure achievement of other program objectives.

a. Schedule for information submittal.

	Installation to EFD by:	EFD to NAVFACENGCOM by:
EFD/Installation Accounting Information	N/A	20 November
Annual Reforestation Infonmation	1 November	l0 Noveber
Forest Management Information		
1st Qtr	30 January	l0 February
2nd Qtr	30 April	l0 May
3rd Qtr	30 July	l0 August
4th Qtr	l0 November	20 November

b. Forms are available from NAVFACENGCOM HQ, Code 2042A.

GSA Standard Fonm 24, "Bid Bond"
GSA Standard Fon~ 25, "Performance Bond"
NAVFAC 7330/1 (Rev. 5-87), "EFD and Installation Accounting Fonm"
NAVFAC 1l015/2 (Rev. 5-87), "Reforestation Form"
NAVFAC 11015/3 (Rev. 5-87), "Forest Management Form"

8. ACCOUNTING PROCEDURES:

a. Proceeds collected from the dlsposal or sale of all merchantable forest products produced on a Navy installation shall be turned over to the servicing Navy accounting and finance officer. Deposits shall be made into O&M,N account #17(FY)18O4. Proceeds shall be segregated by fiscal year and used to reimburse program expenses incurred in that same fiscal year. Collection data shall accompany all deposits to include the date of deposit, installation where sale occurred, and name of individual or organization purchaslng timber.

b. States entitlements shall be calculated and be disbursed within ninety (90) days after the end of the fiscal year. Infonmation related to installition acreage in each county in each state shall be provided to each state receivlng forestry entitlements.

c. When all DOD eligible program expenses have been reimbursed and disbursements made to states, the balance of proceeds remaining in the O&M, N account shall be deposited in the DOD Reserve Account (21 x 5285) as directed by the DOD Executive Agent. Transfer of surplus funds or deposits of surplus funds shall be implemented uslng SF lO81. The DOD Reserve Account will be used in accordance with provisions set forth by 10 USC 2665 and DODINST 731O.5.

(The outline below is a guide that should be tailored to the unique needs of a particular installation. More detailed section preparation guidance is available from the appropriate EFD.)

APPENDIX A

OUTLINE, FOREST MANAGEMENT SECTION OF THE INSTALLATION NRM PLAN

1. INTRODUCTION:
   a. Purpose.
   b. Authority.
   c. Schedule for revision.
   d. Policy.

2. IMPLEMENTATION:
   a. Funding.
   b. Technical Assistance.
   c. Environmental Impact Assessments.
   d. Forestry Contracts.
   e. Forestry Equipment.
   f. Annual Increments.

3. FOREST DESCRIPTION (information should be included to the extent not covered in other sections of the installation natural resources management plan.):
   a. Woodland Suitability and Site Index.
   b. Forest History.
   c. Inventory (includes but is not limited to compartment number, stand number, age class, stocking, species, site index, current volume in appropriate units of measure, number of stems per acre, basal area, average height, form class, and annual growth increment). Inventory summary information such as forest area, timber volumes, and growth by species groups and size classes should be included.
   d. Other information that might have an impact on forest management including a description of other uses for the forested land.

4. MANAGEMENT: (See paragraph 6b, Chapter 3, Vol. II, of this manual.)
   a. Management Objectives.
   b. Management System.
      (1) Species and potential commercial products
      (2) Rotation, cutting cycle, and allowable annual cut
      (3) Silvicultural treatments
         (a) Harvesting methods
         (b) Reforestation methods
         (c) Timber stand improvement
         (d) Forest protection (e.g. fire, disease, insects)
         (e) Prescribed burning
         (f) Other

c. Natural resource protection considerations in forest management (infonmation should be included to the extent not covered in other sections of the installation natural resources management plan).

1) Control of non-point sources of water pollution
   (a) Pesticides
   (b) Erosion and sedimentation
   (c) Logging debris
   (d) Riparian zones
   (e) Other
2) Wetlands protection
3) Floodplain management
4) Endangered species protection
5) Cultural and historic site protection
6) Esthetics

d. Multiple use.

e. Road construction and maintenance.

5. WORK SCHEDULE AND STAND PRESCRIPTIONS:

6. APPENDIX (as appropriate):

a. Definitions

b. References.

c. Supporting specifications.

d. Maps.
   (1) Compartment and vicinity
   (2) Forest type, stands, and size class
   (3) Soils and woodland suitability
   (4) Firebreak location

f. Other data.

APPENDIX B
(MODEL)
ANNUAL INCREMENT FOR INSTALLATIONS WITH FORESTER(S)

FY ANNUAL INCREMENT OF THE FOREST MANAGEMENT SECTION

The installation has a total forest land area of 16,0OO acres. This annual increment schedules operations recommended in the installation forestry section completed in . The allowable annual cut for this installation has been calculated at . Forestry operations are indicated by compartments and stand numbers for the forest land areas involved, and are listed by cost account codes and funding requirements as follows:

FOREST MANAGEMENT

3B10 Timber Management - Personnel included will perform operitions such as forest inventory, planning, compartment prescriptions, general inspection and supervision, reporting, and other administrative management functions.

Estimated timber management expenses are as follows:

50%	GS-ll (3) Forester's Salary (plus 9% F.B.)	$31,OOO
	Travel	l,OOO
	Material	600
	Equipment purchases and maintenance	O
	TOTAL	$32,6OO

3B20 Reforestation - Forestry personnel will plant l5M improved Loblolly pine seedlings at 8' x 8' spacing on 2O acres in Compartment 7, Stand 5 during the first and second quarters.

Estimated expenses for reforestation are as follows:

lO%	GS-5 (4) Forestry Aide's Salary (plus 9% F.B.)	$ 1,8OO
	Other labor	4OO
	15M improved Loblolly pine seedlings @ $12M	360
	TOTAL	$ 2,560

3B30 Timber Stand Improvement - Stand 6 ln Conpartment 8, consisting of 40 acres, will be treated by forestry personnel and other station labor to release Loblolly pine from competing and overtopping low quality hardwood growth.

Estimated expenses for timber stand improvement are as follows:

5%	GS-5 (4) Forestry aide's salary (plus 9% F.B.)	$ 9OO
	Other labor	400
	Equipment and material	3OO
	TOTAL	$ 1,600

3B40 Timber Sales - The timber will be sold by contract to the highest bidder as indicated below:

Compt. No.	Stand	Estimated Vol. MBF (Scrib)	STD CDS	Acres	Target to Complete Marking
3	1,2	220	300	l00	2nd Quarter
4	1,2,3,4	396	692	319	2nd Quarter
5	1,5,6,8,9	196	441	143	3rd Quarter
14	1,2	402	394	173	3rd Quarter
	TOTALS	1,214	1,827	735	Value $59,5OO

Timber sales expenditures will include labor, materials and equipment for timber marking, cruising, scaling, appraisals, development of specifications and contracts and sales inspections.

* Estimated income this fiscal year from timber sold previous years: 14O,500
Estimated income this fiscal year fran timber sales this year: 59,500

TOTAL: 200,000

Estimated expenses for timber sales work are as follows:

75% GS-5 (4) Forestry Aide's Salary (Plus 9% F.B.)	$13,2OO
Other labor	2,400
Equipment and paint for marking timber	1,200
TOTAL	$16,8OO

385O Timber Area Access Roads - One-half mile of access road will be constructed or maintained in stands 6 and 7 of Compartment 9 to facilitate more Intensive management of the timber resource in that area.

Estimated expenses for timber area access road construction are as follaws:

5% GS-5 (4) Forestry Aide's Salary (plus 9% F.B.)	$ 9OO
Other station labor	5OO
Equipment use	4OO
TOTAL	$ 1,8OO

3B6O Fire Prevention - Construct and maintain firebreaks in October and November with tractor and plow prior to prescribed burntng. Exterior fire lanes adjacent to property boundaries will be double width. Twenty miles of temporary firebreaks will be constructed by station personnel in preparation for prescribed burning of 645 acres in Stands 1 throuqh 8 of Campartment 10. Twenty additional miles of permanent firebreaks wil1 be maintained. Estimated expenses for fire protection are as follows:

5% GS-5 (4) Forestry Aide's Salary (plus 9% F.B.)	$ 900
Other station labor	7OO
Equipment operation and maintenance	2,400
Radio maintenance	6OO
TOTAL	$ 4,6OO

Summary of Estimated Expenses

3Bl0	Timber Management	$32,600
3B20	Reforestation	2,560
3B30	Timber Stand Improvement	1,600
3B40	Timber Sales	16,800
3B5O	Timber Area Access Roads	1,800
3B6O	Fire Protection	4,600
	TOTAL	$59,960

Funding Data:

Forestry Operational Basis Funding Data - Actual and Estimated

Prior FY	Current FY	Budget FY
$56,000	$60,000	$64,000

Current FY Funding Requirement and Obligation Plan

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
Requirement	$20,OOO	$16,OOO	$14,OOO	$lO,OOO	$60,OOO
Plan	16,000	18,OOO	16,OOO	lO,OOO	60,OOO

Projected Income for current year: $200,OOO
Projected Income for budget year: $ 25,000

APPENDIX C
(MODEL)
ANNUAL INCREMENT FOR INSTALLATION WITHOUT FORESTERS

FY ANNUAL INCREMENT OF THE FOREST MANAGEMENT SECTION
FOR

The installation has a total forest land area of 1,60O acres. This annual increment schedules operations recommended in the installatlon forestry section completed in . The allowable annual cut for this installation has been calculated at . Forestry operations are indicated by compartments and stand numbers for the forest land areas involved, and are listed by cost account codes and funding requirements as follows:

FOREST MANAGEMENT

3B10 Tlmber Management - The _ DIV Staff Forester will provide professional services for marking timber, timber harvesting, timber stand improvement and other duties required in forest management operations. He will also assist in preparation of the annual increment for next fiscal year.

3B3O Timber Stand Improvement - This work will be acccmplished by contract. Part of Stands 5, 11 and 13 in Compartment II, consisting of 80 acres, will be improved by elimination of undesirable trees for crop tree release. Areas and trees to be treated will be designated by the Staff Forester and he will further assist in preparing specifications and supervising the improvement operation.

Estimated contract cost for tlmber stand improvement $ 3,20O

3B40 Timber Sales - Approximately 6O,OOO board feet of sawtimber and 8OO cords of pulpwood wlll be sold to the highest bidder. The tlmber is located in Stand # 7 Compartment III. (The sale area is 20 acres.)

Estimated expenses for timber sales work are as follows

Contract labor to assist in marking timber	$ 500
Equipment and materials	lOO
TOTAL	$ 60O

Estimated income this fiscal year from timber sold previous years: O
Estimated income this fiscal year from timber sold this year: $4,000

Total Estimated Timber Sale Receipts This Year $4,OOO

Summary of Estimated Expenses

Timber stand improvement	$ 3,2OO
Timber sales	600
TOTAL	$ 3,8OO

Estimated Timber Sale Receipts $ 4,OOO

Funding Data:

Forestry Operational Basis Funding Data - Actual and Estimated

Prior FY	Current FY	Budget FY
$4,000	$3,800	$4,200

Current FY Funding Requirement and Obligation Plan

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Total
Requirement	$ 600	$ 3,200			$ 3,800
Plan	600			3,200	3,800

Projected Income for current year	4,000
Projected Income for budget year	20,000

APPENDIX D
(MODEL)
ANNUAL INCREMENT FOR AN ENGINEERING FIELD DIVISION

Division, Naval Facilities Engineering Command

Submitted by: Date:

Cost Account 3B10 ---------- Timber Management

Operations Item	Past FY Actual	Current FY Estimated	Budget FY Estimated
1. EFD Forester (includes support Costs and fringe benefits)	$25,000	$26.000	$27,000
2 Travel	4,300	4,500	5,000
3 Materials	400	500	500
4. Other Administrative Expense clerical, contracts, etc.	2,300	2,400	2,500
5. Other Professional Services			
a. U.S. Forest Service			
b. State Division of Forestry			
c. Consulting Foresters		2,600	3,000
d. Other			
Total - Actual and Estimates	$32,000	$36,000	$38.000

NAVFAC 7330/1 (5-87)

APPENDIX F
(MODEL)
EFD AND INSTALLATION ACCOUNTING FORM

Date:
Submitted by:
EFD Forester

EFD:

Total EFD Forestry Expenses: 51,500

Installation	Sale Proceeds	For Reim Inst.* Expenses	Other Inst.** Expenses	EFD*** Expenses	HQ**** Expenses	Total Expenses
Installation 1	150,000	85,000			20,000	4,(
Installation 2	0	6,000		3,000	200	9,200
Installation 3	30,000	60,000		1,000	6,000	2,000
Installation 4	0	5,000		500	300	5,800
Installation 5	225,150	100,500		2,000	15,000	5,000
Total:	405,150	256,500		3,000	44,500	11,500
Marine Corps Inst 1			4,500	2,000		
Marine Corps Inst 2				5,000		
Total:			4,000	7,000		

Total of all EFD Expenses: 51,500

* Expenses for forestry work at the installation that is reimbursed with forestry funds.

** Expenses for forestry work at the installation that were not reimbursed with forestry funds.

*** All EFD forestry expenses must be attributed to installations including Marine Corps installations where applicable.

**** Headquarters Expenses and Total Expenses will be calculated at Headquarters.

NAVFAC 7330/1 (5-87)

EFD and Installation Accounting Form

Date:

Submitted by:

EFD Forester

EFD:

Total EFD Forestry Expenses:

Installation	Proceeds	For Reim Inst.* Expenses	Other Inst.** Expenses	EFD*** Expenses	HQ**** Expenses	Total Expenses
Installation 1						
Installation 2						
Installation 3						
Installation 4						
Installation 5						
Total:						
Marine Corps Inst 1						
Marine Corps Inst 2						
Total:						

* Expenses for forestry work at the installation that is reimbursed with forestry funds.

** Expenses for forestry work at the installation that were not reimbursed with forestry funds.

*** All EFD forestry expenses must be attributed to installations including Marine Corps installations where applicable.

**** Headquarters Expenses and Total Expenses will be calculated at Headquarters.

NAVFAC llOl5/2 (5-87)

APPENDIX G

ANNUAL REFORESTATION FORM

From: Instal1ation

To: EFD

Sub;: Reforestation Information FY

Acres Reforested
Type of Planting
Forest - Department of the Navy

State	Installation	Tree Planting	Direct Seeding	Windbreak	Total
State	Installation	3O5	25	O	330
	TOTALS	305	25	0	330

Signature
(EFD or Installation Forester)

Date

NAVFAC 11015/2 (5-87)

ANNUAL REFORESTATION FORM - FY_

From:
To:
Subj: REFORESTATION INFORMATION FY

Acres Reforested
Type of Planting
Forest - Department of the Navy

State	Installation	Tree Planting	Direct Seeding	Windbreak	Total

TOTALS

Signature
(EFD or Installation Forester)

Date

CHAPTER 4: FISH AND WILDLIFE MANAGEMENT

(Acknowledgment: Appendixes F through K are primarily a synthesis of concepts,
language, and organization presented in Air Force Regulation 127-l5.)

1. SCOPE:

This chapter sets forth the authority, responsibilities, and procedures for the conservation and management of fish and wildlife under the jurisdiction of the Chief of Naval Operations. The fish and wildlife program includes fisheries management, management of game and non-game species, threatened/endangered species protection, bird/animal aircraft strike hazards (BASH) reduction, urban wildlife management, and control of federal, exotic, and other problem animals.

2. REFERENCES:

a. Public Law 65-186, Migratory Bird Treaty Act as amended (16 USC 7O3)
b. Public Law 85-337, Military Reservations and Facilities: Hunting, Fishing and Trapping (lO USC 2671)
c. Public Law 85-624, Fish and Wildlife Coordination Act as amended (16USC661 et seq.)
d. Public Law 86-70, Bald Eagle Protection Act as amended (16 USC 668)
e. Public Law 86-797, Sikes Act as amended (16 USC 670a through o)
f. Public Law 89-304, Anadromous Fish Conservation Act (16 USC 757)
g. Public Law 89-669, Fish and Wildlife Conservation Act (16 USC 668 et seq.)
h. Public Law 91-190, National Environmental Policy Act (42 USC 4321, 4331 through 4335, and 4341 through 4347)
i. Public Law 92-522, Marine Mammal Protection Act (16 USC 14O2-14O7)
j. Public Law 93-2OS, Endangered Species Act as amended (16 USC 1531 et. seq.)
k. Public Law 96-366, Non-game Act (16 USC 29Ol-2911)
1. NAVFAC MO-lOO.3, Feb 82, Fish and Wildlife Management
m. Memorandum of Understanding between the Department of the Interior and the Department of Defense for the Conservation and Management of Fish and Wildlife Resources on Military Installations, 7 Apr 78
n. Memorandum of Agreement between the U.S. Fish and Wildlife Service and the Naval Facilities Engineering Command, 13 Nov 85

3. AUTHORITY:

The Sikes Act as amended, requires each military department to ensure services are provided which are necessary for management of fish and wildlife resources on each installation, to provide their personnel with professional training in fish and wildlife management, and to give priority to contracting work with federal and state agencies having responsibility for conservation or management of fish and wildlife. It further requires that installation fish and wildlife management be carried out in accordance with a cooperative plan mutually agreed upon by the Secretary of Defense, the Secretary of the Interior, and the state agency designated by the host state.

The Secretary of Defense, through DODDIR 4700.1, established a program for fish and wildlife management to implement the provisions of lO USC 2671 and 16 USC 670a through o (the Sikes Act, as amended). The

program applies to all Navy commands and personnel, and covers Navy installations on United

States soil which contain land and water areas suitable for conservation and management of fish and wildlife resources. Title lO USC 2671 regulates hunting, fishing, and trapping on military reservations and facilities. Additional authority is contained in the public laws referenced in paragraph 2, of this chapter.

4. DISCUSSION:

Most land and water areas serve as suitable or potential habitat for fish or wildlife. The objective of the Navy's fish and wildlife management program is a continuing and progressive program of fish and wildlife habitat management and enhancement, which complies with current and accepted scientific practices and is integrated with the total natural resources program. The fish and wildlife program shall be conducted in conformance with various Public Laws and Executive Orders governing fish and wildlife resources on federal properties. In addition to meeting legal requirements, a fish and wildlife program can provide excellent public relations and recreational opportunities and can stimulate community support for the military presence. Efforts to involve the community in the fish and wildlife program through hunting and fishing, bird watching, nature tours, nature study, and similar programs are encouraged.

5. RESPONSIBILITIES:

a. Each installation with land or water areas which are suitable or potential habitat for fish or wildlife shall:

(1) Have active and progressive programs for the preservation and management of federal and/or state listed threatened and endangered species and their habitats; for the conservation, enhancement, and management of fish, wildlife, and desirable or protected plant species naturally occurring on the installation; and, for the control and management of feral animals.

(2) Ensure preparation of a cooperative agreement with the U.S. Fish and Widlife Service, appropriate state fish and game departments, and other agencies (such as the National Marine and Fisheries Serv1ce) as appropriate, for conservation and management of fish and wildlife resources.

(3) Ensure all parties of the cooperative agreement coordinate at least once a year and dlscuss matters that relate to conserving and managing fish and wildlife resources on, or affecting, the property administered by the installation.

