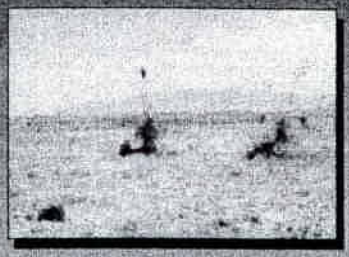
# Naval Space Surveillance Station Elephant Butte





# INTEGRATED NATURAL RESOURCE MANAGEMENT PLAN

## ENVIRONMENTAL ASSESSMENT • June 2001

**Final Submittal**

Prepared for:
**Naval Space Surveillance Station**
**Elephant Butte, NM**

DEPARTMENT OF DEFENSE
DEPARTMENT OF THE NAVY

# FINDING OF NO SIGNIFICANT IMPACT FOR IMPLEMENTATION OF AN INTEGRATED NATURAL RESOURCE MANAGEMENT PLAN AT NAVAL SPACE SURVEILLANCE STATION, ELEPHANT BUTTE, NEW MEXICO

Pursuant to section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality regulations (40 CFR Parts 1500-1508) implementing the procedural provisions of NEPA, the Department of the Navy gives notice that an Environmental Assessment (EA) has been prepared and an Environmental Impact Statement is not required for implementation of a compliance-based Integrated Natural Resource Management Plan (INRMP) for Naval Space Surveillance Station (NSSS), Elephant Butte, New Mexico.

The proposed action is to modify the existing natural resources management practices at NSSS Elephant Butte to develop and implement an INRMP consistent with the military use of the property and the goals and objectives established in the Sikes Act Improvement Act (SAIA). The goal of the proposed action is to implement an ecosystem-based conservation program that provides for conservation and rehabilitation of natural resources in a manner that is consistent with the military mission; integrates and coordinates all natural resources management activities; and provides for sustainable multipurpose uses of natural resources.

NSSS Elephant Butte encompasses an approximately 203-acre site leased by the Navy from a privately owned ranch in Sierra County, New Mexico. The station currently has a low natural resource value because the majority of its grounds are either mowed or graded bare to reduce risk of wildfires and the station is surrounded by fences that restrict wildlife access. Additionally, because of security reasons the station is not accessible to the public.

The following management alternatives were considered for the proposed action: the "no action" alternative; a compliance and stewardship-based INRMP; and a compliance-based INRMP. The No Action alternative is continued implementation of the objectives and practices under the existing natural resource management programs at NSSS Elephant Butte and therefore, will not fulfill the goals and objectives established in the SAIA. For this reason, the No Action alternative was rejected. The compliance and stewardship-based INRMP includes installation of raptor perches and nest boxes, which the New Mexico Department of Game and Fish and the US Fish and Wildlife Service recommend against, and other stewardship and administrative measures that are unlikely to be implemented due to budget limitations. For this reason, the compliance and stewardship-based INRMP was rejected. The proposed compliance-based INRMP would implement those natural resources management actions necessary to comply with existing federal laws, regulations, and military mission requirements, as well as some stewardship measures to improve erosion control and enhance wildlife protection and management.

There will be no significant impacts upon any federally listed threatened or endangered species, critical habitat, wetlands, or archeological or historic resources. No federally listed threatened and endangered species, critical habitat, wetlands or cultural resources have been identified at

NSSS Elephant Butte. Additionally, there will be no significant impacts to water quality, air quality or the health and safety of children or minority and low-income populations. Since the proposed INRMP includes measures designed to protect, enhance and restore natural resources at NSSS Elephant Butte, there are expected to be beneficial impacts from the proposed action.

Based upon the information gathered during the preparation of the EA, the Navy finds that the implementation of an INRMP for NSSS Elephant Butte would not significantly impact human health or the environment.

The EA prepared by the Navy addressing this action is on file and interested parties may obtain a copy from Naval Space Command, 5280 Fourth Street, Code N43 Attn: Mr. George Buffkin, Building 1700, Dahlgren, VA 22448-5300, Telephone (540) 653-5553. A limited number of copies of the EA are available to fill single copy requests.

9/26/01
Date

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**Proposed Action**: Implementation of an Integrated Natural Resources Management Plan at the Elephant Butte Naval Space Surveillance Station, New Mexico

**Lead Agency**: Department of the Navy

**Type of Statement**: Final Environmental Assessment

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**Abstract**: Elephant Butte Naval Space Surveillance Station encompasses an approximately 203-acre (82-hectare) site leased by the Department of the Navy from the R.E. Turner Ranch in Sierra County, New Mexico. The Station currently has a low natural resource value, in large part because the vast majority of its grounds are either mowed or graded bare to reduce the risk of wildlfires and because the Station is surrounded by fences which restrict wildlife access. Additionally, because the Elephant Butte Naval Space Surveillance Station is located within a privately owned ranch, and because of security concerns, the Station is not accessible to the public. Implementing an Integrated Natural Resource Management Plan would improve the quality of on-Station natural resources and help Station personnel to avoid causing adverse environmental effects during operations. Under either the 1998 Draft Integrated Natural Resource Management Plan or the modified implementation alternative, none of the natural resource management measures would result in significant environmental impacts. However, due to the requirement that the Station continue to be mowed and graded to reduce wildfire danger, the natural resource values at the Station would be expected to remain low. Furthermore, Elephant Butte Naval Space Surveillance Station will remain closed to public access for security reasons.