(4) Implement a fish and wildlife management section prepared according to the outline 1n Appendix 4-A. (See paragraphs 7e and 7h, Chapter 1, of this manual.)

(5) Budget for and fund the fish and wildlife program.

(6) Identify and protect threatened and endangered species listed pursuant to the Endangered Species Act.

(7) Ensure consultations are conducted, as required under Section 7 of the Endangered Species Act, for any action which "may effect" a threatened or endangered species or its designated critical habitat. Coordinate threatened/endangered species consultations with the appropriate EFD. Consultations shall be initiated and managed by the appropriate EFD, if the installation does not have personnel with expertise in wildlife biology.

(8) Ensure adequate access for public recreational uses (when appropriate).

(9) Ensure adequate access for federal and state natural resources conservation officials.

(lO) Ensure compliance with existing state and federal fish and game laws.

(11) Ensure compliance with federal and state hunting, fishing, and trapping permit requirements.

(12) Prepare and submit an annual obligation authority request to use fee collection funds (if collected) to the appropriate EFD for approval by 1 June each year. A list of proposed projects for which the funds will be used shall accompany the request.

(13) Ensure submittal of Fish and Wildlife Cash Collection vouchers (NAVCOMPT Form 2277) to the installation accounting activity and the appropriate EFD.

b. In order to minimize bird-aircraft strike hazard (BASH) occurrences Commanders and Commanding Officers of Naval Air Facilities and Istallations shall:

(1) Develop, establish, and maintain a program to reduce potential for collisions between aircraft and birds or other animals in their air facility environment.

(2) Prepare a written BASH plan, as outlined in Appendix 4-F, and have the plan certified as technically adequate by the appropriate EFD. (See paragraphs 7b and 7h, Chapter 1, Vol. II, of this manual.)

(3) Ensure procedures are established for the immediate exchange of information between ground agencies and aircrews concerning the existence and location of birds which could pose a hazard, as addressed in Appendix 4-G.

(4) Request BASH program review and technical assistance from the appropriate EFD when a strike hazard potential is identified.

c. Naval Facilities Engineering Canmand Engineering Field Divisions shall:

(1) Provide technical services to installations in developing and managing fish and wildlife conservation and management programs.

(2) Provide technical assistance to air facilities regarding strike hazard reduction to include:

(a) Preparation of strike hazard reduction plans.

(b) Development of techniques for bird and other animal control in the airfield environment and in aircraft maintenance structures.

(c) Evaluation of proposed and existing 1ow level routes, landfill sites, weapons ranges, sewage plants, and wildlife refuges for strike increase potential.

(d) An on site BASH review of Naval Air Stations with airfield management responsibilities no less than every two years.

(e) Identification of bird strike remains.

(f) Review of agricultural/grazing outleasing programs and wildlife and land management plans for strike reduction considerations.

(g) Preparation and coordination of shore installation depredation permit applications.

(h) Requests for State Fish and Game Agency, U.S. Fish and Wildlife Service, and U.S. Department of Agriculture assistance and cooperation to reduce strike potential.

(3) Establish and maintain liaison and working relationships with, and obtain supplemental professional services from federal, state, and private agencies and organizations having primary missions in the area of fish and wildlife management.

(4) Provide assistance to installations in the preparation of cooperative agreements, management plans, annual increments, research studies and inventories, and other installation fish and wildlife management reports.

(5) Approve/disapprove annual obligation authority requests for expenditure of hunting, fishing, trapping, and shellfish harvesting fees and forward approved requests to NAVfACENGCOMHQ by 15 June in accordance with NAVCOMPT requirements and Appendix 4-C.

(6) Assist and monitor installation management of fish and wildlife fee collection programs.

(7) Initiate and manage consultations, required under Section 7 of the Endangered Species Act, with the appropriate federal agencies.

(8) Conduct technical reviews of installation fish and wildlife management programs, at least every two years, to ensure that approved fish and wildlife management sections are being followed to the best advantage of the installation.

d. Major claimants and intermediate commands shall require, budqet for ensure, and assist subordinate installation fish and wildlife management planning and program implementation.

e. Naval Facilities Engineering Command Headquarters shall:

(1) Provide leadership, technical assistance, and administrative coordination to ensure effective implementation of the fish and wildlife management program.

(2) Establish, coordinate, and promulgate fish and wildlife management guidance, policy, and services required.

(3) Issue appropriate instructions.

(4) Establish EFD annual workload guidance and approve EFD annual operating plans reaarding fish and wildlife management program requirements.

(5) Approve/disapprove annual request for installation authority to use fish and wildlife user fee collection receipts.

(6) Coordinate with other federal agencies involved in bird/aircraft strike hazard (BASH) reduction.

6. TECHNICAL REQUIREMENTS AND CONSIDERATIONS:

a. Installation Classifications. DODDIR 47OO.l requires that the suitability of a military installation for fish and wildlife management shall be determined after consultation with the U.S. Fish and Wildlife Service and the host state. This informal consultation shall be accomplished by the appropriate EFD.

b. Fish and Wildlife Management Sections of Natural Resources Management Plans. All fish and wildlife proqrams shall be carried out in accordance with approved fish and wildlife management sections which are reviewed annually and updated as needed to remain current. Management sections shall be based on pertinent resource surveys and shall be developed and implemented by qualified natural resources personnel (see paragraphs 7b and 7h, Chapter 1, Vol. II, of this manual). The section must be developed in coordination with the federal, state, and 1ocal agencies with fish and wildlife responsibility and shall remain available for review in their entirety by these agencies and the public. (See paragraph 6, of this Chapter.) All fish and wildlife management sections are to be approved as technically adequate by the appropriate EFD. Fish and wildlife management sections are to include, where appropriate, individual species management plans covering all threatened and endanaered species occurring on the installation and all species that are to be hunted, fished, or trapped. Habitat infonnation c ontained in fish and wildlife management sections will be summarized and included as part of the installation master plan. Fish and wildlife management sections will include units covering the following items, as applicable:

(1) Threatened and endangered species management.

(2) Management of game and non-game specles.

(3) Fisheries management, including shellfish, anadranous fish, freshwater fish, etc.

(4) Habitat management, including restoration, conservation, improvement, and modification of fish and wildlife habitat.

(5) Management of hunting, fishing, and trapplng programs.

(6) Protection of marine mammals.

(7) Urban wildlife management.

(8) Control of feral and exotic animals.

(9) Individual species management plans.

(lO) References to portions of forest and land management sections addressing forest and range management where necessary for support of wildlife.

(11) Wildlife preserves or refuges.

(12) Scientific research.

(13) Off-road vehicle control. (This may be addressed hy referencing the appropriate portion of the installation outdoor recreation management section).

(14) Bird-aircraft strike hazard (BASH) reduction.

Further guidance for fish and wildlife management is available ln NAVFAC MO-lOO.3. Detailed guidance regardlng preparation of a flsh and wildlife management section is provided in Appendix 4-A.

c. Cooperative Agreements. Appendix 4-B is a model cooperative agreement designed to carry out a program of plannlng, development, maintenance, and coordination of fish and wildlife conservation and rehabilitation on military reservations. Agreements will be signed by the installation Commanding Officer or Officer in Charge, the Regional Director or Area Manager of the U.S. Fish and Wildlife Service, and the appropriate state flsh and game official(s). In many instances an aqreement should also be signed by the appropriate EFD Commander/Commanding Officer if the EFD will play a significant role in the development and implementation of the installation's fish and wildlife program. Agreements may also be signed by the National Marine Fisheries Service, if appropriate. Agreements shall provide for the collection of special hunting, fishing, and trapping fees when appropriate (see paragraph d below), and will address public access for hunting and fishing. The installation's determination regarding public access shall be included and explained in the agreement.

d. Cooperative Plans. A “cooperative plan" is required by the Sikes Act in order for an installation to carry out" ... a program of planning for, and the development, maintenance, and coordination of wildlife, fish, and game conservation and rehabilitation ...” . A cooperative agreement and a management section together constitute a cooperative plan for fish and wildlife management pursuant to the Sikes Act. The management section must be coordinated with the cooperating agencies and attached to each cooperating agency's copy of the agreement. The Sikes Act further requires that this cooperative plan be reviewed by all of the parties as to "operation and effect", not less than every five (5) years. Navy policy requires a review, and necessary revision(s), by the cooperators annually. The annual review by cooperators may be accomplished without meeting (i.e., independently) but with telephone or letter coordination. The five (5) year review required by the Sikes Act should be accomplished during a meeting with all the cooperators represented.

e. Compatibility with Cooperative Plan. The Sikes Act prohibits sale of forest products and leasing of land for any use unless the effects of the sale or leasing are “... compatible with the purposes of the [cooPerative] plan”.

f. Hunting and Fishing. As required by 10 USC 2671 and 16 USC 67Oa through o, all hunting, fishing, and trapping (including commercial harvesting) at each Navy installation in a state or territory be in accordance with the fish and game laws of that state or territory in which it is located as well as with appropriate federal laws and regulations. Each installation will require appropriate state licenses and stamps as well as applicable federal stamps for hunting, fishing, or trapping on the installation; however, a license may be required of a member of the Armed Forces only if the state authorizes the issuance of a license to a member on active duty for a period of more than thirty (30) days at an installation within that state without regard to residence requirements, and on terms not less favorable than the terms on which a license is issued to residents of that state. Violations of these basic requirements or other state fish and game laws are punishable by the state according to its laws. Whenever hunting, fishing, or trapping is allowed on Navy installations, enforcement of wildlife laws shall be carried out according to the fish and wildlife section (of the installation NRM plan) by properly trained enforcement officials under the direction of the wildlife manager (see paragraph 8b, of this chapter). Recreational aspects of hunting and fishing are addressed in Chapter S, Vol. II, of this manual.

g. Fee Collection. In addition to requiring appropriate federal and state licenses/stamps, installations may collect user fees from and issue permits to authorized persons who hunt, fish (including harvesting shellfish commercially and for recreation), or trap on the installation. As required by the Sikes Act, such a program shall be implemented in accordance with a cooperative plan as addressed in paragraph 6d, above. An approved fish and wildlife management section, when completed, will be an integral part of the agreement (and together with the agreement will compose a cooperative plan pursuant to the Sikes Act.) A fee schedule shall be provided as an attachment to the agreement. The same fee shall be charged for a particular use to all

users at a particular installation, except senior citizens, children, and the physically handicapped. All funds collected by any installation office or staff agency, for hunting, fishing, and trappinq, shall be deposited to the special fund receipt account 175O95. At the time of deposlt, a cash collection voucher (NAVCOMPT Form 2277) shall be prepared. The NAVCOMPT Form 2277 shall be provided to the installation's allotment accounting activity. Copies of each NAVCOMPT Form 2277 shall be provided to:

(1) The installation natural resources (fish and wildlife) management office.

(2) The appropriate EFD, natural resources branch.

(3) NAVFACENGCOMHQ (Code 2042), 2OO Stovall Street, Alexandria, VA 22332-2300.

h. Use of Fee Collection Funds. Fee collection funds shall only be used for protection, conservation, and management of fish and wildlife, including habitat improvements and related actions on the installation where collected.

(1) Installations desiring to use fish and wildlife fee collection funds shall complete and submit Appendix 4-C, before 1 June each year, to their appropriate EFD. Appendix 4-D provides examples of types of protects accomplished with fee collection funds.

(2) The EFD shall forward approved requests, by l5 June each year, to NAVFACENGCOMHQ (Code 2O42). Upon authorization by the Comptroller of the Navy, NAYFACENGCOMHQ will issue obligation authority, using NAVCOMPT Form 372, to participating installations. Obligation authority is llmited to the amount on the NAVCOMPT Fonm 372 or actual fee collections, whichever is less. NAVFACENGCOMHQ will forward copies of each NAVCQMPT Form 372 to the appropriate EFD and the Navy Regional Finance Center (NRFC), Washington, DC.

(3) Collections may be accumulated and expended in later years.

(4) The installation natural resources management office shall ensure that copies of commitment and obligation documentation for work or materials purchased with fee collection funds are sent to:

(a) The appropriate EFD, natural resources branch.

(b) NAVFACENGCOMHQ (Code 2O42), 2OO Stovall Street, Alexandria, VA 22332-2300.

f. Accounting for Fee Collection Funds.

(1) Installations receiving obligation authority (via NAVCOMPT Form 372) shall account for the collection and expenditure of these funds in accordance with NAVCOMPT Manual, paragraphs 032114, O3~5Ol, O43121, and 074825.

(2) The installation accounting activity is responslble for preparing a Monthly Status of Funds Authorization (NAVCOMPT Form 2025) and submitting it promptly to the NRFC (Code 66), Washington, DC 2O371-560O. NAVCOMPT Manual Volume3, paragraph O395Ol, addresses instructions for preparing this form. Appendix 4-E is a NAVCOMPT Form 2O25 annotated with preparation instructions in the upper portion of each column. The installation accounting activity should use this annotated form, to ensure the correct information is provided in each column. The importance of accurately preparing the NAVCOMPT Form 2025 cannot be over emphasized. The completed NAVCOMPT Form 2025 is the only accounting document used by the NRFC in determining cumulative uncommitted funds available to an installation. Copies of each NAVCOMPT Form 2025 shall be sent by the installation accounting activity to:

(a) The installation natural resources (fish and wildlife) management office.

(b) The appropriate EFD, natural resources branch.

(c) NAVFACENGCOMHQ (Code 2O42), 200 Stovall Street, Alexandria, VA 22332-23OO.

j. Rod and Gun Clubs. While the organization of rod and gun clubs or other conservation groups on installations is desirable and will contribute to good fish and wildlife programs, the membership in such organizations shall not include the exclusive privilege of hunting, fishing, or trapping on any installation.

k. Protection of Threatened/Endangered Species.

(1) Any action which may affect (positively or negatively) the continued existence of a federally listed threatened or endangered species must undergo consultation with the U.S. Fish and Wildlife Service or National Marine Fisheries Service as stated in Section 7 of the Endangered Species Act. (The National Marine Fisheries Service has jurisdiction over threatened and endangered marine mammals, marine reptiles, and marine fishes, whereas the U.S. Fish and Wildlife Service has jurisdiction over the remaining threatened and endangered species. For certain species there is shared jurisdiction). For actions that may affect proposed species, an informal consultation is required. The purpose of this requirement is to identify and resolve potential conflicts between an action and the protection of proposed species or proposed critical habitat at an early point in the decision-making process. Programs to protect threatened and endangered species and their habitats will be budgeted and supported by the installation and their major claimants. The endangered species program shall be coordinated with the U.S. Fish and Wildlife Service or National Marine Fisheries Service, as

appropriate. Informal coordination with state fish and wildlife agencies is also recommended. Species proposed for listing or under review for proposed listing are to be included in the endangered species program.

(2) Each installation shall conduct surveys as necessary to document the presence of threatened or endangered species, to identify existing (and periodically or indirectly utilized) habitat for these species or properties under their jurisdiction, and to assist in the determination of whether any such habitats should be considered for designation as "Critical Habitat". Surveys shall also be conducted to determine presence and distribution of proposed threatened or endangered species, species under review for threatened or endangered status (Category 1 and 2 candidate species), and state listed rare and endangered species.

(3) All echelons of command shall take appropriate action necessary to assure that actions authorized, funded, or carried out do not jeopardize the continued existence of such threatened and endangered species.

(4) All echelons of command with land management responsibilities shall ensure that the installation master plan and other appropriate documents include a special section identifying endangered species locations, summarizing management programs, and further ensure that actions described in these documents fully consider and avoid, to the maximum extent, any actions that are likely to impact these species.

(5) Installation, intermediate command, major claimant, and the appropriate EFD natural resources program managers shall obtain state lists and work with state agencies to protect state listed species on the installation.

1. Non-Game Species and Urban Wildlife.

(1) Non-game species and urban wildlife include native fish, wildlife, and plants other than game or threatened/endangered species. Examples of non-game use of wildlife (including plants) include birdwatching, observing wildflowers, collecting wild edibles, shelling, tracking animals, wildlife photography, butterfly collecting, and other ways to enjoy or study nature.

(2) Urban wildlife management should emphasize stability of wildlife habitats present so as to create opportunities to attract desirable species for non-consumptive uses while at the same time manipulating the habitat to draw problem wildlife away from work and housing areas. Prevention of negative human-urban wildlife interactions, while maintaining viable populations and minimizing habitat impacts, are the principal goals of urban wildlife management.

m. Bird/Animal Aircraft Strike Hazard (BASH) Reduction. Each year the Navy experiences hundreds of collisions between birds and aircraft causing millons of dollars in damage, several injuries, and hundreds of aborted or delayed missions. The objective of the BASH program is to reduce the potential for collisions between aircraft and birds or other animals and to minimize damage and injuries when collisions occur. The program encompasses all actions which may identify, reduce, or eliminate bird or other animal hazards to aviation. Appendix A-F provides detailed guidance for preparation of an installation BASH reduction plan. Appendix 4-G identifies aircraft operational procedures to reduce BASH potential. Appendix 4-H provides guidelines to decrease airfield attractiveness to birds. Appendix 4-I addresses pest management considerations of an installation’s BASH program. Appendix 4-J provides guidelines for dispersing birds on the airfield. Appendix 4-K provides specific species information for BASH programs. Appendix 4-L is a model bird sighting report.

n. Control of Feral, Exotic, and Other Problem Species. Animal damage control shall be implemented as justified by sound ecosystem management, health and safety considerations, conflicts with the military mission, and by the requirements of federal and state laws. Control should be limited t(t offending individuals or particular groups. Control based on habitat management is the preferred method. Other approaches of control include: deliberate removal of animals by shooting, poisoning, or trapping; biological control by natural predators; chemical control by either killing animals or keeping animals away with a repellent; or, physical control by scaring away animals with various devices or excluding them from a site with fences. The decision regarding method(s) of animal damage control shall be based upon the recommendations of a professional wildlife biologist. Such actions shall be coordinated with the appropriate state agency, USDA Animal and Plant Health Inspection Service, and U.S. Fish and Wildlife Service or National Marine Fisheries Service, as appropriate, to ensure the appropriate permits are obtained and the appropriate methods are used.

o. Special Considerations. Special consideration shall be addressed to the following areas:

(1) Marine Mammals. The taking, harassment, or importation of certain species and population stocks of marine mammals shall be prevented in accordance with the Marine Mammal Protection Act (Public Law 92-522). Efforts are to be made to protect the rookeries, mating grounds, and areas of similar significance for each species of marine mammals from the adverse effect of man's action.

(2) Anadromous Fishes. Anadromous fishery resources shall be conserved, developed, and enhanced in accordance with The Anadrcmous Fish Conservation Act (16 USC 755-76Ol).

(3) Migratory Birds Treaty Act. Such licenses and permits as required by the Act do not relieve the holders of the requirements of the Migratory Bird Hunting Stamp Act, as amended, that generally requires that no person sixteen years of age or older shall take any migratory waterfowl unless at the time of such taking, he or she carries a valid, unexpired Federal Migratory Bird Hunting Stamp. Under Public Law 65-186, the Migratory Bird Treaty Act, it is unlawful for anyone to take or harm a migratory bird, its eggs, nests, or young without the appropriate permit. Construction, repairs, and other such actions can harm nests, eggs, or individuals. A depredation permit is required before any person may take, possess, transport migratory birds, or disturb the nest, eggs, or young for depredation purposes. Further information regarding depredation of migratory birds is available from the appropriate EFD.

(4) Eagles. The Eagle Protection Act governs the taking, possession, and transportation of bald and golden eagles. The import, export, purchase sale, or barter of golden or bald eagles, their parts, nests, or eggs is also prohibited by this Act.

7. FINANCIAL SUPPORT:

Those installations with fee collection fishing, hunting, and trapping programs must utilize the funds generated from these programs to support the fish and wildlife program. In most cases, these funds will not be sufficient to support the entire fish and wildlife program, particularly when threatened and endangered species, non-game management, and community programs are considered. Requirements for additional funds are to be included in the regular installation O&M or RDT&E budget requests. Installations that do not have such revenue generating programs due to security limitations or limited game resources, nevertheless will generally have other valuable fish and wildlife resources to manage and will budget for and fund these programs through the regular installation O&M or RDT&E budget requests.
Non-appropriated funds may be used to supplement appropriated funds when such funds are not available or are insufficient to meet the full funding requirement. Major claimants will provide to the installations the necessary funding to support the fish and wildlife program. Major claimants will identify their fiscal year funding requirement within the operations and maintenance (O&M) appropriation budget.

8. PERSONNEL SUPPORT:

a. Fish and Wildlife Program Manager. An effective fish and wildlife management program cannot be implemented without the availability of qualified (scientifically trained) personnel. All installations with resources sufficient to warrant development of a fish and wildlife program shall designate a program manager. This individual may be the same individual designated as the installation natural resources program manager/coordinator as required by OPNAVINST 5090.1 (see paragraph 4, Chapter 1, Vol. II, of this manual). Two or more small installations, which are physically located near each other, that do not have the need for a full-time position may wish to
share the funding and equippinq of such a position. This program manager should have the equivalent of a B.S. in Widlife Biology or a similar natural resources profession. Staff memhers under the supervision of the program

manager should be employed as warranted by program requirements.

b. Game Wardens. Enforcement of laws protecting or conserving natural resources is an integral part of an installation's natural resources program and shall be implemented ln accordance with the natural resources management plan. On those installations with potential poaching problems, extended harvest seasons (e.g., fin or shellfishing seasons in excess of five (5) months in duration), high degree of public access, etc., the expansion of the fish and wildlife program coordinator's staff with one or more game wardens is recommended. Game wardens may be personnel currently on staff in another department (e.g., security), biological technicians deputized as wardens, personnel directly assigned to the fish and wildlife coordinator as wardens, or some combination of these. In all cases, those personnel assigned game warden duties must have specialized training to effectively enforce wildlife regulations since knowledge of biology, recognition of species, awareness of hunting methods, and understanding of sportsman and poachers are necessary to adequately protect fish and wildlife resources. Additionally, game warden officials should report directly to the fish and wildlife manager or coordinator for duty assignments to ensure wildlife enforcement is perfonned in accordance with provisions of the instal1ations natural resources management plan.

(The outline below is a guide that should be tailored to the unique needs of a particular installation. More detailed section preparation guidance is available from the appropriate EFD.)

APPENDIX A

FISH AND WILDLIFE MANAGEMENT SECTION OUTLINE

1. FOREWORD:

a. Purpose. The purpose should include the concepts of providing a plan for protecting, conserving, and managing fish and wildlife resources under the principles of multiple use and sustained yield.

b. Management Objectives.

(1) Primary.

(a) Protect, conserve, and manage the fish and wildlife, and threatened and endangered species as vital elements of an optimum natural resources program.

(b) Utilize and care for natural resources in the combination best serving the present and future needs of the United States and its people. Habitat management will be the basis on which fish and wildlife programs are conducted, with artificial stocking (for fish only) and predator control (for threatened/endangered! species protection and in some circumstances, for livestock damage control only) serving only minor roles in the management scheme. Put-and-take programs for consumptive recreation, other than fishing should not be developed, enhanced, or continued.

(2) Secondary. These subordinate objectives should identify the benefits to be provided, for example: protecting threatened and endangered species' habitat; providing quality outdoor recreation experiences; environmental enhancement; keeping wildlife damage to a minimum; reducing the Bird/Deer Aircraft Strike Hazard (BASH); etc.

(3) Tertiary. These are short-term objectives. They should include habitat type, species of concern associated, the acreage for which the management, conservation or treatment is planned, motivation and justification for the action, expected results, and means of evaluating success.

c. Revision. This management section will be revised as required to remain current.

d. Credit Statement for Cooperating Indicate credit to cooperative agencies for assistance in preparation of the management section.

2. INRODUCTION:

a. Description.

(1) Location.

(2) Acreage of land and water resources for fish and wildlife management.

(3) Principal species list (common and scientific names). These may be included in an appendix.

(a) Threatened and endangered plants and wildlife. Include those species which are: federally listed, proposed, and/or candidate (categories1 and 2) or state listed, proposed, and/or protected. Include those plant and animal species listed as sensitive by adjoining land management agencies (if any).

(b) Fish, wildlife, and plant species indigenous to the installation. This may identify species groups in lieu of indigenous species names for non-game species, plants, and invertebrates. Characterize indigenous species diversity as well representative of habitat and geographic area; moderately representative; or, poorly representative. If not well representative, indicate cause of low diversity (e.g. pollution, eroded soils, exotic species, or at the margin of its natural range).

(c) Fish, wildlife, and plant species introduced to the installation.

b. History of the installation fish and wildlife program and past land use as it pertains to fish and wildlife management.

3. RESOURCE INVENTORY:

a. Describe a11 fish and wildlife aspects of vegetation and habitat types, including riparian zones, fish habitats, and any unusual, sensitive, or protected habitats such as unusual plant assemblages, unusual vertebrate or invertebrate animal assemblages, old growth forests, wetlands, etc. Rather than repete any descriptions already in existing sections of a natural resources management plan, refer the reader to the pertinent management section. Describe wildlife value, such as a description of the present condition (e.g. highly disturbed, early successional stage), species occurrence, habitat quality (e.g. good escape cover) by species or group of species, limiting factors, and habitat management needs. Classify wetlands according to U.S. Fish and Wildlife Service/Office of Biological Services publication 79/31.

b. Species Management. For those species or groups of species for which specific management programs are needed (upland game, raptors, furbearers, etc.), provide specific information about the population, its distribution, habitat use and condition, quality of available and preferred habitats, limiting factors, impacts or disturbances from human activities (including military mission, outdoor recreation, and other natural resources programs), management needs, and potential habitat manipulations. Include discussions based on needs of species or groups, ability of existing habitat to meet these requirements, the current vegetation successional stage, and anticipated changes in these factors due to succession or land use practices.

c. Discuss the effects of existing military programs and natural resource uses on quality of the habitats.

4. THREATENED AND ENDANGERED SPECIES:

a. Provide a unit on each threatened and endangered species or group of such species using the same habitat on the installation. Include federally listed, proposed, and/or candidate (categories 1 and 2); state listed, proposed, and/or protected; and any other species considered rare, unique, or sensitive by other agencies or private conservation organizations. Discuss the extent of known, suspected, or potential occurrence at the installation. Describe the species seasons of occurrence, their habitat requirements (e.q. during nesting, feeding, resting), and its condition and trend. Discuss: limiting factors, known or potential; disturbance factors; protection requirements; and habitat management, protection, or improvement needs. Discuss activities which could effect (positive and negative) the species and identify any requirement for consultation with the USFWS.

b. Provide a unit on management and protection needs of other sensitive species (species determined as sensitive by other adjoining land management agencies.)

5. HABITAT DEVELOPMENT

a. Upland Habitat Manipulations.

(1) Summarize by habitat type any existing manipulations to be maintained; quantities are to be reported in English and metric units.

(2) Describe and quantify planned manipulations that are to be implemented to reduce the adverse impact of the limiting factors for each habitat. Limit manipulations so as to minimize possible effects on associated species.

b. Wetland Habitat Manipulations.

(1) Identify, quantify, and summarize the types of existing manipulations to be maintained.

(2) Describe and quantify any planned manipulations that might be implemented to reduce the adverse impact of limiting factors for the various species of concern (ie. individual endangered species, game species, other species with specific legal protection, or specific management goals.) Indicate possible effects on associated species.

c. All proposed habitat manipulations must be fully justified. Justification will include planning habitat manipulations to reduce the impact of limiting factors that are important to the species of concern, and associated species. Long-term as well as short-term effects of habitat management on fish and wildlife must be considered.

6. NON-CONSUMPTIVE USES OF WILDLIFE AND PLANTS:

a. Management. Describe management actions designed to promote the non-consumptive uses of wildlife in unimproved (preserves, etc.), semi-improved (agricultural, etc,) and urban areas. These actions include, for example, the establishment of landscape vegetation that is both aesthetically pleasing and beneficial to wildlife in urban areas and hedgerows or shelterbelts in agricultural areas, providing wildlife migration corridors, controlling cowbird parasitism of songbird nests, protecting old growth forests, clear cutting very small irregular areas, utilizing suitable forestry rotation periods, identifying and protecting species assemblages, reintroducing groups of species, and maintaining large areas with natural habitat heterogeneity.

b. Uses. Examples of uses for non-game species of wildlife and plants include: birdwatching, observing wildflowers, collecting wild edibles, shelling, botanizing, tracking animals, wildlife photography, butterfly collecting, and the innumerable other ways to study nature. Each of these uses require that essentially all subject species be present which are indigenous to the area. A birdwatcher, for example, wants to sight all indigenous birds, not just the common ones. Because of the need to manage so many non-game vertebrates, invertebrates, and plants, application of general management actions (suitable for all indigenous species) is more useful and effective than management on a species by species basis. It is not efficient to manage most non-game species in the traditional manner of inventory, research into life-cycle, identification of threats, and taking appropriate measures such as constructing blue bird houses or bird feeders and similar actions to protect one species at a time.

7. HUNTING, FISHING, AND TRAPPING:

a. Management. An important purpose of the fish and wildlife management program on many installations is to identify surplus crops of fish and game species which may become available for hunting, fishing and trapping. These activities serve as acceptable methods of population control while providing a source of outdoor recreation. This type of outdoor recreation has been continuous part of this country's national heritage. Therefore, hunting, fishing and trapping will be carried out ln accordance wlth recommendations from a qualified wildlife biologist, and state and federal laws. If the installation has, or will have, an outdoor recreation section, a reference

should be made to recreational aspects of hunting and fishing which are addressed in that management section.

b. Fees and Permits. List appropriate state and federal licenses and stamps required for hunting, fishing, and trapping on Navy installations. All installation user fees collected shall be used for fish and wildlife management work on the installation where collected, according to approved budgeting authorizations and procedures.

8. FISH AND WILDLIFE STOCKING AND CONTROL:

a. Stocking for fish only). Give full justification for all stocking programs; include the advice of professional biologists consulted. Identify each species stocked, the rate of stocking (numbers stocked), stocking schedule (timing of release), and costs.

b. Control. Discuss fish or wildlife associated problems and damage. Include separate units for Bird/Wildlife Aircraft Strike Hazard (BASH) reduction and urban wildlife control. A unit on BASH reduction may initially only recognize the hazard and identify the need for a more expanded unit regarding BASH management. Discuss how to control and prevent damage caused by native (including feral) and exotic species. Examples of species that may need control include hydrilla, beavers, and the giant African snail. Include the coordinating state and federal agencies and the cooperation received. Indicate methods of evaluating success and as many possible alternative control and damage prevention methods as possible. A checklist with points of contact should be developed to deal with disease outbreaks.

9. WORK SCHEDULING:

Schedule, by fiscal year, the direct habitat manipulations planned for the next five years. Estimate the cost of such manipulations. These manipulations must have been discussed ~n paragraphs S, 6, and 7 above. This information will be the basis for each year's annual increment.

10. MULTIPLE USE COORDINATION:

a. Summarize planned or proposed large scale habitat modifications (such as forest cutting, grazing changes, burning, and construction activities) and discuss effects on fish and wildlife resources.

b. Discuss past land use activities that have influenced existing fish and wildlife resources.

c. State how fish and wildlife management will be coordinated with the military mission and other natural resource activities. Specifically, discuss coordination of forest management, outdoor recreation, BASH reduction, agricultural and grazing outleases, other outleasing of land, and land
management (mowing, insect control, weed control, planting of ornamentals, etc.) activities. Discuss the compatibility of the different resource management activities and the modification of the various management

practices to provide multiple benefits. Discuss potential conflicts and provide solutions. (See paragraph 6f, Chapter 4, Vol. II, of this manual.)

11. INTERAGENCY COOPERATION:

Discuss compliance with cooperative management provisions of the Sikes Act and coordination with state fish and wildlife agencies and local offices of the USFWS. Describe opportunities for interaction with these agencies, assistance available, or when coordination or consultation is required for certain activities.

12. ENVIRONMENTAL ASSESSMENT:

Briefly state the potential impact of the proposed program on environmental quality.

13. RESOURCE SURVEYS AND MANAGEMENT STUDIES:

Identify current and planned studies and their objectives.

14. PUBLIC ACCESS: (This paragraph is not necessary if the natural resources plan has an outdoor recreation management section. However, public access must be addressed in the fish and wildlife cooperative agreement in order to comply with the Sikes Act.)

The degree of public access for recreational purposes wi11 be (choose one of the following categories):

a. Category A: Open to the general public, regardless of association with the military or other DOD agencies. Numbers of visitors or users will be regulated within manageable quotas based on resource capabilities, mission requirements, and management plans.

b. Category B: Open to DOD employees and guests. This includes all military and civilian employees of DOD and their dependents, relatives, and guests, and retired employees. Guests must be accompanied by their sponsor when participating in activities when required by safety or security considerations as set forth in the base regulation pertaining to use of the resource or facility. Dependents and retirees generally do not require accompaniment.

c. Category C: Open to installation personnel and guests only. This includes personnel stationed or employed at the installation either PCS or official TDY, and their dependents, relatives, and guests. It does not include retirees or DOD employees from other installations or military services not PCS or official TDY.

d. Category D: Open to installation personnel only. This includes only those personnel assigned PCS or official TDY at the installation. Dependents, relatives, guests, retirees, and other DOD employees are not included.

e. Category E: The installation is closed to participation in a particular activity or to the use of a particular resource. (Note: the installation may be Category E for hunting and Category A for fishing or any other combination. The category restrictions apply to particular facets of the installation resources, not to the entire installation.)

15. APPENDIXES: (as needed)

a. Habitat survey reports.

b. Principle species list.

c. Administrative study reports.

d. Bag and creel censuses (for the past ten years).

e. Stocking records (for the past ten years).

f. Reports on plans from cooperating agencies.

g. Maps diaitized on a digitized NAVFACENGCOM real estate su T ary map, if available, in a computer vision format. Include appropriate size maps on which at least the following areas are delineated:

(1) Habitat as listed in the fish and wildlife habitat summation table. (Aerial mosaics make excellent habitat maps).

(2) Locations or habitats with known or potential occurrence of each threatened and endangered species. Include officially designated critical habitats, and locations of candidate and other sensitive species.

(3) Existing habitat manipulations.

(4) Proposed habitat manipulations.

APPENDIX B

MODEL
COOPERATIVE A6REEMENT FOR THE PROTECTION,
DEVELOPMENT, AND MANAGEMENT OF FISH AND WILDLIFE
RESOURCES AT

PURPOSE AND AUTHORITY

This tripartite cooperative agreement by and between the Department of Defense functioning through the Installation Commanding Officer, (Installation under the authority of Pub. L. 86-797, the Sikes Act (16 ~ISC 670a through o) (after this referred to as the Navy); the Department of Interior, functioning through the Regional Director of the U.S. Fish and Wildlife Service under the authority in 16 USC 661 through 667e, 1531 through 1543, (after this referred to as the Service); and the State of (State), functioning through the Director (state agency) under the authority of (state authority) after this referred to as the State, is entered into for the purpose of protecting, developing and managing the fish and wildlife resources at (Installation). This agreement is within the purview of Pub. L. 85-624, The Fish and Wildlife Coodination Act as amended, Pub. L. 91-190, National Environmental Policy Act, 42 USC 4321, 4331 through 4335, and 4341 through 4347, Pub. L. 93-205, The Endangered Species Act as amended, Pub. L. 96-366, the Non-Game Act, and under the principles of multiple-use sustained yield as required in OPNAVINST 5O90.1. This cooperative agreement, together with the fish and wildlife management section on of the installation natural resources management plan, constitutes a cooperative plan for fish and wildlife management pursuant to the Sikes Act.

RESPONSIBILITIES

Whereas, the Commanding Officer at (Installation) has jurisd~ction over (Installation) and has the trusteeshlp responsibility to restore, conserve, and protect the fish and wildlife habitat thereon,

Whereas, the Service is the agency of the Federal Government primarily responsible for the welfare of fish and wildlife resources and research thereon with Federal responsibility to manage migratory birds and protect threatened and endangered species, and

Whereas, the (State Agency) was created under the laws of the State of (State) to provide an adequate and flexible system of control, propagation, protection and regulation of resident fish and wildlife in (State); and

Whereas, it is the mutual desire of the Navy, the Service and the State to work in harmony for the common purpose of developing, maintaining, and managing the fish and wildlife resources at (Installation) for the best interest of the people of (State) and the United States.

Therefore, it is mutually agreed that:

Section I. Joint Activities of Navy, Service, and State:

1. The Service and State will act in an advisory capacity to the Navy in matters that pertain to management of fish and wildlife and their habitats on lands administered by the Navy.

2. No exotlc plant or animal species will be introduced on Navy controlled lands without the prior written approval by the Navy, the Service, and the State.

3. All parties will cooperate in preparing/periodically revising a Fish and Wildlife Management Plan as prescribed in OPNAVINST 5O9O.l and in conducting fish and wildlife studies required under the National Environmental Policy Act on lands under Navy control.

4. An interdisciplinary united approach will be promoted by all interested parties to resolve problems that relate to multiple use management of natural resources.

5. All parties will jointly meet at least once every five years to discuss matters that relate to conserving and managing fish and wildlife resources on or affecting the lands administered by the Navy. This includes law enforcement, educational programs, cooperative studies, plans, surveys, regulations pertaining to hunting, fishing, and trapping, and other matters as may be relevant to fish and wildlife conservation within the concept of multiple use management.

6. Any hunting, fishing, and trapping at the installation will be according to Federal and state fish and game laws and any applicable (installation) hunting, fishing and trapplng regulations, the Federal laws taking precedence only in the event of conflict.

7. If user fees for on-base hunting, fishing, and trapping are charged under the authority ln Pub. L. 86-797 (16 U.S.C. 67Of), fees will be at a rate determined by the installatlon commanding officer and shall be accounted for by the Navy and used exclusively on (installation) for the purpose of carrying out an approved fish and wildlife conservation program according to an approved fish and wildlife management plan. An approved fish and wildlife management plan will be an integral part of this agreement and will be provided as attachment (1) when finalized. A user fee schedule will be provided as attachment (2) when fees are collected for on-base hunting and fishing.

8. Such licenses and permits as required in Section I, Paragraph 7 above do not relieve the holders of the requirements of the Migratory Bird Hunting Stamp Act, as amended, that generally requires that no person sixteen years of age or older shall take any migratory waterfowl unless at the time of such taking, he or she carries a valid, unexpired Federal migratory bird hunting stamp.