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# EXECUTIVE SUMMARY

The Department of the Navy has prepared this Environmental Assessment (EA) to address the proposed implementation of an Integrated Natural Resources Management Plan (INRMP) at Elephant Butte Naval Space Surveillance Station (U.S. Navy 1998). There is currently no natural resources management plan in place at Elephant Butte Naval Space Surveillance Station (NSSS Elephant Butte, or "Station"), although the Station is operated in compliance with applicable federal natural resource laws, regulations, and Executive Orders.

NSSS Elephant Butte is located in southwestern New Mexico and is part of the Naval Space Command's (NAVSPACECOM) fully integrated Space Surveillance System. This Station is one of nine such facilities in the southern United States that comprise the Space Surveillance System. The proposed INRMP provides a natural resources management strategy for ongoing operations at the 203-acre (82-hectare) Station.

The goal of the INRMP is to implement an ecosystem-based conservation program that provides for conservation and rehabilitation of natural resources in a manner that is consistent with the military mission; integrates and coordinates all natural resources management activities; and provides for sustainable multipurpose uses of natural resources. The management objectives are to integrate wildlife management and land management at the Station, as practicable and consistent with the military mission and established land uses.

There are few substantive issues related to the military use of NSSS Elephant Butte, primarily due to (A) the isolated nature of the Station, which is located within a privately owned ranch; (B) the lack of amenities that would make access to the station desirable to the public; and (C) the low level of natural resources present on station. In consideration of these factors and the conditions present at NSSS Elephant Butte, the INRMP focuses on the following:

- reducing mowing to improve the value of on-Station vegetation for wildlife
- providing noxious weed control through native planting
- conducting erosion control measures along the antenna array berms, including the use of erosion control fabrics and seeding with native plants.
- implementing wildlife protection and management measures to reduce the effects of military operations (e.g., reducing tractor speed during mowing to improve the chances of observing and avoiding snakes and lizards in the path of the tractor) and to encourage wildlife use of the Station
- reducing insecticide use
- minimizing potential conflicts with bison and pronghorn raised at the R.E. Turner Ranch (from which the NSSS Elephant Butte land is leased) by driving slower on the access road leading to the Station.

This EA addresses implementation of the Draft INRMP for NSSS Elephant Butte that includes compliance measures (which are required) and stewardship measures (which are optional). In addition, the proposed Draft INRMP contains administrative measures which would help provide a better understanding of wildlife use at the Station and allow better coordination with other agencies, but which would not have any noticeable effect on the physical or human environment.

Implementation of the Draft INRMP would benefit natural resources at NSSS Elephant Butte, especially with regard to biological resources. This alternative would also have minor beneficial impacts on soils and water quality because it would reduce erosion from the antenna array berms. None of the natural resource management measures that would be implemented under this alternative would result in significant environmental impacts, in large part because these measures were specifically designed to improve the quality of natural resources on-Station.

This EA also addresses implementation of a modified INRMP implementation alternative, and the No Action alternative. The modified INRMP implementation alternative would implement most of the measures included in the Draft INRMP; however, it would exclude some of the stewardship and administrative measures. Specifically, this alternative excludes the construction of raptor perches and nest boxes based on New Mexico Department of Game and Fish and U.S. Fish and Wildlife Service requests not to construct these items at the Station. The modified INRMP implementation alternative would also improve biological resource values and reduce erosion, and it would not result in any significant environmental impacts.

The No Action Alternative is continued implementation of the objectives and practices under the existing natural resource management programs at NSSS Elephant Butte. On-going practices used for the management of natural resources at NSSS Elephant Butte would continue and there would be no change to the objectives of the current natural resources management programs. Although the No Action Alternative would not realize the natural resource management benefits of an INRMP, it would also not result in adverse environmental impacts.

# 1.0 INTRODUCTION/PURPOSE AND NEED

The Department of the Navy has prepared this Environmental Assessment (EA) to address the proposed implementation of an Integrated Natural Resources Management Plan at Elephant Butte Naval Space Surveillance Station (U.S. Navy 1998). This EA addresses implementation of a 1998 Draft Integrated Natural Resources Management Plan (INRMP), a modified INRMP implementation alternative, and the No Action alternative (see Chapter 2.0, Alternatives). There is currently no natural resources management plan in place at Elephant Butte Naval Space Surveillance Station (NSSS Elephant Butte, or "Station"), although the Station is operated in compliance with applicable federal natural resource laws, regulations, and Executive Orders (See Section 1.3, Environmental Documentation).

NSSS Elephant Butte is located in southwestern New Mexico and is part of the Naval Space Command's (NAVSPACECOM) fully integrated Space Surveillance System. This Station is one of nine such facilities in the southern United States that comprise the Space Surveillance System (see Figure 1-1). The system uses radio frequency (RF) energy to detect satellites in both low and high orbit. The proposed INRMP provides a natural resources management strategy for the ongoing operations at the 203-acre (82-hectare) Station.