9. The use of chemical toxicants for controlling nuisance wildlife species on Navy lands will be according to current Federal and state laws and regulations.

10. Nothing in this Cooperative Agreement is intended to modify, in any way, the present cooperative program with other public agencies, conservation groups,

educational institutions, or modify any rights granted by treaty or otherwise to any Indian tribe or member thereof.

Section II. Navy Responsibilities:

Within the limitations of the assigned military mission and the availability of funds and manpower, the Navy agrees to:

1. Provide controlled access to authorized agents and employees of the Service and State in the execution of this cooperative agreement unless security or other military exigencies should prevent granting such access.

2. Regulate hunting, fishing and trapping on the installation according to applicable Federal and state laws and installation policies.

3. Maintain favorable habitat for indigenous species of fish and wildlife by coordinating other land uses and accomplishing direct habitat improvement measures according to an approved fish and wildlife management plan (attachment 1).

4. Protect threatened and endangered species and their habitat.

5. Provide three copes of related field reports, studies and evaluations; one to the appropriate Engineerinq Field Division of the Naval Facilities Engineering Command, one to the Service and one to the State.

Section III. Service Responsibilities:

Consistent with its primary objectives and responsibilities the Servke agrees within the limitations of funds and personnel to:

1. Give technical assistance in developing fish and wildlife resources for aesthetic, recreational, and economic benefits.

2. Make available, as requested, the services of a special agent to and in enforcing Federal laws and regulations.

3. Provide technical assistance in controlling nuisance species and resolving special problems that may arise subsequent to executing this tripartite Agreement.

4. Take part in fish and wildlife census surveys and make recommendations on how to protect threatened and endangered species.

5. Further the understanding of fish and wildlife conservation by conducting related research to solve field problems and assisting in related training programs.

6. Provide fish for stocking suitable waters according to the Service's stocking recommendations.

7. Provide copies of related field reports, studies, and evaluations to the installation commanding officer, appropriate Engineering Field Division of the Naval Facilities Engineering Command and State.

Section IV. State Responsibilities:

Consistent with its primary objectives and responsibilities and within the availability of funds and personnel, the State agrees to:

1. Conduct annual fish and wildlife censuses to determine yearly population trends and management recommendations for restoring or maintaining resident indigenous species.

2. Adjust resident game populations, when feasible, to avoid damage to public health, safety and other resource values, and to furnish (each year) a statement of current state hunting season dates, and all state hunting laws and revisions.

3. Make available, on request, wardens for normal enforcement of state fish and game laws on Navy lands.

4. Provide copies of related reports, studies, and evaluations on the installation's conservation program to the installation commanding officer, appropriate Engineering Field Division of the Naval Facilities Engineering Command, and Service.

Section V. Public Access:

Department of the Navy policy is to permit access to outdoor recreation resources to the greatest degree possible, consistent with the installation's safety and security requirements and its available manpower and natural resources to support such activities without degradation or impairment of environmental qualities. The degree of public access for recreational purposes will be (choose one of the following categories): (If public use must be limited or regulated, specify the reasons and details of such limitation or regulation such as limitation of the resource base, conflicts with mission, security requirements, and safety requirements.)

1. Category A: Open to the general public, regardless of association with the military or other DOD agencies. Numbers of visitors or users will be regulated within manageable quotas based on resource capabilities, mission requirements, and management plans.

2. Category B: Open to DOD employees and guests. This includes all military and civilian employees of DOD and their dependents, relatives, and guests, and retired employees. Guests must be accompanied by their sponsor when participating in activities when required by safety or security considerations as set forth in the base regulation pertaining to use of the resource or facility. Dependents and retirees generally do not require accompaniment.

3. Category C: Open to installation personnel and guests only. This includes personnel stationed or employed at the installation either PCS or official TDY, and their dependents, relatives and guests. It does not include retirees or DOD employees from other installations or military services not PCS or official TDY.

4. Category D: Open to installation personnel only. This includes only those personnel assigned PCS or official TDY at the installation. Dependents, relatives, guests, retirees, and other DOD employees are not included.

5. Category E: The installation is closed to participation in a particular activity or to the use of a particular resource. (Note: the installation may be Category E for hunting and Category A for fishing or any other combination. The category restrictions apply to particular facets of the installation resources; not to the entire installation.).

Section Vl. Amendments or Termination:

This Agreement may be modified or amended in writing by mutual agreement by authorized representatives of the three agencies. The installation commanding officer, on written notice to the Service and the State, has the right to terminate this Agreement (in whole or in part) at any time when, in his or her opinion, the installation's mission or other national security requirements make termination or modification a necessity.

DATE: _____

DEPARTMENT OF THE NAVY

BY

TITLE
INSTALLATION

DATE:

U.S. FISH AND WILDLIFE SERVICE

BY

TITLE

DATE:

STATE

BY

TITLE
ORGANIZATION

APPENDIX C
REQUEST TO USE FISH AND WILDLIFE FEE COLLECTIONS

BFY - Annual Request for Use of Fish and Wildlife Fees Collected

Installition:

1. The following is a request to NAVFACENGCOMHQ for obligation authority, by quarters, for spending collected fees.

First Quarter	$
Second Quarter	$
Third Quarter	$
Fourth Quarter	$
Total	$

Estimated unobligated balance on hand at start of budget fiscal year (BFY): $

Estimate of fee collections for BFY: $

2. A title, brief description, and cost for each fish and wildlife protect proposed for funding with fee collection proceeds is provided as an attachment. This information is presented in the format established by the appropriate EFD.

Prepared by: Date:
(Name and Title)

Approved by: Date:
(Name and Title)

APPENDIX D

U.S. NAVY FISH AND WILDLIFE FEE COLLECTION PROGRAM
Examples of Projects Funded

Habitat Improvements:

- Landscape planting beneficial to wildlife
- Wildlife food plot establishment
- Prescribed burning
- Increase habitat diversity and complexity
- Installation of water guzzlers for desert wildlife water sources
- Installation of artificial nesting devices (bird boxes)
- Oyster bed seeding
- Strip mowing and discing to establish early succession vegetation

Administer Public Hunts:

- Provide temporary employee game wardens
- Control public access with temporary employees
- Provide portable sanitary facilities
- Collect harvest data using temporary or contracted personnel

Pond Management:

- Lake and pond construction
- Lake and pond rehabilitation
- Bank stabilization to reduce sedimentation
- Application of lime and fertilizer
- Fish brood stocking
- Installation of fish attractors
- Fish sampling to determine all owable harvests
- Water sampling to insure proper water chemistry
  i.e., pH, nutrient load, dissolved oxygen
- Installation of bubblers to prevent freezing
- Aquatic weed control

Outdoor Recreation Improvement:

- Installation of new and maintenance of existing waterfowl blinds
- Installation of new and maintenance of existing deer stands
- Installation of new and maintenance of existing boat launching ramps
- Fishing pier construction
- Establish and maintain bird dog trial areas

Species Stocking and Restoration:

Wild turkey reintroduction
(introduction and reintroduction of fish and wildlife will be done only with the advice and consent of appropriate federal and state wildlife officials)

Trout stocking
(stocking should not be a management technique except for fishing and then only after consultation with qualified fisheries biologists)

(This plan becomes an addendum to the installation fish and wildlife management section and the installation pest control plan after it is approved by the installation CO)

APPENDIX F

BIRD-AIRCRAFT STRIKE HAZARD (BASH) PLAN OUTLINE

1. PURPOSE:

A bird-aircraft strike hazard exists at (installation) and its vicinity due to resident and migratory bird species. Daily and seasonal bird movements create various hazardous conditions. This plan establishes procedures to minimize the hazard at (installation). No single solution exists to this BASH problem, and a variety of techniques and organizations must be involved in the control program. This plan is designed to:

a. Assign responsibilities.

b. Establish procedures to identify high hazard situations and establish bird watch conditions.

c. Establish aircraft and airfield operating procedures to avoid high-hazard situations.

d. Establish guidelines to decrease airfield attractiveness to birds (or other wildlife that may be an aviation hazard).

e. Provide guidelines for dispersing birds when they occur on the airfield.

2. AIRFIELD LOCAL AREA:

a. Provide a detailed description of the installation and its surroundings. This information should be available in the installation's natural resources plan. References to maps and inventory data in the installation natural resources plan will suffice. However, minimum information that must be referenced or described includes:

(1) Installation 1ocation (county, state).
(2) Installation size (acres).
(3) Installation elevation.
(4) General topography.
  (a) Significant terrain features.
  (b) Rivers, lakes, ponds.
  (c) Developed areas.

(5) Vegetative types.
(a) Airfield (native or planted grass species, etc.)
(b) Adjacent to airfield.
(c) Developed/planted areas.
(d) Species mix on undeveloped land.
(6) Landfill locations.
(7) Sewage ponds.
(8) Golf course.
(9) Other significant bird attractions.

b. (installation) Habitat Map.

(1) Provide a map which identifies major habitat types available to birds. The map must be based upon a survey conducted to identify bird habitat.

(2) Use: When a specific hazard is identified and the location of the activity isolated, the habitat map should be consulted to determine if a specific attractant exists which can be altered within the scope of this plan.

(3) The habitat map will be used as a guide for the long-range program to reduce actual and potential hazardous environmental factors on (installation).

c. (installation) Surrounding Area Map.

(1) Provide a map of the surrounding area showing natural features. (A USGS topographic map is usually good for this use).

(2) This map will be used to identify specific hazards such as wildlife refuges, wetlands, lakes, landfills, etc. to avoid overflying. Through negotiation with the local community, hazards should be modified when possible.

3. TRAINING AREAS/GUNNERY RANGES/LOW-LEVEL ROUTES:

a. Describe training areas, gunnery ranges, and low-level routes predominantly used by the installation. Include wildlife refuges, bodies of water, landfills, coastal areas and any other significant bird attractions.

b. Maps.

(1) Provide Maps which depict low-level routes, training areas, and ranges predominantly used by the installation. These maps should be maintained at the Safety Office.

(2) All bird strikes which are reported will be plotted on these maps.

(3) This bird strike data will be analyzed and disseminated to flying units.

(4) Bird strike data will be used to determine if the use of certain routes/areas should be discontinued or altered.

4. RESPONSIBILITIES:

Assign the following responsibilities to a specific staff organization. We recommend formation of a bird-hazard working group, chaired by the Chief of Safety and composed of representatives of pertinent staff organizations, which meets monthly. It monitors compliance of all organizations. In general, it collects, compiles, and reviews data on bird strikes, identifies and recommends actions to reduce hazards, recommends changes in operational procedures, prepares informational programs for aircrews, provides training for assigned personnel, and serves as point of contact for off-base BASH issues.

a. Obtaininq and maintaining U.S. Fish and Wildlife Service and state depredation permits for gulls or other species that must be killed.

b. Identifying/storing bird remains and submitting for identification as necessary.

c. Utilizing the Bird Hazard Warning System to report significant bird activity noted away from the installation. Report siqhtings to the Aviation Safety Officer (ASO) and advise aircrews of hazardous conditions.

d. Identifying high risk areas such as landfills, and wildlife refuges, stablishing procedures to avoid them, and disseminating information.

e. Controlling animal hazards to aircraft. Use appropriate trapping methods for animals such as wild hogs. Consider fencing for deer control. Some species or individual animals may be removed by shooting. Coordinate with the Wildlife Management Section of the Natural Resources Management Plan and with the Pest Control Plan and obtain appropriate permits.

f. Modifying airfield habitat consistent with runway lateral and approach zone management criteria.

g. Providing any additional information on migratory, local and seasonal bird activities through contact with the U.S. Fish and Wildlife Service, Audubon Society, 1ocal ornithologists, and other agencies.

h. Reviewing all low-level routes and training areas or changes to existing routes/areas for BASH potential.

i. Reviewing low-level routes using the Air Force Bird Avoidance Model.

j. Controlling birds such as pigeons and starlings in hangers and other structures.

k. Declaring, disseminating and terminating bird watch conditions.

1. Conducting a daily airfield survey.

m. Appointing a bird scare group. This group will be activated at anytime when birds on the airfield create hazardous conditions. The bird scare group will, as a minimum, have immediate access to bio-acoustic and pyrotechnic equipment for bird dispersal. This equipment must be stored where access is readily available.

n. Monitoring bird activity and strike statistics and advising the chairman of the working group when a meeting is deemed necessary.

o. Including bird hazard conditions in weather briefings.

p. Issuing specific guidance for aviators to follow under bird watch conditions.

q. Reporting all bird-strikes in accordance with OPNAVINST 3750.6N.

r. Identifying radar targets as possible bird activity, when appropriate, to provide warning to pilots.

s. Ensuring aircrews participate in the BASH reduction program by promptly reporting all bird strlkes and hazardous conditions.

t. Obtaining and posting current bird activity data and ensuring it is readily available for briefing aircrews. Advising each unit of the daily bird condition. Each unit will post the bird condition on a status board and inform all aircrews of any change in status.

u. Briefing aircrews on seasonal bird hazards.

5. BIRD WATCH CONDITIONS:

The following teminology will be used for rapid communications to disseminate bird activity information and implement unit operational procedures. Bird locations should be given with the condition code.

a. Bird Watch Condition RED. Heavy concentration of blrds on or immediately above the active runway or other specific locations that represent an immediate hazard to safe flying operations. Aircrews must thoroughly evaluate mission need before operating in areas under condition RED.

b. Bird Watch Condition YELLOW. Concentrations of birds observable in locations that represent a probable hazard to safe flying operations. This condition requires increased vigilance by all agencles and extreme caution by aircrews.

c. Bird Watch Condition GREEN. Normal bird activity on and above the airfield with a 1ow probability of hazard.

6. BIRD REMAINS IDENTIFICATION:

a. Non-fleshy bird remains taken from aircraft or airfields following all bird strikes will be forwarded to installation personnel with expertise in bird identification. Small remains such as downy feathers can be used for positive identification, and are not to be discarded.

b. Forward the remains to the appropriate EFD if local identification is not possible. Include the General Use Naval Aviation Bird Strike Hazard Report which provides:

(1) Installation and state where remains are shipped from,

(2) Hazard report number,

(3) Date of strike,

(4) Type of aircraft involved in strike and squadron,

(5) Damage amount,

(6) Geographic location and altitude at time of strike.

c. See Appendix 4-K, Vol. II, of this manual for management guidance.

7. BIRD STRIKE REDUCTION:

Specify actual procedures to reduce bird strikes:

a. Aircraft Operational Procedures. See Appendix 4-G, Vol. II, of this manual.

b. Guidelines to Decrease Airfield Attractiveness to Birds. See Appendix 4-H, Vol. II, of this manual.

c. BASH Program Pest Control Considerations. See Appendix 4-I, Vol. II, of this manual.

d. Guidelines for Dispersing Birds on Airfields. See Appendix 4-J, Vol. II of this manual.

e. Specific Species Infonmation for BASH Programs. See Appendix 4-K, Vol. 11, of this manual.

APPENDIX G

AIRCRAFT OPERATIONAL PROCEDURES TO REDUCE BASH POTENTIAL

Examples of typical operational changes that should be considered to avoid areas and times of known hazardous bird concentrations, mission permitting are as follows:

1. Raise pattern altitude.

2. Change pattern direction to avoid bird concentrations.

3. Avoid takeoffs/landings at dawn/dusk + one (1) hour.

4. Limit or prohibit formation takeoffs and landings.

5. Depart pattern in trail; rejoin 300O feet AGL.

6. Reschedule local training or transition elsewhere.

7. Raise altitude enroute to low-level or training areas.

8. Minimize time on 1ow-level routes for training requirements.

9. Select low-level routes or training areas based on bird hazard data from the U.S. Fish and Wildlife Service, USDA Animal Damage Control, the Air Force BASH Tearn (such as the Bird Avoidance Model), or the appropriate EFD.

lO. Close auxiliary field.

11. Split formation during recovery.

12. Discontinue formation instrument approaches.

13. Make full-stop landings.

14. Evaluate behavior of birds (soaring, flying to or from a location, etc).

15. Under condition RED permit only full-stop landings. Prohibit formation takeoffs.

16. Under condition YELLOW limit touch and go's to the minium number required red for training. Low approaches will be limited and only those required for training will be performed. Pilots will be particularly cognizant of bird activity when on final approach and will initiate a go-around, immediately, if a bird strike is imminent.

APPENDIX H

GUIDELINES TO DECREASE AIRFIELD ATTRACTIVENESS TO BIRDS

The land management section of the installation natural resources management plan should be modified to incorporate the following practices when appropriate.

1. Grass Height Management. Mowing operations shall maintain a uniform grass height between seven (7) and fourteen (14) inches. Mowing frequency will be as needed to maintain height requirements. Coordinate mowing with periods of low flight activity. Grass must be cut before it goes to seed to discourage seed-eating birds from utilizing the airfield. Long grass discourages flocking species from entering the airfield because reduced visibility disrupts interflock communication and flock integrity and also prevents predator detection. Grass normally should not exceed 14 inches as high grass will attract some bird species and rodents which in turn attract raptors. Airfields with a variety of grass species may have a fast growing strain which reaches 14 inches sooner than the rest of the airfield. Mowing will be conducted when the average grass height reaches fourteen (14) inches. Higher grass height may be allowed if the airfield is outleased for hay production. Obtain assistance in herbicide selection for weed control, appropriate grass seed selection, fertilization, and erosion control vegetation from the appropriate EFD.

2. Broad-leafed Weed Control. Broad leafed weeds will be kept to a minimum on the airfield. Application of herbicides, as necessary, will be accomplished to achieve this. Broad-leafed weeds attract a variety of birds, may produce seeds and berries, and may limit grass growth.

3. Planting Bare Areas. Bare areas are frequently used by birds as resting sites and should be eliminated on the airfield. Grass will be planted as necessary and appropriate irrigation maintained.

4. Fertilizing. Selectively stimulate grasses to promote a uniform cover. Irrigation may be required to support turf growth. Watering should be controlled to enhance root production and decrease seed head production.

5. Reducing Edge Effect. Edge effect refers to the highly attractive transition zone between two distinct habitat types (e.g., brush to grassland.) The airfield will be maintained as uniformly as possible to reduce this effect (if a BASH problem is caused by animals attracted to the transition zone.)

6. Leveling of Airfield. High and low spots on the field will be leveled or filled to reduce attractiveness to birds and prevent standing water.

7. Removal of Dead Vegetation. Dead vegetation such as brush piles, grass clippings the cover it affords will be removed as soon as possible.

8. Removal of Remains from Airfield. Dead birds or other animals will be removed from the field to avoid attracting vultures or other birds. Forward remains which may be caused by collisions with aircraft to the appropriate EFD.

9. Drainage Ditches. Ditches will be inspected regularly and kept clear and obstacle-free. Ditch sides will be maintained as steeply as possible--minimum slope ratio of 5:1--to discourage wading birds and emergent vegetation. Vegetation will be removed as often as necessary to maintain flow and discourage use by birds. Reference the land management plan for procedures.

10. Eliminate Standing Water. Coordination with the Army Corps of Engineers and the appropriate state environmental permitting office is required prior to altering wetlands. Small ponds or puddles and some large bodies of standing water must be eliminated to reduce attractiveness to birds. Low spot and ditch maintenance is essential (6 and 10 above).

11. Use Proper Erosion Control Vegetation. Vegetation should be used which ~s appropriate for the region and supports BASH reduction philosophy (ie., do not control erosion using plants which produce seeds at heights below fourteen (14) to eighteen (18) inches).

12. Agricultural Crop Outleasing. Outleasing of crops should be consistent with BASH reduction philosophy. However, some crops such as alfalfa and cotton do not attract birds and may be additional advantages of reducing FOD and/or fire hazard near the runway.

13. Control Waste Disposal. Landfills are the most significant attractant to hazardous bird species. Disposal sites should be operated IAW FM Order 5200.2 and must comply with state and federal laws. Landfills which do not meet FM guideline criteria should be relocated. If landfill relocation is infeasible, every effort should be made to make the site as unattractive to birds as possible. The following methods should be considered:

a. Maintain a small working face to minimize exposed wastes.

b. Incinerate waste when possible/appropriate.

c. Operate landfill as a pit or trench to limit access to birds.

d. Dump waste at night or during non-flying periods.

e. Cover waste material immediately.

f. Restrict gulls and other birds with overhead wire barriers.

g. Relocate putrescible wastes.

h. Use bio-acoustics and pyrotechnics to frighten birds away.

14. Anima1 Hazards to Aircraft. Use appropriate trapping methods for animals such as wild hogs. Consider fencing for deer control. Some species or individual animals may be removed by shooting. Coordinate with the wildlife management section of the installation natural resources management plan and obtain appropriate permits.

APPENDIX I

BASH PROGRAM PEST MANAGEMENT CONSIDERATIONS

1. Food Source Control. Invertebrates and rodents provide important food sources for many birds. The pest management section should periodically survey and reduce these pests when required. Control of insects, earthworms, rodents, etc., through use of insecticides and rodenticides will be accomplished under the supervision of the installation Pest Management Office with EPA approved methods. Control should begin early in the spring. This must be coordinated with the animal control section of the wildlife management section of the installation natural resources management plan.

2. Eliminate Roosting Sites. Blackbirds and starling roosts will be controlled by vegetation management of roost sites where possible. Trees will be pruned to reduce the number of perches available and entire trees, or stands removed if necessary. When necessary, other methods should be considered.

3. Bird-proofing Buildings and Hangers. Pigeons, sparrows, and starlings frequently occur in buildings and hangers, and must be excluded. Denying access by screening windows, closing doors, and blocking entry holes is most effective. When necessary, other methods should be considered.

4. Toxic Perches. Pest management personnel should survey bird roosting sites and consider installing perches where maximum numbers of birds will contact them. Ensure perches are maintained with avicides to remain effective.

5. Pellet-Guns. Consider shooting birds for a short-term solution. Experience has shown that not all the birds can be removed using this technique. Proper safety equipment is necessary. A depredation permit may also be required.

6. Netting. Consider installing under superstructure to exclude pest birds from roosting areas. Ensure no gaps or holes are present for birds to get through.

7. Avitrol. Pest management personnel may consider placing in or near hangar to kill birds or create a distressed response, scaring others away.

8. Trapping/Removal. Consider using large cage with food, water, and other birds to trap pest birds. Birds can either be released away from the hangar or killed. Permits from the U.S. Fish and Wildlife Service and the state wildlife agency are required to ki11 protected birds.

9. Design Features. Consider structures with the support features located on the outside of the building to greatly reduce bird numbers. Consider this design when planning a new hangar.

lO. Door Coverings. Consider using netting or plastic strips suspended over the doors to exclude birds. Ensure no tears or holes are present which allow birds access to the hangar.

11. Sharp Projections. Consider use in limited areas such as ledoes, overhangs, or small places where birds cannot be allowed. Expense prohibits their use over the entire structure.

12. Night Harassment. Consider use of high pressure air or water to make hangars an undesirable roosting site. Persistence is the key.

APPENDIX J

GUIDELINES FOR DISPERSING BIRDS ON THE AIRFIELD

The following information is provided to assist the staff organization assigned the responsibility for dispersing birds on the airfield.

1. Bio-acoustics. Bio-acoustics are taped distress or alarm calls of actual birds. The equipment required to adequately project these calls include a cassette tape deck mounted in a vehicle and a speaker mounted on its roof. Special care must be taken to play in short intervals to prevent habituation by the birds. Play the tape for 20-30 seconds and then pause briefly. Repeat the procedure several times if necessary. The birds should respond by taking flight or becoming alert/wary. These calls are effective for gulls, blackbirds, starlings, cowbirds, grackles, ravens, crows, and sane shorebirds. Pyrotechnics should be used in conjunction with bio-acoustics to enhance complete dispersal.

2. Pyrotechnics. Pyrotechnics are 12-gauge scare cartridges that produce a secondary explosion to scare the birds from the area. The scare cartridges are launched from either a shotgun or a pyrotechnic pistol (M-8 Very Pistol) with a steel sleeve insert to modify the gun to the 12-gauge size. Pyrotechnics are effective for dispersing most bird species and should also be used for deer, moose, coyotes, and foxes.

3. Gas Cannons. Gas cannons may also be used. These devices should be operated, especially at dawn and dusk, as birds come in to feed or roost. Cannons must be relocated frequently to avoid habituation problems. These devices are very effective on waterfowl, pheasants and other game birds and can also be used for gulls and blackbirds.

4. Depredation. Birds must be killed occasionally as a reinforcement of other methods. Domestic pigeons, European starlings, and house sparrows can be killed without a permit. Most other species require federal and state permits. The appropriate EFD will contact the U.S. Fish and Wildlife Service and state wildlife agency for permits and assistance in this area.

5. Other Devices. Ingenuity is encouraged in the bird scare program. Other devices may be used. Radio-controlled model aircraft, hawk kites, model birds in distressed positions, falconry, etc., may all be considered based on availability and problem bird species. Contact the appropriate EFD for advice in this area.

6. Ineffective Methods. Ultrasound, rubber snakes, stuffed awls, rotating/flashing lights, loud music, and other such devices have not proved effective and should not be used.

APPENDIX K

SPECIFIC SPECIES INFORMATION FOR BASH PROGRAMS

The following is a summary of specific bird strike hazards and recommendations for reducing each hazard to flight operations. A brief description of each bird and how each species can be controlled or avoided is included. Each control measure will require action by one or more tasked organizations as described in the basic plan. It is very important to know which species is present before control techniques are most effectively applied. An appropriate field guide should be used to aid in bird identification.

1. Loons, Grebes, Pelicans, Cormorants and Mergansers. These are fish-eating birds. Control is best accomplished by removing fish-producing ponds near the airfield. Removal of the food source is not always possible, though pyrotechnic can be used to effectively frighten the birds from the area. Avoid flying at sunrise and sunset when large flocks, often in formation, can be found flying to and from feeding areas.

2. Pelagic Birds (albatross, petrels, shearwaters, auks, etc.). Control of these birds is nearly impossible since natural predators are rare and the birds exhibit little fear of man or aircraft. Avoid flying near nesting areas during the brief summer nesting period. These huge nesting colonies are located on steep rocky coast lines or on islands where many thousands of birds may be concentrated.

3. Long-legged Waders (herons, egrets, ibises, storks). Most of these species are attracted to water where they feed on fish, amphibians, reptiles, and arthropods. Control is best accomplished by eliminating the food sources. Steepening the sides of ditches and ponds and removing emergent vegetation will drastically reduce accessibility to food sources. Pyrotechnics should be used to disperse any birds which do occur after habitat modification.

4. Cattle Egrets. These birds have different feeding habits than their relatives, preferring open fields where they primarily feed on insects. They frequently follow mowers for the insects which are stirred up. Mowing should be accomplished during non-flying hours when Cattle Egrets are present. Grass should be maintained between 7-14 inches. Periodic pesticide application may be necessary for insect control. Roost sites should be eliminated on or near base by removing or thinning roost trees and brush, and disersing the birds each evening with pyrotechnics.

5. Waterfowl (ducks, geese, swans). A distinction must be made between resident and migrating populations.

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a. Resident waterfowl are attracted to an area to breed or feed. Ponds, lakes, ditches, etc., may attract these birds, particularly if these areas contain emergent or submerged vegetation for feeding, nesting, or shelter. Steepening ditch and pond banks and removing vegetation will reduce waterfowl numbers. When possible, drainage of water sources should be accomplished. Grainfields may also attract waterfowl in large numbers and should be eliminated. Pyrotechnics, gas cannons, and hawk kites/balloons are all excellent control techniques. Use of live ammunition or opening base areas to waterfowl hunting may also be used for control. Resident birds are most active at dawn and dusk, moving at low altitudes to and from feeding areas. Avoid flying near wildlife refuges, or any ponds, lakes or rivers with known waterfowl concentrations during these times.

b. Migrating waterfowl are particularly dangerous to flight safety due to the large number and generally higher altitude of the birds. Large flocks of waterfowl travel along traditional flyways to their breeding and wintering grounds during spring and fall. Huge flocks may stop along the route awaiting favorable weather conditions to continue. Migrating birds are most active from sunset through midnight, with numbers decreasing in the early morning hours. October and November are most hazardous. Avoidance of flying during the evening hours is generally safest. Obtain Bird Avoidance Model (BAM) data from the BASH Team for information and planning purposes for comparing low-level routes. Wintering concentration areas should be avoided.

6. Raptors (hawks, falcons, kites, eagles, vultures). These birds can be particularly hazardous to aircraft because of their size and widespread distribution over bases and 1ow-level areas. Raptors (particularly vultures) use thermals to their advantage to search for prey. These birds become active during mid-morning and remain aloft until late afternoon. Avoid areas with thermal-generating terrain such as ridge lines, rolling hills, and near water. Landfills are particularly attractive to soaring vultures. In the fall, raptors migrate by day to areas of heavy winter concentrations in the southern states. These birds can be controlled by removal of dead animals on the airfield, proper management of landfills, rodent control on airfields, and removal of dead trees and other perching sites on the airfield. Pyrotechnics may be used to frighten raptors from the airfield.

7. Grouse, Quail, and Pheasants. These game birds are most effectively controlled through proper grass-height management. Do not allow grass to exceed 14 inches and eliminate all brush and weed patches on the field, particularly if the plants are seed-producing. Pyrotechnics, gas cannons, live ammunition or periodic hunts can effectively disperse these birds. The kinlling of these birds outside the normal hunting season requires special permits from the U.S. Fish and Wildlife Service and the state wildlife agency.

8. Cranes. These large birds are most hazardous during migrating periods, particularly in the fall when many thousand of birds may be concentrated in a small area. Avoid flying at dawn and dusk in areas of known concentration. Pyrotechnics can be effectively used on the airfield to disperse these birds.

9. Sandpipers/Shorebirds. The most significant hazard from these birds occurswhen large numbers flock in tight groups, particularly duringmigration and along coastlines. Many of the upland species such as Upland Sandpipers and Buff-breasted Sandpipers may nest on airfields in spring and early summer. Other species such as Killdeer are quite adept at avoiding aircraft and do not pose a significant hazard. Flocks in coastal areas can be hazardous and should be avoided. To control these birds, proper grass height management must be observed. Water in puddles should be eliminated and ditch banks steepened to limit access to these birds. Pyrotechnics can be used for all species and some respond will to bio-acoustics.

10. Gulls. These birds represent the most significant hazard to aircraft worldwide. Due to their omnivorous feeding habits and preference for flat, open areas to rest, they are commonly found on airfields. Gulls are most active just after sunrise and before sunset as they move to and from feeding areas. Improperly operated landfills are a significant source of attraction for gulls and should not be allowed in the airfield vicinity. Maintenance of grass height between 7 and 14 inches is critical in reduction of gull numbers. Even with this in effect, gulls may inhabit the airfield, particularly during inclement weather. Persistent harassment using pyrotechnics and bio-acoustics is necessary to discourage these birds. Occasionally, live ammunition should be used to reinforce these techniques. Other techniques such as gas cannons, model gulls, radio-controlled model aircraft, and even falconry should be considered if available and cost-effective. Poisoning of earthworms and insects (especially grasshoppers) may be accomplished if these invertebrates are found to attract gulls. Do not allow these birds to establish a habit of using the airfield to feed, breed, or rest.

11. Terns. These are fish-eating, gull-like birds common in coastal areas and on some major river systems and lakes. Avoid flying near areas where these birds may be active, such as nesting colonies or piers in coastal areas. Remove the food source or eliminate fish-containing ponds, if these birds pose a significant hazard.

12. Pigeons and Doves. These birds are seed-eaters and are attracted to seed-producing weeds, grasses, and shrubs. Open areas or bare spots are attractive as resting or feeding sites. Pyrotechnics can be effective in frightening these birds. Proper grass-height management, irrigation, and mowing before grass goes to seed will limit the number of pigeons and doves on the field. Pigeons frequently occur in structures such as hangers. Netting, shooting, trapping, poison baiting, and especially toxic bird perches (such as Rid-A-Bird) can drastically reduce their numbers in these structures.

13. Owls. Most owls are nocturnal and attracted to rodents as a food source. Rodent control may be necessary on the airfield; proper management of airfield grass will limit their numbers. Remove perch sites such as unnecessary fence posts and dead trees to limit the number of owls. Avoid overflying landfills at night to reduce hazards from owls.

14. Goatsuckers (nighthawks, Whip-poor-wills, etc.). These birds are active particularly at sunset when insects are abundant. Little can be done to limit their numbers other than insect control. Avoid flying at times when these birds are abundant, particularly near lakes, streams, or other areas with large insect populations.

15. Woodpeckers. Woodpecker strikes should be extremely rare. These birds are common in forested areas, but generally remain below canopy level. On the airfield, elimination of trees should eliminate strikes with these birds. Migratory birds may be encountered, but are rarely struck.

16. Flycatchers. These birds are present on airfields to feed on insects. strikes are infrequent, but should not be overlooked. Control is best accomplished by control of insects and removal of perch sites such as fence posts, tree limbs, bushes, high spots on the field, etc.

17. Horned Larks. These birds are very difficult to control. They are attracted by bare spots such as along runway sides, where they eat weed seeds and insects. The best defense against these birds is a thick, uniform grass with no bare spots. In the southwest, this may not be possible as grass cannot always be maintained. Consider coating bare spots, particularly along runways, with oil-base or asphalt cover. Pyrotechnics can be used, but these birds will tend to fly only short distances and settle down. Persistence ~s the key to success.

18. Swallows and Pratincoles. These birds eat insects in flight and are commonly found above airfields. Fortunately, swallows are adept at avoiding aircraft, but if they present a problem, measures can be taken for their dispersal. Insect control will reduce the swallow numbers and discouragement of nestling will further decrease numbers. Wash mud nests from eaves, culverts etc., with a hose as the birds began nesting. Nesting in banks can be discouraged by harassing the birds as they work on building. If swallows are noted resting on runways or taxiways, use pyrotechnics to disperse them.

19. Crows and Ravens. These omnivorous birds are common in open areas and around landfills. These birds may occur in large flocks, particularly at sunset as they return to roost sites. Proper grass-height management will reduce population numbers. Remove any known roost sites or thin individual roost trees. Landfills must be operated in a manner to discourage these birds. Bio-acoustics and pyrotechnics can be used to frighten these birds if they occur on the field.

20. Blackbirds, Grackles, Cowbirds, and Starlings. These birds can be particularly hazardous because they frequently occur in huge flocks, sometimes in the millions. Blackbirds and starlings are attracted to flat, open areas to feed, rest, or stage/pre-roost. Maintenance of grass height between 7 and 14 inches is the best means of reducing aiefield blackbird and starling numbers. Do not allow seed-producing plants to grow on the airfield nor outlease grain crops in areas where these birds are known to occur. Roost sites must be eliminated near the flightline. Selective

pruning or removal of roost trees, brush, or cattails must be accomplished if blackbirds and starlings are roosting on base. Blackbirds and starlings respond well to an intense frightening program using bio-acoustics and pyrotechnics. Other methods should be used to supplement this program as necessary. Starlings are not federally protected and may be killed without permits. Permits are required for other species. Occasional shooting of birds will reinforce other frightening techniques. Poisoning or trapping may also be considered with U. S. Fish and Wildlife Service assistance recommended. If these birds occur in hangars, toxic bird perches are recommended to eliminate the problem. Avoid at all costs, flying near known blackbird and starling roosts especially at sunrise and sunset and during spring and fall migration. Huge roosting colonies may also be present during winter months in southern states.

21. Meadowlarks. These birds occur on nearly every airfield and are attracted to grasslands and low weeds. Eliminate broad-leafed weeds and maintain grass height at 7 tol4 inches. Elimination of suitable perching sites, such as fence posts and brush, will also aid in reduction. Pyrotechnics can be used, but meadowlarks usually only fly a short distance before settling down again. Persistence is the key to success.

22. House Sparrows. These birds are not frequently struck by aircraft, but are common pests around structures. House sparrows often nest in hangars and dense shrubs and trees. These birds are not protected by law and may be killed without permit. Toxic bird perches may be used to remove House Sparrows from hangars or other structures. Frightening techniques are usually ineffective against these birds.

23. Warblers. The wide range of species of warblers thrive in a variety of habitats. Most prefer shrubs, trees, or riparian habitats where they feed, breed, or rest. These habitat types should not be allowed on the airfield and warbler strikes will be rare as a result. Migrating warblers may be struck at night, especially as they fly south in fall. Fortunately, these birds are very small and rarely cause damage.

24. Fringillids (sparrows, finches, grosbeaks, and buntings). Most Fringillids are not hazardous to aircraft operations, but occasional large flocks can be encountered, particularly during migration. These birds are seed-eaters, as a rule, and most prefer weedy, brushy, or forested areas. Proper grass height management is the best means of control. Grass exceeding 14 inches will attract many of these birds and should not be allowed. Mowing should be accomplished before grass goes to seed. Pyrotechnics can be used to frighten many of these birds; success may be limited with others.

25. Mammals. While concern is mostly centered on birds, several mammalian species also pose threats to flight operations and must be considered. Close coordination with the Wildlife Management Plan is necessary to reduce this type of hazard.

a. Deer. Members of the deer family (including moose, elk, and caribou) occasionally occur on airfields. These species are generally browsers, preferring broad-leaf weeds, shrubs, and trees. Do not allow growth of these plants on the airfield. The presence of these plants in surrounding areas will serve to draw these animals to the airfield. Tall fences (up to 15 feet) can discourage these animals from entering airfields, but due to expense, should only be used in urgent cases. On-base hunting will also discourage the presence of deer species. Pyrotechnics should be used to frighten these animals when they do occur on the airfield.

b. Coyotes and Foxes. These animals are attracted to airfields by rodents, rabbits, and other food sources. Dens may be found in banks, culverts, or other suitable areas. Rodent control will reduce the numbers of these animals. Pyrotechnics can be used to frighten these species and occasional shooting of individual animals or recurrent pests will also reduce the hazard. Permits may be reouired.

c. Rabbits and Hares. In addition to direct hazards to aircraft, these animals often attract raptors. Proper grass management will reduce the number of these animals on airfields. Occasional extensive rabblt hunts on the field can reduce populations for several subsequent years. Poisoning can also be effective for reduction of populations. Permits may be required.

d. Rodents. These animals attract raptors. Control by maintaining a uniform turf at the proper heights. Rodenticides may be used in some cases.