The purpose and need for the proposed action and the environmental documentation process are discussed below. Subsequent chapters within this EA describe the three alternatives (including the No Action Alternative), the affected environment, and the environmental consequences that would occur with the implementation of each alternative.

## 1.1 LOCATION

NSSS Elephant Butte is located in Sierra County, New Mexico, approximately 38 miles (61 kilometers) northeast of Truth or Consequences and approximately 130 miles (209 kilometers) south of Albuquerque (see Figure 1-2). The Station is located in the Chihuahuan desert on approximately 203 acres (82 hectares) of land leased by the Department of the Navy from the R.E. Turner Ranch (see Figure 1-3). The Station is located to the east of the Rio Grande River on a plain approximately 330 feet (100 meters) above the river. The area is bordered on the North by lava fields, on the East by the San Andres Mountains, on the West by the Fra Cristobal Range and on the South by the Dona Ana Mountains. The land surrounding the Station is undeveloped open desert.

The Station is accessible via a 20-mile-long (32-kilometer-long) dirt road beginning in the community of Engle.

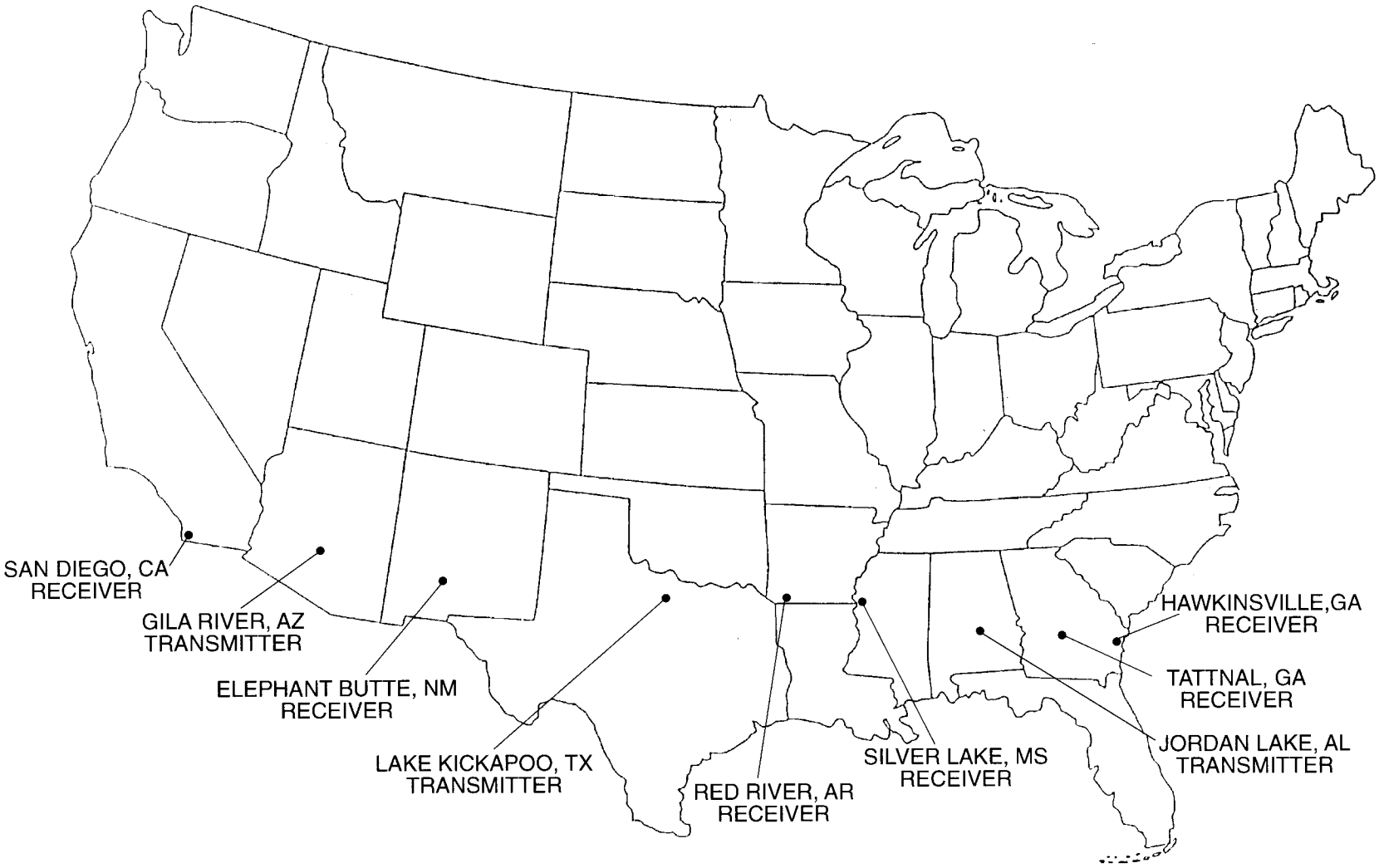
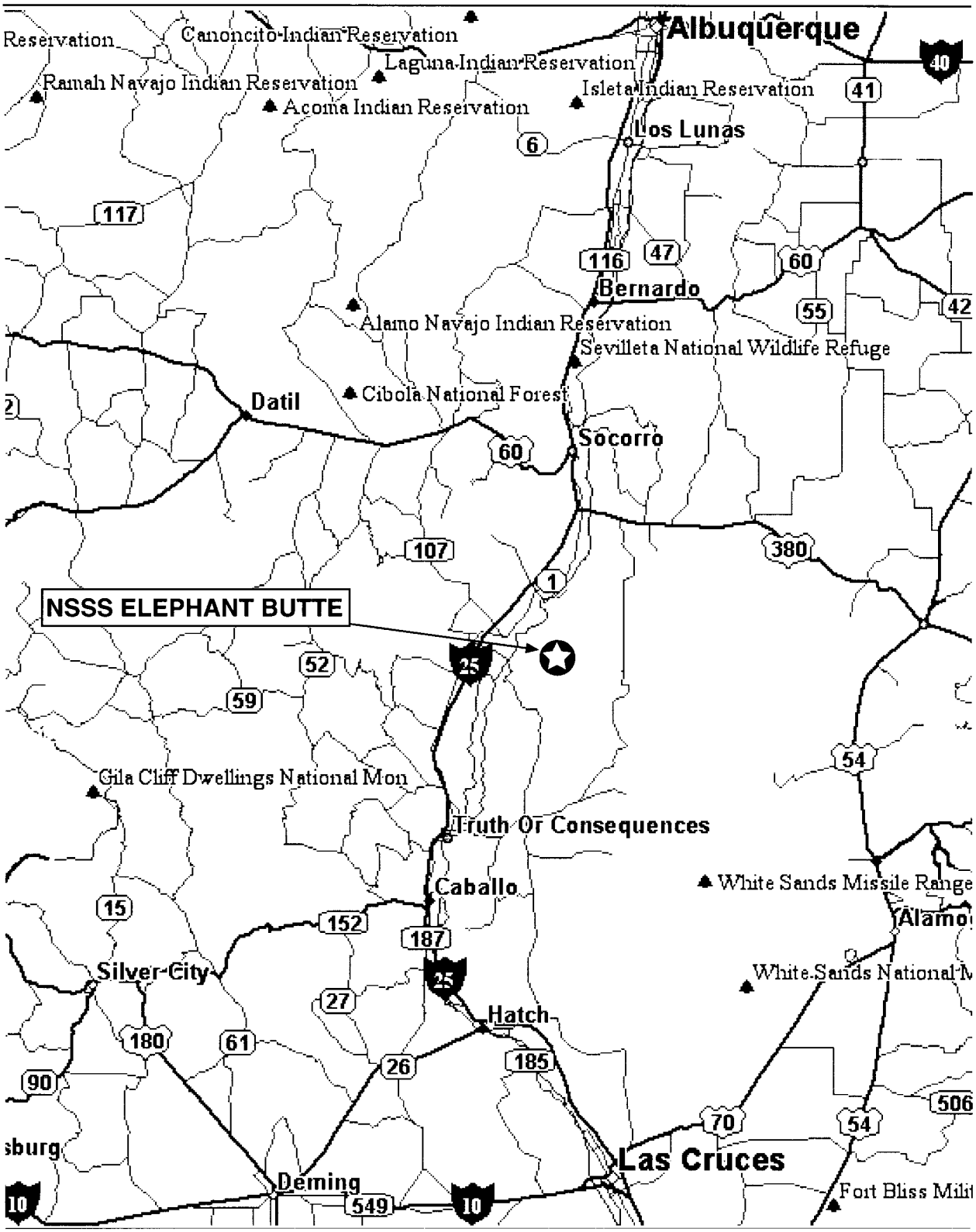



**Figure 1-1**
**Naval Space Surveillance System Stations**



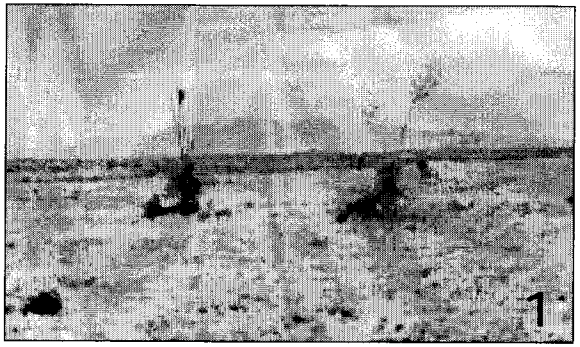

Source: Delorme 1996

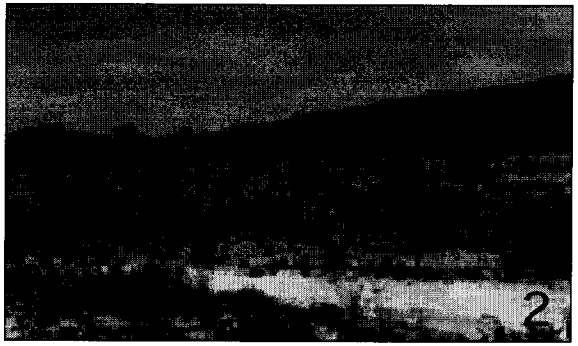
NORTH

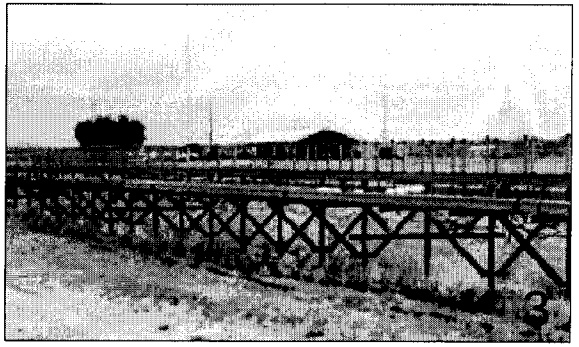
No Scale

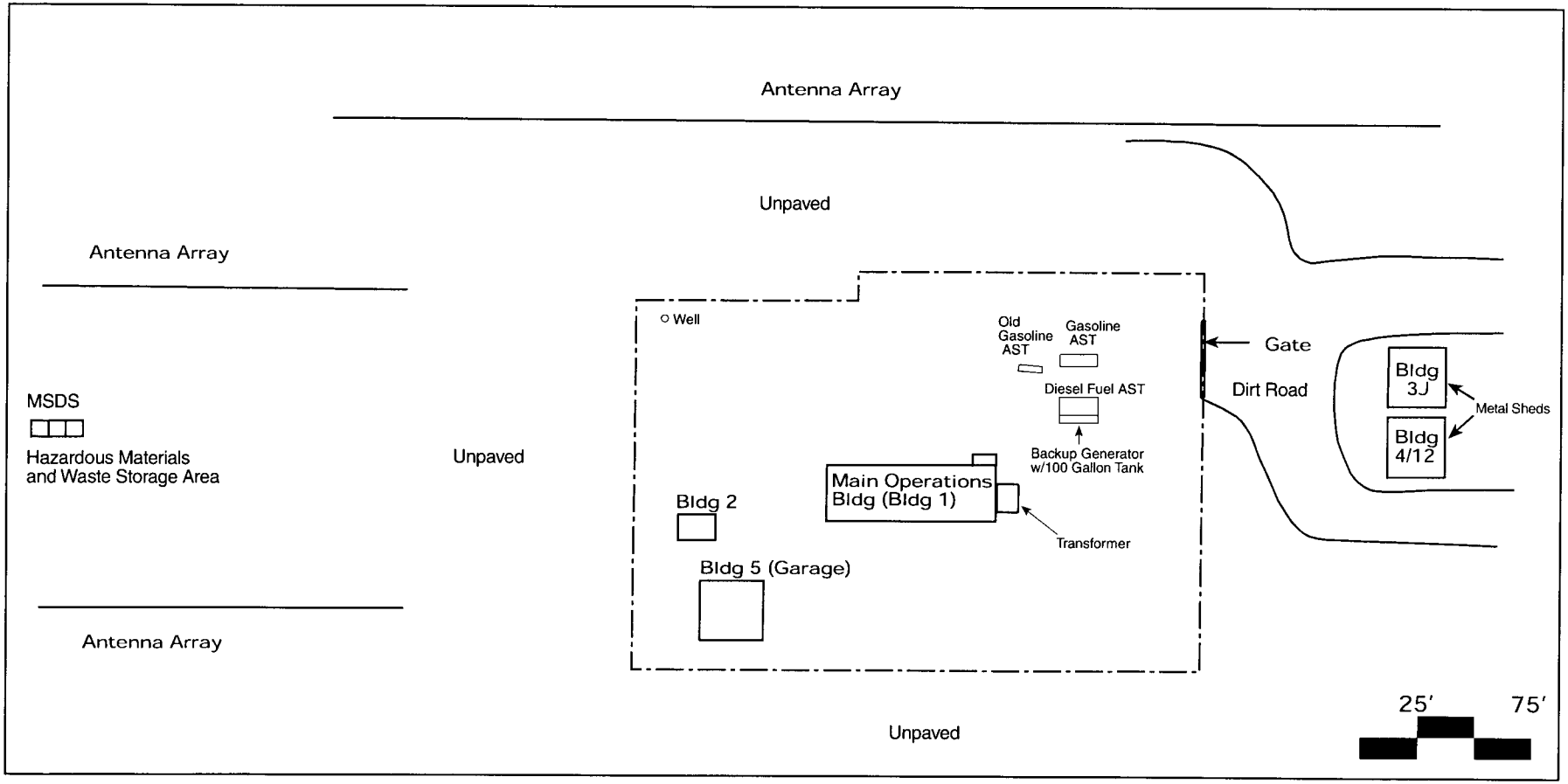
**Figure 1-2**
**Regional Location**

# Figure 1-3 Site Map



## 1.2 PURPOSE AND NEED

The purpose of this action is to meet statutory requirements under the Sikes Act Improvement Act (Public Law 105-85, Div. B. Title XXIX, Nov. 18, 1997, 111 State 2017-2019, 2020-2022).