APPENDIX L

BIRD SIGHTING REPORT (MODEL)

From: (Name/lnstallation)

To: (NAVFAC EFD)

SIGHTING NUMBER	BIRD TYPES & QUANTITY	BIRD ACTIVITY	SCARE TACTICS	DATE & TIME	LOCATION
1.					
2.					
3.					
4.					

(Fill out the above log on any significant bird sightings. Refer to installation/airfield/low-level route maps for locations.) (Use the terms below to help in filling out this report.)

COMMON BIRD TYPES:

1. List local hazardous bird approximate species
2.
3.
4.

COMMON ACTIVITIES:

1. Flying: (specify altitude, direction, etc.)
2. Soaring: (circling in one general area)
3. Loafing: (resting or sitting in one place)
4. Feeding: (identify food source)

TYPE OF SCARE TACTICS:

1. Pyrotechnics
2. Bio-acoustics
3. Gas Cannons
4. Other (specify)
5. None

CHAPTER 5: OUTDOOR RECREATION MANAGEMENT

1. SCOPE:

This chapter sets forth the authority, responsibilities, and procedures for management of natural resources to provide opportunities for outdoor recreation on lands under the jurisdiction of the Chief of Naval Operations. It provides guidelines for preparing the outdoor recreation management section of an installation natural resources management plan, and designating and managing recreation resources.

2. REFERENCES:

a. Public Law 86-797, Sikes Act as amended by Public Law 99-561 (16 USC 67Oa-670f)
b. Public Law 88-29, Outdoor Recreation-Federal State Programs Act (16 USC 46OL-46OL3)
c. Public Law 89-665, National Historic Preservation Act (16 USC 47n-47Om)
d. Public Law 9O-542, Wild and Scenic Rivers Act (16 USC 1271-1287)
e. Public Law 90-543, National Trails System Act (16 IISC 1241-1249)
f. Public Law 91-190, National Environmental Policy Act (42 USC 4321, 31-4335, and 4341, 4347)
g. Executive Order 11989, Use of Off-Road Vehicles on the Public Lands
h. DODDIR 6O5O.2, Use of Off-Road Vehicles on DOD lands
i. NAVFAC MO-l OO.4, Outdoor Recreation and Cultural Values
j. Memorandum of Understanding between the Department of the Interior and the Department of Defense for the Development of Public Outdoor Recreation Resources on Military Installations, 7 April 1978
k. Memorandum of Understanding between the U.S. National Park Service and the Naval Facilities Engineering Command, 27 April 1986

3. AUTHORITY:

The memoranda between the Departments of Defense and Interior and between NAVFACENGCOM and the U.S. National Park Service establish and provide guidance on the Navy's responsibility with regard to managing natural resources for outdoor recreation. E.O. 11989 and DODDIR 6O5O.2 provide guidance on use of off-road vehicles on DOD lands. Additional authority is contained in the public laws referenced above. The Sikes Act requires that installations provide public access for natural resources uses to the extent it is appropriate and consistent with the military mission.

4. DISCUSSION:

Management of natural resources to provide outdoor recreation opportunities is an especially cost effective means of enhancing the

quality of life for Navy personnel. The program applies to all Navy commands and personnel, and covers Naval Installations which contain natural resources that have a potential to be managed for outdoor recreation. Outdoor recreation opportunities that can be created or enhanced via natural resources management include:

a. Dispersed Recreation Activities. Dispersed recreation activities include activities such as hunting, fishing, hiking, nature study, bicycling, horseback riding, sailing and canoeing, cross country skiing, primitive camping, and interpretive nature trails. See Appendix 5-B for additional information.

b. Concentrated Recreation Activities. Concentrated recreation activities include camping, picnickling, fitness trails, swimming, snow skiing, ice skating, sledding and tobogganning, target shooting, boating, and beach and water sports. See Appendix 5-B for additional information.

5. RESPONSIBILITIES:

a. Each installation with outdoor recreation potential shall:

(1) Identify and administer outdoor recreation opportunities and resources.

(2) Initiate and develop a cooperative agreement with the U. S. National Park Service and the appropriate state agency. Under this agreement, the installation has full management authority and the cooperating agency acts in an advisory capacity.

(3) Develop and implement an outdoor recreation management section of a comprehensive natural resources management plan. (Assistance from NAVFACENGCOM is addressed in paragraphs 7b and 7h, Chapter 1, Vol. II, of this manual.)

(4) Provide copies of all cooperative agreements and management sections to the appropriate EFD.

(5) Control use of off-road vehicles (ORV) and of ORV use areas in accordance with paragraph 6e of this chapter.

b. Naval Facilities Engineering Command Engineering Field Divisions shall:

(1) Provide assistance to installations in preparing cooperative agreements and outdoor recreation management sections.

(2) Provide assistance to installations in identifying and administrating outdoor recreation opportunities and resources.

c. Major claimants and intermediate commands shall require and ensure subordinate installation outdoor recreation management programs.

d. Naval Facilities Engineering Command Headquarters shall:

(1) Provide leadership, technical assistance, and administrative coordination to insure effective implementation of the outdoor recreation mananement program.

(2) Establish, coordinate, and promulgate outdoor recreation management guidance and services required and issue appropriate instructions.

(3) Establish EFD annual workload guidance and approve EFD annual operating plans regarding outdoor recreation management program requirements.

6. TECHNICAL REQUIREMENTS AND CONSIDERATIONS:

a. Outdoor Recreation Management Section of Comprehensive Natural Resources Management Plans. Management sections for outdoor recreation shall be prepared according to the outline in Appendix 5-A. This management section is also intended for use by facilities planners so that these resources may be conserved and used to the optimum extent possible in support of the military mission and to insure compatibility between outdoor recreation management activities and the mission.

b. Cooperative Agreements. The Departments of Defense and Interior have developed a model cooperative agreement designed to carry out a program of planning, development, maintenance, and coordination of outdoor recreation on military reservations. Appendix 5-C is a model format. This agreement will be signed by the installation Commanding Officer or Officer in Charge, the Regional Director or Area Manager of the U.S. National Park Service, and the appropriate state official. The appropriate EFD should also be a party to the agreement if they will play a significant role in the development and implementation of the outdoor recreation program. The installation's determination regarding public access shall be included and explained in the agreement.

c. Special Interest Areas. The establishment of special interest areas allows for an orderly review and approval system for allowing individuals and agencies to conduct research, provide interpretive programs, and otherwise mike use of significant yet sensitive natural areas. See Appendix 5-B for additional information.

d. Coordination of Recreation Management with Natural Resources Management. Management of natural resources related recreation activities by morale, welfare, and recreation staff agencies or any other installation activity shall be conducted in accordance with the installation natural resources management plan and coordinated with the installation natural resources program manager/coordinator.

e. Off-Road Vehicles.

(1) Off-road recreational vehicles include any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain; the term excludes:

(a) Any registered motorboat.

(b) Any military, fire, ambulance, or law enforcement vehicle when used for emergency uses.

(c) Any combat or combat support vehicle when used for national defense purposes.

(d) Any vehicle whose use is authorized by the Secretary of Defense or his properly designated representative under a permit, lease, license, or contract.

(2) Navy lands may not be designated for off-road and/or special sport vehicle use in areas restricted for security, safety, geological, ecological, archaeological, historical, or other purposes.

(3) DODDIR 6O5O.2 (NOTAL) has established uniform policies, procedures, and critera for designation of areas and trails where off-road and special sport vehicles may be permitted, as well as appropriate operating conditions for the vehicles. Such activities may be permitted only where specifically designated. All other areas should closed.

(4) Designation of sites for such vehicle use must consider area-use; trail designation; use classification; and environmental considerations including generation of dust, erosion and sedimentation, endangered or threatened species, fish and wildlife habitat, and effects of noise on humans and wildlife.

(5) Use of such vehicles will be permitted only in conformance with applicable state laws.

(6) Whenever it is determined by technically competent authority that the use of off-road recreational vehicles will, or is, causing adverse effects on the soil, vegetation, wildlife habitat, or cultural/historical resources, the area shall immediately be closed to the type of off-road vehicle causing such effects and not reopened until it has been determined that adverse effects have been mitigated and that measures have been implemented for restoration and prevention of future adverse effects.

f. Special considerations.

(1) The National Trails System Act (Public Law 9O-543) promotes the development of recreational, scenic, and historic trails for people with diverse interests and abilities. Federal agencies have been directed to designate National Recreation Trails on public lands under their jurisdiction.

(2) The Wild and Scenic Rivers Act Public Law 9O-542) sets forth policy to preserve selected rivers on sections thereof in their free-flowing conditions to protect the water quality of such rivers and to fulfill other vital national conservation purposes. Each Federal agency is to avoid or mitigate adverse effects on rivers identified in a nationwide inventory prepared by the U.S. National Park Service. The appropriate Navy command shall consult with the Service prior to taking actions which could effectively foreclose wild, scenic, or recreational river status on rivers in the inventory.

(3) Under the authority accorded in 36 CFR 251.23 and 4O FR 8127-8 the Navy will cooperate with the National Science Foundation, other public agencies, and such private professional organizations as appropriate, to establish and maintain ecological reserve areas and research natural areas. Use of these areas by scientists within and outside the DOD, for certain educational purposes will be encouraged as compatible with the mission of the host facility. Ecological reserve areas and research natural areas are defined in Appendix 5-B.

(a) As a general guide, Ecological Reserve Areas should show no evidence of disturbance by man for at least the past fifty (50) years. On rare occasions, however, wherein a valuable ecological community should be preserved, this guide can be waived and the most suitable area selected.

(b) In the management of Ecological Reserve areas due consideration should be given to protection of habitats of endangered and threatened species. If an area is identified as a critical habitat or is specifically established for protection of a species, activities that adversely affect the habitat or species should be modified as appropriate.

(c) Ecological Reserve Areas should be large enough to provide essentially unmodified conditions tn their interior portions. Seldom can smaller tracts be expected to contain or to maintain essentially unmodified conditions unless they are buffered by other areas that are maintained in a relatively stable condition.

(d) In general, physical improvements such as roads, trails, fences, or buildings should not be permitted within a natural or ecological reserve area. Temporary facilities required for research are the exception. Except as essential to fire protection of adjoining lands, no buildings, roads, or trails should be permitted.

(e) Areas should be protected against activities which directly or indirectly modify ecological processes if the area is to be of value for observation and research on plant and animal succession, habitat requirements of species, insect, and fungus depredations, soil microbiology, or related phenomena. Activities such as logging, crop harvesting, and uncontrolled grazing by domestic livestock should not be permitted. The criteria for management of both ERAs and NRAs is for protection against inappropriate encroachments.

(f) Areas should be identified in appropriate administrative records as to 1ocation, purpose, and objectives. Their boundaries should be marked in the field. Signs that tend to attract sightseers, and casual vistors should be avoided.

(g) For full national recognition, Ecological Reserve Areas and Research Natural Areas may be nominated by the command having management responsibilities. Nomination format outlines will be provided by the natural resources manager at the appropriate EFD. Nominations shall be forwarded to CNO (OP-45 via NAVFACENGCOMHQ (Code 2O42)).

(h) Each Ecological Reserve Area should be governed by a Research Use and Management Master Plan which is compatible with the establishment objectives. The plan should specifically address:

1) Criteria followed in its selection.

2) Use objectives and restriction.

3) Management objectives and maintenance details, especially those that will influence or interfere with established ecological processes.

4) Protection objectives and practices.

5) Data base from which management decisions are derived.

6) Compatibility of establishment and management-use objectives.

(i) A list of the names (title of position) and addresses of principal contacts with general responsibility for administering and protecting the surrounding physical area (outside the activity) and that of the principal contact responsible for approval and coordination of observational or applied research on the area shall be maintained. For Ecological Reserve Areas, the administrator and protector usually is the commanding officer, or designee. For Research Natural Areas the commanding officer, or designee, is responstble for administering and protecting the physical area and research with technical coordination provided by the EFD.

APPENDIX A

ACKNOWLEDGMENTS:

Much of the following outline is a synthesis of concepts, language, ideas, and organization presented in plans used by other federal and state agencies.

We acknowledge the States of Texas and Missouri, and the U.S. forest Service, National Park Service, Fish and Wildlife Service, Department of the Air Force and Department of the Army for their contribution in the preparation on of this outline.

OUTDOOR RECREATION MANAGEMENT SECTION OUTLINE

1. INSTALLATION MISSION:

Brief prospectus and introduction. This may be extracted from another installation on document. (A reference to a mission statement in another portion on of the natural resources plan will suffice.)

2. BACKGROUND: (The paragraphs below may be used verbatim.)

The Department of the Navy, as an important occupier of Federal lands, has various programs for outdoor recreation opportunities. These programs are designed to be compatible with national defense and security requirements and must ensure integrated multiple use management of natural resources.

A Memorandum of Understanding between the Departments of Interior and Defense requires all military installations to develop outdoor recreation plans where there are suitable resources for such a program consistent with national security.

Outdoor recreation includes the use of natural resources on the installation which provide opportunities for outdoor recreation. It does not include the use of recreation faciliities normally associated with urban developments such as playgrounds, golf courses, athletic fields/courts, swimming pools, trailer camps and marinas.

3. OBJECTIVES: (The paragraphs below may be used verbatim.)

a. Systematically emphasize optimum outdoor recreation benefits within the constraints of the military mission and capability of the resources.

b. Identify natural and other special interest areas and measures to protect and preserve these areas whenever feasible.

c. Mediate conflicts between competing recreational uses.

d. Insure multiple use of natural resources for outdoor recreation, fish and wildlife, forestry, and other purposes on a sustained yield basis.

4. RESPONSIBILITIES ASSIGNED: (Portions of the paragraph below may be used to indicate responsibilities assigned - keep it simple.)

Briefly describe responsibilities of each staff agency in managing and supporting the outdoor recreation program. There must be close coordination between key installation staff elements to make the installation outdoor recreation program work. An installation commanding officer ensures that an outdoor recreation program is developed which is coordinated with appropriate federal and state agencies. The public works officer develops and maintains the installation's outdoor recreation program by implementing an outdoor recreation management section and an outdoor recreation cooperative agreement. The public works officer also coordinates with and informs the appropriate morale, welfare, and recreation (MWR) offices of outdoor recreation related projects and operations. Morale, welfare, and recreation supports and participates in management of the outdoor recreation program. An installation commanding officer may assign to MWR the responsibility to oversee outdoor recreational activities in accordance with the outdoor recreation management section. For example, the public works officer may develop, maintain, and stock an installation’s fishing pond, but the MWR office could collect fees (for deposit in accordance with paragraph 69, Chapter 4, Part II, of this manual), check to see if users have state fishing licenses, and regulate fishing in the pond.

5. INTRODUCTION: (This should be a short paragraph.)

a. Credit statement for cooperating federal, state, and local agencies (if appropriate).
b. Briefly and concisely present an overview of the outdoor recreation program.
c. Briefly discuss current use and projected demand for outdoor recreation in estimated visitor days by recreation activity.
d. Vicinity map (if appropriate).

6. SPECIAL INTEREST AREAS.

Assemble and evaluate all existing information about known and potential special interest areas. Special interest areas are explained in Appendix 5-B. Review the land management section of the natural resources plan and tour the installation for special interest areas. Utilize available expertise in archaeology, history, fish and wildlife, zoology, geology, and botany from installation personnel, representatives of local, state or federal agencies; members of private organizations, local colleges and universities and qualified experts.

Present the assembled and evaluated information using the format shown below. Carrying capacity and degree of public access are explained in paragraphs 12 and 14 respectively.

Area Description	Location	Carrying Capacity	Degree of Public Access

7. DISPERSED RECREATION ACTIVITIES:

Assemble and evaluate all existinq information about known and potential dispersed recreation activities. Dispersed recreation activities are explained in Appendix 5-B. Present this information using the format shown below. Carrying capacity and degree of public access are explained in paragraphs 12 and 14 respectively.

Activity Description	Location	Carrying Capacity	Acres/ Miles	Degree of Public Access

8. CONCENTRATED RECREATION ACTIVITIES:

Assemble and evaluate all existing information about known and potential concentrated recreation activities. Concentrated recreation activities are explained in Appendix 5-B. Present this information using the format shown below. Carrying capacity and degree of public access are explained in paragraphs 12 and 14 respectfully.

Activity Description	Location	Carrying Capacity	Degree of Public Access

9. COMPATIBLE RECREATION USES:

a. In order to ensure optimum and compatible recreation uses, detenmine special interest areas flrst; vegetative and wildlife areas second (see paragraphs 3a an 3b of Appendix 5-8); concentrated recreation areas third (using a small portion of the vegetative and wildlife areas); and, dispersed recreation areas last (using the remaining portion of the vegetative and wildlife areas).

b. Discuss interaction between recreation uses, especially hunting. (See Append~x 5-B.)

c. Discuss air, noise, and water pollution (as needed).

d. Discuss health and safety problems (as needed).

e. Discuss hazards (as needed).

(1) man made

(2) natural

10. MAP: (A map is not necessary if references to maps in other management sections will suffice.)

Prepare a map by drawing boundaries around all the above listed special interest areas, dispersed outdoor recreation areas, concentrated outdoor recreation areas, and off-road vehicle areas; and, delineate them by color or other suitable code.

11. WORK SCHEDULING:

Schedule, by fiscal year, the projects planned for the next five years to develop, enhance, or maintain outdoor recreation opportunities. Estimate the cost of each project. This information will be the basis for each year's annual increment.

12. MANAGEMENT:

Describe how each of the identified special interest areas and dispersed and concentrated recreation activities will be managed regarding:

a. Preservation and protection of the values identified. For example, identify a requirement to check archaeological sites periodically to insure against threats from erosion, vandalism, grazing, cultivation, or other impacts.

b. User controls to ensure that usage does not exceed carrying capicity. Carrying capacity is the capacity of a land or water area to support continuously a quantifable amount of recreational activity and number of participants without the degradation or destruction of existing natural resources, installation facilities, public health and safety, and/or the quality of the recreation experience. Ways to measure and indicate carrying capacity may be obtained from the National Park Service. Carrying capacity can also be estimated by observing effects of actual use.

c. Inspection and maintenance of improvements and facilities.

13. PRELIMINARY ENVIRONMENTAL ASSESSMENT:

Indicate the conclusion or results of a preliminary environmental assessment.

14. PUBLIC ACCESS:

a. Indicate the installation's public access policy. The degree of public access for recreational purposes will be one of the following categories:

(1) Category A: Open to the general public, regardless of association with the military or other DOD agencies. Numbers of visitors or users wi11 be regulated within manageable quotas based on resource capabilities, mission requirments and management plans.

(2) Category B: Open to DOD employees and guests. This includes all military and civilian employees of DOD and their dependents, relatives and guests, and retired employees. Guests must be accompanied by their sponsor when participating in activities when required by safety or security considerations as set forth in the base regulation pertaining to use of the resource or facility. Dependents and retirees generally do not require accompaniment.

(3) Category C: Open to installation personnel and guests only. This includes personnel stationed or employed at the installation either PCS or official TDY, and their dependents, relatives and guests. It does not include retirees or DOD employees from other installations or military services not PCS or official TDY.

(4) Category D: Open to installation personnel only. This includes only those personnel assigned PCS or official TDY at the installation. Dependents, relatives, quests, retirees, and other DOD employees are not included.

(5) Category E: the installation is closed to participation in a particular activity or to the use of a particular resource. (Note: the installation may be Category E for hunting and Category A for fishing or any other combination. The category restrictions apply to particular facets of the installation resources, not to the entire installation.)

b. Department of the Navy policy is to permit public access to outdoor recreation resources to the greatest degree possible, consistent with the installation's safety and security requirements and its available manpower and natural resources to support such activities without degradation or impairment of environmental qualities. If public use must be limited or regulated, specify the reasons and details of such limitation or regulation such as limitation of the resource base, conflicts with mission, security requirements, and safety requirements.

APPENDIX B

SUPPLEMENTAL INFORMATION FOR PREPARATION OF OUTDOOR RECREATION MANAGEMENT SECTIONS

1. SPECIAL INTEREST AREAS:

a. Archaeological Areas. Sites with the remains of past societies, fossil remains, or ongoing archaeological investigations or diggings.

b. Botanical Areas. Sites with individual specimens (for example, a state or national champion tree) or communities (for example, spruce-fir forests on southern mountain tops) of plants that are important because of their form, color, occurrence, location, life history, arrangement, rarity, cultivation, or other features.

c. Ecological Reserve Area is a physical or biological unit in which current natural conditions are maintained insofar as possible. These conditions are ordinarily achieved by allowing natural, physical, and biological processes to prevail without human intervention. However, under unusual circumstances, deliberate manipulation may be utilized to maintain the unique feature that the ecological reserve area was established to protect.

d. Geological Areas. Sites with outstanding geological formations or historical features of the earth's development. Examples would be volcanic areas, areas of exposed rock (such as faults, cliffs, crevices, caverns), and outstanding natural features such as major watersheds.

e. Historic Areas. Sites that commemorate lives or occurrences in American or Navy history. Sites may commemorate a specific historic event, a period in history, or be unique or illustrative. Examples are historic buildings, districts, structures, or sites and primitive farms, including the identification, evaluation, recordation, documentation, curation, acquisition, protection, management, rehabilitation, restoration, stabilization, maintenance, and reconstruction of districts, sites, buildings, structures, and objects significant in American history, and architecture.

f. Natural Resource Areas. Managed areas suitable for demonstration, education, and research. Sites should demonstrate the compatibility of different resource uses and sustained yield production.

g. Scenic Areas. Individual areas of outstanding natural beauty or scenic splendor that require special management to preserve their qualities.

h. Zoological Areas. Sites with animals (including invertebrates) that are significant because of their visibility, rarity, uniqueness, ecological significant impact on land character, or other features. Examples are prairie dog towns, beaver ponds, raptor or other large bird nest sites, prairie chicken booming grounds, etc.

i. Endangered and Threatened Species Habitat. Existing habitat for listed, proposed, or category 1 candidate species on the national list or on the state list.

j. Wild Areas. Sites which possess outstanding opportunities for solitude and primitive recreation. The minimum acreage for a wild area is l,OOO acres. Wild areas provide recreational opportunities such as hiking, camping, picnicking, photography and swimming. The development of roads, other use facilities, and hunting are prohibited in these areas.

k. Research Natural Areas. Sites which serve scientific research and are protected from influence which could alter or disrupt the characteristic phenomena for which the area was established. Their main purposes are to provide baseline areas against which effects of human activities can be measured, sites for study of natural processes in undisturbed ecosystems, and gene pool preserves of organisms, especially rare and endangered types.

1. Additional Information and Guidance. Consider nominating those properties which may be eligible for listing in the National Register of Historic Places or the National Natural Landmark System. Find more detailed guidance on these subjects in NAVFAC MO-100.4.

2. NATURAL AR£AS EDUCATION:

a. Educational programs are central to the success of an outdoor recreational system. Interpretive programs not only enhance visitor enjoyment and awareness but also increase respect for the natural resources and recreation facilities.

b. Develop as budget allows brochures, nature trails, outdoor classrooms covering such areas as prairie ecosystems, cave science, and wildflower clinics, interpretive shelters, talks and slides shows, scenic overlooks, nature centers, and observation towers. Involve visitors as participants rather than as spectators.

c. Inform the public fully at every station that inadvertent or intentional destruction of an archaeological site, paleontological specimens, or endangered species could be considered either a civil or criminal violation of the law.

d. Employ careful administratnon of public use of special interest areas. Discourage improper use and guard against threats such as pollution from surrounding areas. Establish buffer zones which permit only the most compatible uses. As an example, surround a critical habitat wlth an area of limited recreational use such as nature trails or bird-watching and separate it from more intense recreational use such as camping. Or construct boardwalks in sensitive natural areas to prevent "compaction" and keep visitors within seeing, but not touching distance of fragile natural features.

3. VEGETATION AND WILDLIFE AREAS:

a. Vegetation. Existing vegetation is almost always an asset and necessary for recreational areas and should be given special consideration in the design of facilities. In addition to its aesthetic value, vegetation can provide both screening and shade to make recreation areas more comfortable. Vegetation serves as a useful buffer between recreation areas and other land uses, particularly if the other land uses are noisy or unattractive. Preservation of existing vegetation is preferable and more practicable than installation of new plant material which may take years to reach the maturity necessary for maximum effectiveness. New native plant material is necessary however, where soil is exposed to wind and water erosion. Refer to the appropriate paragraphs of the installation's land management section.

b. Wildlife. There are both passive (e.g. bird watching) and active (e.g. hunting) recreation activities which revolve around wildlife. The presence of wildlife also enhances recreational activities, such as camping and hiking, which are not directly related. Consult the installation wildlife management plan which is a valuable source of information. Where wildlife species do not interfere with military operations, measures to protect, maintain, and improve their natural habitat are generally required.

4. DISPERSED RECREATION ACTIVITIES:

Dispersed recreation activities occur within larger areas which can accommodate limited use.

a. Hunting. Ensure compatibility and coordination with the fish and wildlife management section of the installation's natural resources plan. Use areas for hunting which are relatively free of other activity, primarily as a safety precaution. Allow hunting only during the off-season for general recreation; hunters can use existing picnicking and camping facilities. The desirable number of acres per hunter varies according to the type of game being hunted, weapons being used, variety and density of vegetation, terrain features, and natural resources capacity of the area. Consult game experts familiar with local conditions in determining desirable densities. Clearly define and separate hunting from other use areas. Establish buffer zones for safety between hunting and other activities. Include target shooting, archery, and training hunting dogs. Comply with the 7 April 1978, Memorandum of Understanding between The Department of the Interior and The Department of Defense for the Conservation and Management of Fish and Wildlife Resources on Military Installations. Guidelines relating to the execution of Cooperative Agreements with state and federal agencies; and to permits, fees, and licenses requirements are contained in Chapter 4, Vol. II, of this manual.

b. Fishing. Consult aquatic biologists and fish management experts when planning fishing activities to detenmine appropriate use and improvements. Management of natural resources for fish habitat is more fully discussed in NAVFAC MO-100.4. Supplemental stocking to increase fish Quantity is necessary because such measures as improving fish habitat or fertilizing conflict with other uses of the water. Ensure compatibility with the fish and wildlife management section of the installation's natural resources plan.

c. Hiking. Provide trails in varying lengths and endurance requirements and locate trails through areas that show a variety of wildlife and habitats. Trail systems should have adequate drainage to limit erosion and to maintain the trails in usable condition. Use natural barriers such as fallen tree trunks and stream crossings to discourage off-road vehicles. Nominate national recreation trails pursuant to the National Trails System Act of 1968 which promotes the development of recreational, scenic, and historic trails for people with diverse interests and abilities.

d. Nature Study. Birdwatching, observing wildflowers, collecting wild edibles, shelling, botanizing, tracking animals, wildlife photography, rock hunting, butterfly collecting, and the innumerable other ways to study nature require that few species be absent which are indigenous to the area. Provide strip corridors for field interior habitat for birds and migration between natural areas following local extirpation due to seasonal, man-made or climatic stresses. Provide wooded corridors, through agricultural land over l0O meters wide. Provide stream corridors, for dispersal of terrestrial and aquatic organisms, that are wide and contain some upland habitat. Widen fencerows and shelter belts wherever possible. Protect old growth, wherever it occurs, because large tracts of old growth forest contain a steady state shifting mosaic of all community types from prairies and bogs to shrub and climax forests. The complexity of this old growth supports a high diversity of flora and fauna.

e. Bicycling. Provide bicycle access to and within outdoor recreation areas and connect them with living and working areas. Locate on abandoned railroads, low volume roads and designated forest access roads in loops running normally lO to 3O miles. Divide trails around trees, boulders, or other natural or man-made features to provide variety.

f. Horseback Riding. Separate riding trails from all other trail systems from the standpoint of sanitation and safety. Remove overhead tree branches which present a safety hazard. Muddy conditions may result both in accidents and horse diseases. Direct drainage from equestrian areas away from any nearby water bodies to avoid polluting them. Include ample space for parking and unloading horse trailers among the facilities, as well as the stables, corrals, and riding rings which make up an equestrian complex. These facilities should be separated from all other recreation facilities and located preferably downwind (according to the prevailing winds during the summer months) from them.

g. Sailing and Canoeing. Non-motor boats include sailboats, rowboats, and canoes and a maximum of four nonpower boats per one acre of water surface is acceptable. In sections where rapids or other condition make passage by water impossible, provide suitable portage ways. Provide access at both the beginning and end of the water run. Avoid or mitigate adverse effects on rivers identified by the U.S. Park Service to be inventoried for the wild and Scenic Rivers Act (PL 9O-542 of 1968) and consult with the Service prior to taking actions which could effectively foreclose wild, scenic, or recreational river status on rivers in the inventory.

h. Cross country sking, primitive camping, and rock climbing are other forms of dispersed outdoor recreation. They all require enforcement of safety rules.

5. CONCENTRATED RECREATION ACTIVITIES:

Concentrated recreation activities occur within limited areas which can accommodate intensive use.

a. Camping. Provide good drainage for camping sites. Good drainage requires topography with sufficient slope (five percent being deal for camping areas) and soils which allow water to permeate quickly to avoid muddy conditions. The soils should also withstand continuous traffic without adverse compaction or erosion. Provide adequate canopy for shade and understory for screening not only to separate campgrounds from other activities but also to separate individual campsites for privacy. Campgrounds should have easy access to roads and utilities and should be located reasonably close to related recreational facilities. Campgrounds which are associated with water areas, even if only by views, are particularly attractive to campers. Do not locate campgrounds in flood plains.

b. Picnicking. Provide good drainage and soils which withstand heavy use. The desirable slope for picnic areas ranges from two (2) to fifteen (15) percent. Vegetation is important. Picnic areas should also be near other recreational facilities-trails, beaches, and playfields being among the most popular. Picnic areas with views, especially of water, receive the greatest use.

c. Fitness Trails. Establish a fitness trail carefully blended into a natural setting. Include a measured jogging path with calisthenics. Trail gradients should provide adequate drainage yet prevent soil erosion. Topography of the site and type of soil are therefore very important.

d. Swimming. The most important factor affecting selection of a swimming area is water quality which must meet public health and safety standards. Maximum water depth for a swimming area should be six (6) feet, excluding diving areas which should be separated from swimming areas. The slope below water should be five (5) to ten (10) percent, and the surface should have enough base to prevent the area from becoming muddy.

e. Skiing (downhill). An area should receive a minimum of hundred (100) inches of snow per year without snow-making equipment and should offer eighty (80) to eighty-five (85) skiing days. Slopes should have a north-northeast exposure with sufficient tree cover to provide shade. Slopes should be graded and seeded for greater safety, easier maintenance, and better performance. There must be adequate waiting space at the base of any ski lifts, but avoid large open areas on top of the mountain. Ski trail development should be undertaken only for natural snow and should have a minimum forty (40) foot width. One-half acre per skier results in a relatively crowded condition on trails.

f. Skating. Only shallow water areas should be considered, and the ice must have a minimum four (4) inch depth. Skating areas can also be made by flooding parking lots or level fields which have been designed for this purpose. Skating areas which are sheltered and shaded by evergreens or by a hill or mountain are ideal.

g. Sledding and Tobogganing. Slopes for sledding and tobogganing should have a north-northeast exposure surrounded by evergreen shade. Sledding slopes may range from five (5) to forty (4O) percent with level run-out at the bottom; slopes for tobogganing may range from ten (10) to forty-five (45) percent with level run-out space. Since snow conditions vary from day to day, control over the use of the slopes may need to administered on a daily basis.

h. Iceboating. Iceboating requires water bodies of approximately two hundred and fifty (250) acres or more with good ice coverage and depth for at least several days each year. However, iceboating does provide an opportunity to use existing boating facilities during the off-season. Where iceboating and skating occur on the same water body, the areas for both should be clearly designated and separated.

i. Target Shooting. Target shooting activities include gun, skeet, and trap ranges (i.e., shooting within limited designated areas). Shooting ranges should have a north-northeast orientation. The major consideration in developing shooting areas, however, is safety for both humans and wildlife. Pistol and small-bore rifle ranges should be contained by earth berms and overhead baffles which reduce the danger from stray rounds and lessen the noise which accompanies shooting activities.

j. Boating (Motor). Motorboating requires large surface areas of water. As a rule, one (1) motorboat per two (2) acres is the maximum acceptable density for high-speed motorboating, including water-sking. For low-speed motorboating (ten horsepower or less), one (1) boat per acre is the maximum density. Shallow waters, very irregular shorelines, and slow circulation of water through the system can decrease the number of boats allowable per acre. Lakes which are in natural settings or which contain less than eight hundred (800) acres of surface water may need horsepower limitations to avoid the problems associated with noise, pollution, and safety. On lakes which receive

heavy use by boaters, as well as other recreation participants, zoning the water area for different uses may help avoid safety problems. Examine existing aquatic life, since some types cannot withstand heavy boat traffic

Know the prevailing wind direction, open reach of water, size and depth of maneuvering areas, currents, fluctuating water levels, winter drawdowns, and siltation characteristics. The direction of prevailing winds and the existence of sheltering headlands will affect the choice of marina location.

6. OFF-ROAD VEHICLES:

a. ORV's are motorized recreational vehicles manufactured or adapted for off-highway use and may include trailbikes, four-wheel drive vehicles, all-terrain vehicles, and snowmobiles.

b. If land exists which can be adapted for ORV use, for example, lands which have been formerly used for strip or lead mining operations, they can be used by ORV's with little impact.

c. DODINST 6050.2 has established unifonm policies, procedures, and criteria for designation of areas and trails where off-road and special sport vehicles may be permitted, as well as appropriate operating conditions for the vehicles. Such activities may be permitted only where specifically designated. All other areas are considered closed.

d. Off-road vehicles should not be allowed on other recreation trails, except in the case of snowmobiles which may use existinq trails during off-season winter periods. Snowmobile trails should not he traveled if the snow depth is less than four (4) inches. Even then, areas which receive heavy use require continuous maintenance.

7. COMPATIBLE RECREATION USES:

a. As a general rule, those activities which are noisy or which may prove hazardous to nonparticipants require clear separation from other recreation activities, but the majority of recreation activities profit from some interaction, even if only in terms of pedestrian connection, with other recreation activities. Locate all concentrated activities in a single area for environmental reasons. This also reduces the number of support facilities such as shelters, restrooms, trash collection, and parking lots which otherwise are needed for each activity, economizes on the amount of utilities required and limits the number of necessary access points, which is particularly beneficial for controlled access. Maintain continuing or, at least, periodic records of use in developed outdoor recreation areas. These records can be kept by taking traffic and use counts, making surveys, and keeping track of licenses or permits issued for such activities as hunting and fishing. Use counts and/or estimates should be checked against current recreation standards and against the planned capacities of the existing recreation facilities. When an outdoor recreation area is overused, the wear and tear may quickly become visible. However, it may be too late to avoid irreparable damage to or costly repair of the natural resources. It is important to be able to anticipate demand exceeding capacity before the damage is done. If the demand is large enough, and if it is predicted in

time, new areas and facilities may be developed, existing facilities may be expanded, or measures may be taken to control the numbers of people who use each outdoor recreation area.

b. An obvious method of controlling the number of people who use an outdoor recreation area is to control or limit access. Vehicular and pedestrian access may be limited by the number and location of roadways pathways made available. In addition, entrances may be gated and closed when an area has reached capacity. The major drawback to gates is the personnel required to count visitors and detenmine the proper times for closing andreopening of facilities. Gates can be employed during times of anticipated peak usage, such as weekends or holidays, so that full-time gatekeepers are not necessary. Another means of preventing overuse is to issue permits or licenses for outdoor recreational activities. Depending upon installation policy, fees for permits and licenses may have a limiting effect upon use. Staggering or rotating use can also protect outdoor recreation areas from overload. Where there is more than one facility for such activities as camping or picnicking, use can be shifted periodically from one site to another so that one site may be closed to allow the natural resources to “rest" and rejuvenate as well as to permit repair.

c. Noise, air, and water pollution all have detrimental impact upon outdoor recreation areas. Sources of pollution, both on and off the installation, including areas considerably removed, may affect an outdoor recreation area and should be identified. Data concerning the amount and severity of pollution, as well as any proposed control measure, should be collected.

d. Several man-made activities and structures, as well as some natural phenomena, pose health and safety problems in or near outdoor recreation areas. Among the human hazards are: low-flying aircraft, railroad crossings, overhead and underground utilities, mines (including working or nonworking deep mines, strip mining pits and fills, quarries, and gas and oil wells), ammunition storage and explosives, firing ranges, and hunting areas. Natural hazards include: waterfalls and rapids; grass, brush, and forest fires; flooding; poisonous plants; insects; snakes; bog and quicksand areas; and natural disasters such as earthquakes, avalanches, hurricanes, tornadoes, and lightning.

8. FEES:

Consider charginp appropriate user fees at all installations having outdoor recreation programs that involve natural resources management (hunting, fishinp, trapping, etc.). The users should bear an appropriate proportion of the cost of providing the recreation opportunity. (See Chapter 4, Vol. II, of this manual.)

APPENDIX C
OUTDOOR RECREATION
COOPERATIVE AGREEMENT
(MODEL)

(INSTALLATION)

Purpose and Authority:

This cooperative agreenent by and between the Department of Defense functioning through the Installation Commanding Officer (installation), under the authority contained in 16 USC 670a-670f, hereinafter referred to as the Installation, the Department of Interior functioning through the Regional Director of the National Park Service under the authority contained in 16 USC 670c, hereinafter referred to as the Service; and the State of (state) functioning through the Director, (state outdoor recreation agency), under the authority contained in (state authority), hereinafter referred to as the State, is entered into for the purpose of providing the Installation Commanding Officer, (installation), with professional and technical information necessary to coordinate actions pertaining to the operation, development, management and protection of outdoor recreation resources at (~nstallat~on). This agreement ~s within the purview of the policies set forth in Public Law 91-190, National Environmental Policy Act (42 USC 4321, 4331-4335, and 4341, 4347), Public Law ~s8-29, Outlook Recreation - Federal State Programs (16 USC 460L-460L-3), Public Law 86-797 as amended by Public Law 9O-465 and Public Law 93-452, Conservation Programs on Military Reservations (16 USC 67Oa-670f), Public Law 90-542, Wild and Scenic Rivers Act (16 USC 1271-1287), Public Law 9~-543, National Trails System Act (16 USC 1241-1249), Public Law 89-665, National Historic Preservation Act (16 USC 47O-47am), Executive Order 11644, Use of Off-Road Vehicles on the Public Lands, and under the principles of multiple use and sustained yield as defined in Public Law 86-517 (16 USC 52~531). Outdoor recreation as used in this agreement includes natural resources which provide or may provide opportunities for outdoor recreation. It does not include recreation facilities normally associated with urban developments such as playgrounds, golf courses athletic field/courts swimming pools, trailer camps, and marinas. Fish and wildlife conservation and management is covered by Public Law 86-797 (16 USC 670a-670b, 1O USC 2671) and is not to be included in this agreement.