In November 1997, the Sikes Act (16 U.S.C. § 670A *et seq.*) was amended to require the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. To facilitate this program, the amendments require the Secretaries of the military departments to prepare and implement INRMPs for each military installation in the United States unless the absence of significant natural resources on a particular installation makes preparation of a plan inappropriate.

The principal use of military installations is to ensure the preparedness of the Armed Forces. The Sikes Act Improvement Act requires each installation to prepare an INRMP that provides for the following management activities, to the extent that such activities are consistent with use of the installation for military preparedness:

- the conservation and rehabilitation of natural resources on the installation;
- the sustainable multipurpose utilization of the resources, to include hunting, fishing, trapping, and nonconsumptive uses; and
- subject to safety requirements and military security, public access to the installation to facilitate such uses.

As required by the Sikes Act Improvement Act, the plan must, to the extent appropriate and applicable, provide for:

- fish and wildlife management, land management, forest management, and fish- and wildlife-oriented recreation;
- fish and wildlife habitat enhancement or modification;
- wetland protection, enhancement, and restoration where necessary for support of fish, wildlife, or plants;
- integration of, and consistency among, the various activities conducted under the plan;
- establishment of specific natural resource management goals and objectives and time frames for proposed action;
- sustainable use by the public of natural resources to the extent that the use is not inconsistent with the needs of fish and wildlife resources;
- public access to the military installation that is necessary or appropriate for the sustainable use of natural resources, subject to requirements necessary to ensure safety and military security;
- enforcement of applicable natural resource laws (including regulations);

- no net loss in the capability of the installation's lands to support the military mission of the installation; and
- such other activities as the Navy has determined are appropriate.

In preparing this plan, as required by the Sikes Act Improvement Act, NAVSPACECOM has worked in cooperation with the U.S. Fish and Wildlife Service (USFWS), New Mexico Field Office and the New Mexico Department of Game and Fish (NMDFG), Conservation Services Division so that the plan will reflect the mutual agreement of these parties concerning conservation, protection, and management of fish and wildlife resources on the installation. Additionally, as required by the Sikes Act Improvement Act, the plan has been provided for public comments and the installation has taken those comments into account in preparing the plan. Draft copies of this Environmental Assessment were provided to the USFWS and the NMDFG for review and comment (see Appendix B).

## 1.3 ENVIRONMENTAL DOCUMENTATION

The Department of the Navy has prepared this EA in compliance with the National Environmental Policy Act (NEPA) of 1972 (40 CFR § 4332 (1996)) and its Council on Environmental Quality Regulations (40 C.F.R. §§ 1500-1508 (1994)). Under NEPA, an EA is used to analyze the consequences of a proposed federal action and is intended to provide information to both decision-makers and the public. This EA also follows the guidelines contained in the Navy's Environmental and Natural Resources Program Manual (OPNAVINST 5090.1b).

In addition to NEPA, numerous other federal laws and regulations are applicable to the natural resources present within DON facilities. Laws and regulations specifically related to environmental issues addressed in this EA are discussed below.

- **Clean Water Act**. The Clean Water Act (CWA) of 1972 (33 U.S.C. § 1251 (1996)) is the major federal legislation concerning the improvement of the nation's water resources. It provides for the development of municipal and industrial wastewater treatment standards and a permitting system to control wastewater discharges into surface waters. State operation of the program is encouraged, and in New Mexico, the New Mexico Environment Department (NMED), Surface Water Quality Bureau is the state agency responsible for carrying out the CWA.

- **Clean Air Act**. The Federal Clean Air Act (CAA) of 1970 (42 U.S.C. § 7401, amendments of 1977, 1990, and 1993) sets forth National Ambient Air Quality Standards (NAAQS) for several criteria pollutants. The NAAQS for the criteria pollutants must not be exceeded more than once per year. The criteria pollutants regulated under the CAA are ozone ($O_3$), carbon monoxide (CO), sulfur dioxide ($SO_2$), nitrogen dioxide ($NO_2$), particulate matter less than ten microns in diameter ($PM_{10}$), and lead (Pb). The CAA requires individual states to adopt standards that set acceptable

pollution concentrations equal to or less than the federal standards. In New Mexico, the state standards are slightly stricter than the NAAQS with regard to sulfur dioxide, carbon monoxide, and nitrogen dioxide. The Air Quality Bureau of the NMED is New Mexico's implementing agency for state and federal air quality regulations.

- **Endangered Species Act**. The Endangered Species Act (ESA) of 1973 (16 U.S.C. § 1531 (1996)) protects threatened and endangered species by prohibiting federal actions that would jeopardize the continued existence of such species or by minimizing actions that would result in the destruction or adverse modification of any critical habitat of such species. The ESA requires that consultation regarding the protection of such species be conducted with the USFWS prior to project implementation. During the project design process, the USFWS evaluates potential impacts of proposed actions on threatened or endangered species. The USFWS is asked to certify or concur with the sponsoring agency's findings that the proposed activity will not adversely affect endangered species, and the USFWS findings are issued in the form of a Biological Opinion (BO).