Responsibilities:

Whereas, the Commanding Officer, (installation) has jurisdiction over (installation) and has the trusteeship responsibility to develop, enhance, operate, protect, maintain and control public access to the outdoor recreation resources thereon, and

Whereas, the Service is the agency of the Federal Government primarily responsible for the development and coordination of outdoor recreation opportunities, resources

and plans with exclusive Federal responsibility for the administration of the Land and Water Conservation fund, and

Whereas, the (state outdoor recreation agency) was created under the laws of the state of (state) to provide an adequate and flexible system of enhancement, development, operation and maintenance of outdoor recreation resources in (state), and

Whereas, it is the mutual desire of (installation), the Service and the State to work in harmony for the common purpose of developing, enhancing, and maintaining the outdoor recreation resources at (installation) in the best interest of the people served by these resources.

Therefore, it is mutually agreed-that:

Section 1. JOINT ACTIVITIES OF THE INSTALLATION, SERVICE AND STATE AGENCY -

1. The Service and State will act in an advisory capacity to (installation) on matters pertaining to the management of outdoor recreation resources on lands administered by (installation). Actual management of the outdoor recreation resources will remain the responsibility of the Installation Commanding Officer.

2. An interdisciplinary approach shall be promoted by all interested parties to resolve problems relating to multiple use management of natural resources.

3. All parties will jointly meet at least once annually to discuss matters relating to the conservation and management of outdoor recreation resources on or affecting the lands administered by (installation), such as law enforcement, education and interpretive programs, cooperative studies, plans, surveys, fee collection and other matters as may be relevant to outdoor recreation resource management within the concept of multiple use management.

4. Nothing in this Cooperative Agreement is intended to modify in any manner the present cooperative program with other public agencies, conservation groups or educational institutions, or modify any rights granted by treaty or otherwise to any Indian tribe or member thereof. In the event of a conflict between this Cooperative Agreement and the Memorandum of Understanding between the Department of Interior and the Department of Defense provisions in the Memorandum of Understanding will prevail.

5. This Agreement may be modified or amended by mutual agreement by the authorized representatives of the three agencies provided, however, the Installation Commanding Officer upon written notice to the Service and the State shall have the right to terminate this Agreement, in whole or in part, at any time when in his opinion the instal1ation's mission or other national security requirements render termination or modification a necessity.

SECTION II. INSTALLATION RESPONSIBILITIES -

Within the limitations of the assigned military mission and the availability of funds and manpower, (installition) agrees to:

1. Provide access to authorized agents and employees of the Service and State in the Execution of this cooperative agreement unless security or other military exigency should prevent the granting of such access.

2. Maintain, operate, and manage outdoor recreation resources and activities, in accordance with the approved installation outdoor recreation management section of the installation's natural resources management plan.

3. Protect and preserve special interest areas.

4. Provide information on on the development of installation outdoor recreation plans to the service, state, and appropriate Engineering Field d Division of Naval Facilities Engineering Command.

SECTION III. SERVICE RESPONSIBILITIES -

Consistent with its primary objectives and responsibilities, the Service agrees within the limitation of funds and personnel to:

1. Provide technical consulting assistance in developing the outdoor recreation resources and activities for the aesthetic, recreational and economic benefit of the public.

2. Provide technical assistance in the resolution of special problems that may arise subsequent to the execution of this agreement.

3. Participate in recreation resource surveys and make recommendations on protecting, developing and interpreting special interest areas.

4. Further an understanding of recreation and recreation resources by providing related research and assisting in related training programs.

5. Provide copies of related field reports, studies and evaluations to the Installation Commanding Officer and State.

SECTION IV. STATE RESPONSIBILITIES -

Within the availability of funds and personnel, the State agrees to:

1. Assist in the determination of protected demands by installation personnel for various outdoor recreation activities and provide management recommendations for restoring, maintaining, developing or enhancing recreational facilities and activities.

2. Assist in determination of carrying capacity (level of recreational use) to avoid damage to public health, safety, resource itself and other resource values.

3. Provide copies of related field reports, studies and evaluations to the Installation Commanding Officer and Service.

4. Provide assistance in related training programs.

5. Furnish one copy of the state Outdoor Recreation Plan to the Installation Commanding Officer.

Public Access: (See Appendix 5-A, of Vol. II, NAVFAC P-73, Real Estate Operations and Natural Resources Management Manual.)

It is the policy of the Department of Defense to permit public access to outdoor recreation resources to the greatest degree possible, consistent with the installation's safety and security requirements and its available manpower and natural resources to support such activities without degradation or impairment of environmental qualities or of military programs.

This cooperative agreement will become effective upon the date subscribed by the last siqnatory and shall continue in full force indefinitely until terminated by any of the parties signing this Agreement. Any party terminating participation in the agreement shall give written notice of said termination to the other parties to the agreement.

DATE DEPARTMENT OF THE NAVY

BY

TITLE

INSTALLATION

DATE NATIONAL PARK SERVICE

BY

TITLE

DATE STATE

BY

TITLE
ORGANIZATION

CHAPTER 6: CONSERVATION AWARDS

1. SCOPE:

This chapter provides guidance and assigns responsibilities for the conduct of the Navy Natural Resources Conservation Awards Program.

a. Installation Award. The installation award program applies to installations and facilities located in the United States, Puerto Rico, Guam, The Trust Territory of the Pacific Islands, and the Virgin Islands. Installation awards are offered in alternate years, in two (2) categories, to recognize smaller installations as well as larger ones:

Category A: Installations with lO,OOO acres or less included in the integrated natural resources management plan are eligible for nomination in years ending in an odd number.

Category B: Installations with over lO,OO0 acres included in the natural resources management plan are eligible for nomination in years ending in an even number. An installation is eligible for nomination only when all required sections of the natural resources management plan and all required cooperative agreements are current or being revised/prepared and will be current before competition for the Secretary of Defense Award. An installation winning the Secretary of the Navy Award is ineligible to compete for an award the next time (two (2) years later) other installations in its category are eligible. However, an installation ineligible to compete for an award is eligible for a special recognition citation.

b. Individual Award. The individual award program applies worldwide. Individual award nominees are not necessarily associated with an installation program.

2. DEFINITIONS:

a. Natural Resources Conservation Awards. An award granted annually to Naval installations which conducted outstanding conservation programs during the preceding three (3) calendar years and individual (military or civilian) who made outstanding contributions to the Navy Natural Resources Program during the preceding two (2) calendar years.

b. Engineering Field Division Award. The Commander/Commanding Officer of a Naval Facilities Engineering Command, Engineering Field Division (EFD) may present an award to one of the installations within the EFD area of cognizance. Suitable recognition may also be presented to the runner-up installation nominee. The EFD Award winner becomes a nominee for the Secretary of the Navy Natural Resources Conservation Award. Alternatively, the EFD reviews each nomination for compliance with eligibility and documentation criteria and forwards all installation nominations that meet the criteria as nominees for the Secretary of the Navy Award.

c. Secretary of the Navy Awards. The Secretary of the Navy selects one (1) installation winner, one (1) installation runner-up, and one (1) individual winner. The winners of the Secretary of the Navy Awards are nominated for the Secretary of Defense Natural Resources Conservation Award where they will compete with nominees from the other military departments.

d. Secretary of Defense Awards. The Secretary of Defense will present an award to the DOD installation which conducted the best natural resources conservation program during the three (3) prior calendar years, and to an individual who has made the most outstanding contributions to the DOD natural resources program during the preceding two (2) calendar years.

e. Special Recognition Citations. The Secretary of the Navy may award citations annually for special achievements in support of the Navy natural resources program to individuals, installations, shore establishment commands, and operating forces commands. Recipients of special recognition citations will be selected from nominees for the installation and individual awards, from letters of recommendation from any echelon of command, and from other information sources.

3. REFERENCES:

a. DODINST 47OO.2, The Secretary of Defense Awards for Natural Resources and Environmental Management

b. SECNAVINST 6240.6E, Department of the Navy Environmental Protection and Natural Resources Program

c. OPNAVINST 509O.l, Environmental and Natural Resources Protection Manual

4. AUTHORITY:

Reference (a) provides policy, procedures, and assigns responsibilities for the Secretary of Defense Natural Resources Conservation Award Program. References (b) and (c) provide basic Navy polices and procedures regarding the Secretary of Defense and Secretary of the Navy Natural Resources Conservation Awards. Reference (c) also assigns to the Commander, Naval Facilities Engineering Command Headquarters, the responsibility for overall management of the Navy Natural Resources Program including establishing program management guidance and issuing appropriate instructions.

5. RESPONSIBILITIES:

a. Installation Commanding Officers are responsible for submitting installation nominations to the appropriate EFD (if they wish to compete for the award). Installation nominations must be endorsed by the host activity's major claimant.

b. Installation Commanders/Commanding Officers are responsible for submitting individual nominations via their major claimant, to Commander, Naval Faci1ities Engineering Command Headquarters (Code 2042), for consideration of the Secretary of the Navy Natural Resources Awards Committee.

c. EFD Commanders or Commanding Officers are responsible for conducting EFD Award programs and Submitting to Commander, Naval Facilities Engineering Command Headquarters (Code 2O42), the winning installation as the EFD nominee for the Secretary of the Navy Award or alternatively reviewing each installation nomination for compliance with eligibility and documentation criteria and forwarding all installations nominations as nominees for the Secretary of the Navy Award.

6. JUDGING CRITERIA:

a. The following areas are considered in judging installation nominations.

(1) Awareness of existing directives and applicable laws.

(2) Planning and achievement in the areas of forestry, fish and wildlife, outdoor recreation, endangered species, and land management.

(3) Innovation in management of the natural resources program.

(4) Command interest and attention.

(5) Designation of an installation natural resources program manager/coordinator.

(6) Training of personnel in natural resources technical duties as well as awareness of the Command's specific and unique natural resources.

(7) Command participation and coordination with state, community, and regional natural resources agencies.

(8) Variety of benefits derived from management of natural resources.

(9) Motivation and attitude of installation personnel toward the natural resources program.

(lO) Designation of special interest areas including archaeological, historical, botanical, zoological, geological, natural, scenic, wild, research, and resource conservation areas.

b. Individual nominations are judged solely on accomplishments which contributed to the Navy Natural Resources Program.

c. Documentation.

(1) Installation nominations will be narrative in style, address the items listed in paragraph 6a, above, and cover the three (3) year achievement period ending the preceding December 31. They should be typewritten or printed, and fastened or bound in folders not to exceed 9 x 12 inches. The submission should not exceed fifty (50) pages including text and

illustrations. Appendixes directly supporting the text may be added. Nominations will be judged on substantive content and not on elaborateness of artwork. Nominations shall be prepared such that they can be used by the installation for public and conservation education. Highlights, explanatory captions, tables, charts, or other formats that make the content readily understood may be included. Initiatives and achievements in each area of the natural resources program shall be clearly indicated. Pollution abatement activities may not be included unless they are related directly to natural resources conservation. Installation nominations shall follow the format provided as Appendix 6-A; supplemental guidance regarding preparation of installation nominations is provided as Appendix 6-B.

(2) Individual nominations will be in narrative form, may not exceed four (4) pages in length, and will describe the nominee's accomplishments in natural resources management and contributions to the Natural Resources Program during the preceding two calendar years. Photographs of the individual should not accompany the nomination.

(3) Letters recommending a special recognition citation may be submitted via Commander, Naval Facilities Engineering Command (Code 2O42), to the Secretary of the Navy Natural Resources Awards Committee.

d. EFD Award Committees. Each EFD which conducts an EFD Award proqram shall establish an award committee each year to judge nomination submittals for the EFD Award and recommend to the EFD Commander/Commanding Officer a winner and runner up. Award committees shall be composed of distinguished conservationists from organizations and agencies having a primary interest in the proper management and enhancement of natural resources. Judging time, number of judges, location, and procedures shall be determined by each EFD.

e. Secretary of the Navy Awards Committee. Naval Facilities Engineering Command Headquarters insures an awards committee is established each year, in accordance with reference (b), to judge nomination submittals and recommend winners to the Secretary of the Navy.

f. Awards Announcement and Presentation.

(1) If an EFD award program is conducted, the Commander, or Commanding Officer of each EFD will announce the EFD award winner no later than 1 March of the nomination year and present an award recognition item(s).

(2) The Office of the Secretary of the Navy wi11 announce the winner of the Secretary of the Navy Awards.

(3) Commander, Naval Facilities Engineering Command will arrange for presentation of appropriate trophies, plaques, certificates, and/or other award recognition.

g. Installation Award Time Table:

Three (3) year period ending 31 December, prior to the nomination year.	Installations develop programs, make evaluations, and develop submissions.
1 February of nomination year.	Installation Commanders and Commanding Officers submit nominations, with major claimant endorsement, to EFD.
On or about 15 February of nomination year.	EFDs conduct judging for EFD awards or review nominations for compliance with criteria.
1 March of nomination year.	EFDs transmit winning submissions or all nominations that meet criteria to NAVFACENGCOMHQ (Code 2O42).
On or about 15 March of nomination year.	Award Committee evaluates nominations and recommends winners to the Secretary of the Navy via NAVFACENGCOMHQ and CNO (OP-45).
Prior to 15 May of nomination year.	Secretary of the Navy submits nomination for the SECDEF installation award.

h. Individual Award Tlme Table:

Two (2) calendar years ending 31 December, prior to nomination year	Individual makes outstanding contributions to Natural Resources Program.
1 February of nomination year.	Activity Commander/Commanding 0fficers submit nominations, to NAVFACENGC0MHQ (Code 2O42).
On or about 15 March of nomination year	Award Committee evaluates nominations and recommends winner to the Secretary of the Navy via NAVFACENGCOMHQ and CNO (OP-45).
15 May of nomination year.	Secretary of the Navy submits nomination for the SECDEF individual award .

APPEND1X A
INSTALLATION NOMINATIONS (FORMAT)

A. INTRODUCTI0N

1. Mission, approximate civilian and military population of the installation (unless classified), and total acreage of the installation.

2. Total acres under natural resources management, followed by a description of program component acreage (for example, improved, semi-improved, and unimproved acreage; acres of managed forests, wildlife, grazing, agriculture, unique natural areas, lakes, or wetlands; miles of streams or coastline; and acres available for hunting, fishing, and other outdoor recreation).

3. Other natural features of the installation, such as geological and botanical features and archaeological assets.

B. PROGRAM SUMMARY

1. Describe the most noteworthy program features and accomplishments of the past three (3) years.

2. Describe the degree of attainment of natural resources management plan objectives.

C. BACKGROUND

1. List all management plans and cooperative agreements and the date of preparation or last revision of such plans or agreements. Describe the main objectives of each plan.

2. Describe the organization and staffing of the installation’s natural resources management program.

3. Describe any installation committees or boards that influence its natural resources program.

D ACCOMPLISHMENTS

Describe activities and accomplishments in the following areas (as applicable):

1. Land use management.

a. Erosion control.
b. Water quality protection.
c. Water conservation.
d. Prime and unique farmland protection.
e. Agricultural land management.

f. Natural resources improvements and benefits due to outleases.
g. Grounds improvements, landscaping.
h. Anti-litter proqrams.
i. Considerations in new construction planning.
j. Coordination and cooperation with U.S. Department of Agriculture Soil Conservation Service, Ccunty Agricultural Extension Service, and other land management agencies.

2. Forest management.

a. Multiple-use coordination of forestry, outdoor recreation, wildlife, esthetics, and endangered species.
b. Reforestation of depleted forests.
c. Timber stand improvement.
d. Improvements in planning, budgeting, and use of manpower, supplies, and equipment.
e. Use of prescribed burning.
f. Pest management activities.
g. Establishment and protection of unique forest areas.
h. Cooperative efforts with U.S. Forest Service, state forester, and similar groups or agencies.

3. Fish and wildlife

a. Variety of species and habitats.
b. Protection of federal- and state-listed threatened and endangered species and their habitats.
c. Permanent food plots, wildlife openings, escape cover, and the like.
d. Game and non-game fish and wildlife habitat improvements.
e. Reintroductions and stocking.
f. Degree of access and use of hunting and fishing opportunities by installation personnel and the general public.
g. Improvements in permit program; fee schedule for hunting, fishing, or other opportunities; ratio of permits to general public versus DOD personnel.
h. Identification and protection of significant wildlife resources.

4. Other natural resources. Protection of areas of cultural, archeological, geological, or ecological significance.

S. Outdoor recreation.

a. Parks, camping, picnicking, swimming, hunting, horseback riding, boating, bird-watching, and trails (nature, hiking, and bicycling).
b. Off-road vehicle use and control.
c. Estimated number of visitors (general pubic and DOD personnel).
d. Cooperation and coordination with the National Park Service and state and local outdoor recreation agencies.

6. Conservation education (on and off installation).

a. Natural resources management regulations.
b. Gun and water safety, woodmanship, camping, and outdoor ethics programs.
c. Scouting, public school classes, and other group activities related to conservation.

7. Community relations.

a. Public awareness.
b. Involvement in conservation programs (on and off the installation).
c. Affiliation of installation personnel with civic and private conservation organizations and professional conservation societies.
d. Cooperation with federal, state, local, and private conservation organizations and academic institutions.

APPENDIX B
SUPPLEMENTAL GUIDANCE
INSTALLATION AWARD NOMINATION

Highlight initiatives that go beyond compliance with regulatory requirements and demonstrate leadership in managing natural resources.

Clearly state program objectives and degrees of achievement.

Include the entire range of activity (for example, erosion control, agricultural outleases, forestry wildlife, outdoor recreation, historic preservation, etc.). If any pollution abatement accomplishments are included, show the direct relationship to natural resources program objectives.

Whenever possible, show the use of a variety of techniques and involvements (for example, erosion control to benefit wildlife, recycling program proceeds to finance conservation projects, use of students and youth groups, cooperative arrangements among groups and with other agencies).

Point out those projects and accomplishments that benefited neighborhood communities as well as DOD employees.

Whenever possible, include evidence of command support and staff and tenant involvement.

Summarize the scope and status of management plans and agreements.

Point out evidences of compatibility and interdependence of wise management of natural resources and the performance of the military mission.

Make it easy for judges to see improvements resulting from deliberate scientifically-sound management practices. Draw a picture of the starting point (first year) and the finish line (third year). Clearly indicate which resources were applied to achieve the improvements.

Point out elements of the program and activities that were available to the public; include education efforts.

Highlight cases of multiple use of natural resources.