- **Fish and Wildlife Conservation Act of 1980**. The Fish and Wildlife Conservation Act (16 U.S.C. § 2901-2911, as amended 1986, 1988, 1990 and 1992), commonly known as the Nongame Act, encourages states to develop conservation plans for nongame fish and wildlife of ecological, educational, aesthetic, cultural, recreational, economic or scientific value. States may be partially reimbursed for the costs of developing, revising or implementing conservation plans approved by the Secretary of the Interior. Amendments adopted in 1988 and 1989 also direct the Secretary of the Interior to undertake certain activities to research and conserve migratory nongame birds.

- **Federal Insecticide, Fungicide and Rodenticide Act (Federal Environmental Pesticide Control Act)**. This Act (7 U.S.C. § 136-136y, as amended 1972, 1973, 1975, 1978, 1983, 1984, 1988, 1990, 1991 and 1996) controls the sale, distribution and application of pesticides. Pesticides must be registered with the Administrator of the U.S. Environmental Protection Agency (EPA), who is given authority to suspend or cancel registrations for pesticides which cause unreasonable adverse effects on the environment. The Act also requires that pesticides be labeled in an approved manner and that they be used in a manner consistent with its labeling. Other provisions of the Act provide for registration of establishments producing pesticides, certification of pesticide applicators, regulations to promote safe storage and disposal, and the issuance of stop sale orders, recall orders and other enforcement measures, as well as authority to delegate enforcement of pesticide use restrictions to the states. Recent amendments added provisions regarding minor use pesticides, antimicrobial pesticides, public health pesticides, reduced risk pesticides, and integrated pest management.

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# 2.0 PROPOSED ACTION AND ALTERNATIVES

This chapter describes the proposed action and the three alternatives evaluated in detail in this EA: implementation of the Draft INRMP, a modified INRMP implementation alternative, and the No Action alternative.

## 2.1 PROPOSED ACTION

The proposed action is to modify the existing natural resources management practices at NSSS Elephant Butte to develop and implement an INRMP consistent with the military use of the property and the goals and objectives established in the Sikes Act (as amended). The goal of the INRMP is to implement an ecosystem-based conservation program that provides for conservation and rehabilitation of natural resources in a manner that is consistent with the military mission; integrates and coordinates all natural resources management activities; and provides for sustainable multipurpose uses of natural resources. The management objectives are to integrate wildlife management and land management at the Station, as practicable and consistent with the military mission and established land uses.

There are few substantive issues related to the military use of NSSS Elephant Butte, primarily due to (A) the isolated nature of the Station, which is located within a privately owned ranch; (B) the lack of amenities that would make access to the station desirable to the public; and (C) the low level of natural resources present on station. Substantial grazing by livestock occurred at the NSSS Elephant Butte site prior to the Station's construction in 1959. Currently, frequent mowing is conducted for fire prevention within portions of the Station, and pesticides are applied on a monthly basis. All of these actions have served to further reduce the Station's natural resource values. The INRMP focuses on the following issues:

- mowing regime
- noxious weed control
- erosion control
- wildlife protection and management
- insecticide use
- potential conflicts with bison and pronghorn raised at the R.E. Turner Ranch (from which the NSSS Elephant Butte land is leased).

## 2.2 ALTERNATIVES

### 2.2.1 Implementation of the Draft INRMP

The proposed Draft INRMP for NSSS Elephant Butte includes compliance measures (which are required) and stewardship measures (which are optional). In addition, the proposed Draft

INRMP contains administrative measures which would help provide a better understanding of wildlife use at the Station and allow better coordination with other agencies, but which would not have any noticeable effect on the physical or human environment.

Under this alternative, NAVSPACECOM would implement all of the compliance measures included in the Draft INRMP for NSSS Elephant Butte. NAVSPACECOM would also strive to achieve all of the optional stewardship and administrative measures, as funding became available. These INRMP measures are described below.

**Compliance Measures**

Compliance measures have been identified with regard to land and vegetation management (i.e., the mowing regime), noxious weed control, wildlife enhancement, insecticide use, and bison and pronghorn conflicts. The relatively minor erosion problems at NSSS Elephant Butte would be addressed through stewardship measures described later in this section.

Land and Vegetation Management

The INRMP's land and vegetation management objective is to provide for the enhancement of native plant species of the Chihuahuan semidesert grasslands while enhancing habitat for native wildlife and maintaining a fire-safe environment. Compliance measures associated with this objective include:

- continue to grade firebreaks both inside and outside the perimeter fence
- continue to mow a required distance around all antenna arrays and buildings
- begin "strip-mowing" the remainder of the Station to create enhanced edge effects for wildlife (mow alternative strips of the area between the antenna arrays, buildings, and firebreaks along the inside of the fence)
- do not cut small shrubs or succulents—continue the current policy of allowing larger species in open areas room to grow as habitat islands in a fire-safe environment
- continue to avoid grading under conditions which result in excessive dust.

Noxious Weed Control

The objective of the noxious weed control program is to prevent the introduction and control the spread of noxious species and to eradicate those weeds that pose a threat to native species. This objective would be accomplished by monitoring the grounds for invasion of noxious weeds, determining which species may require control, and investigating use of a native seed mix for disturbed berm sites. It is hoped that the application of a native seed mix could help displace the Russian thistle, which is a noxious weed present in disturbed areas on-Station. The Draft

INRMP also calls for the evaluation of possible control methods using an integrated pest management approach.

Insecticide Use

In order to reduce insecticide use, the Draft INRMP requires the consideration of increasing the interval between insecticide spraying periods for the main building and storage areas. The recommended change would be to increase the interval to every other month, monitor and document (if possible) any increase or decrease in pest species during the trial period, and adjust spraying accordingly. The use of pesticides or insecticides would be undertaken in compliance with OPNAVINST 5090.1B, Chapter 13, Pesticide Compliance Ashore. The Draft INRMP also calls for potentially limiting pesticide applications to the main buildings. Under this approach, Station personnel would wear gloves and gaiters when working around the antenna arrays and other areas.

Reducing insecticide use would also benefit wildlife on-Station. Rodents frequently eat insects which have been sprayed with insecticide (as these dying insects are frequently the easiest to catch), and raptors eat the insecticide-laden rodents. Pesticides can bio-accumulate in raptors in this manner. (The level of insecticide accumulation in animal tissue is often higher in predators such as raptors that are near the top of the food chain.)

Wildlife Protection and Management

The Draft INRMP acknowledges that it is difficult to apply habitat and ecosystem management practices at NSSS Elephant Butte due to the Station's small size and because most of the land is used for antenna arrays. Accordingly, few wildlife enhancement compliance measures have been identified for the Station. The altered mowing regime described under Land and Vegetation Management would benefit wildlife by improving habitat quality.

Many of the wildlife protection and management compliance measures address protecting the sustainability of migratory bird populations and their habitat. The Draft INRMP calls for:

- restricting access into and disturbance of any identified nesting and breeding grounds during critical periods
- protecting the populations from the lethal effects of human facilities and activities, where this does not conflict with safety concerns
- restraining household pets during the peak nesting season for those birds that nest on or near the ground
- reporting any feral animals in the area to the USDA, Animal Damage Control, or the local authorities

- preventing noxious weeds from taking over native habitats.

The Draft INRMP also identifies measures that would reduce the effects of Station activities on wildlife:

- set speed limits at 5 miles per hour (mph) (8 kilometers per hour [kph]) inside the station to reduce the potential of crushing wildlife, especially lizards and snakes that bask in the morning and late evenings
- set a slow speed limit for the tractor-pulling drag and instruct the driver to be aware of lizards or snakes that could be in the path of the drag
- observe an informal speed limit on the access road between the Station and Engle parking lot, especially at night or when in the presence of buffalo (drivers should drive particularly slow when animal eyes are reflected in headlight beams at night).

Bison and Pronghorn Conflicts

The speed limit measure listed above (i.e., the last bulleted measure under Wildlife Enhancement and Protection) would address potential bison and pronghorn conflicts. No other compliance measures associated with bison and pronghorn are addressed in the INRMP. Bison cannot enter the Station because they are blocked by the perimeter fence, which carries a low-amperage electrical current to discourage bison from leaning or rubbing against it. Pronghorn can easily jump the perimeter fence.

**Stewardship Measures**

Stewardship measures have been identified to improve erosion control and wildlife protection and management.

Erosion Control

Minor erosion problems are experienced along the antenna arrays where berms are used to elevate the antennas and keep them level. One cause of these problems may be rodents which burrow in the berms. The stewardship measures recommended to provide better erosion control include the following:

- backfill problem areas and compact the soil
- experiment with erosion control fabrics or blankets as typically used on construction sites to provide a longer term solution
- seed erosion prone areas with native drought-tolerant plants before the start of the usual

rainfall season
- install raptor perches to attract the raptors as a natural control for kangaroo rats, whose burrow networks may undermine the stability of the berms
- monitor the above-listed techniques and adjust as necessary.

Because stewardship measures are voluntary these measures would be implemented as funding became available.

Wildlife Protection and Management

In addition to the compliance measures identified for wildlife protection and management, the INRMP identifies stewardship measures, with a specific focus on migratory birds:

- consider using artificial nest boxes to enhance migratory birds' options
- choose appropriate native plants for windbreaks
- protect areas of dense vegetative cover.

**Administrative Measures**

Administrative actions would improve coordination with state and federal resources agencies and help the Department of the Navy and its contractors develop a better understanding of the wildlife which utilize NSSS Elephant Butte. They would not, however, have a noticeable effect on the physical or human environment except that they would presumably lead to better decision-making with regard to natural resources at the Station. These administrative measures would be implemented as funding became available and include the following:

- expand the species list for the Station by keeping track of wildlife sightings and checking for summer annual plants potentially missed by a previous (1997) survey of Station vegetation
- purchase field guide books for identification of wildlife and bird species and consult the local Audubon Society for identification checklists of local birds
- use binoculars and learn bird calls to help in the identification process and focus on identifying birds during peak migratory or other significant periods
- for future wildlife surveys and when practical, use methods similar to those used during previous (1997) surveys, as this will help establish wildlife use trends for the Station
- determine the status, health, and habitat use by neo-tropical migratory birds and raptors, emphasizing certain target or indicator species not currently considered sensitive
- use cooperative assistance from wildlife agencies, organizations, and volunteers to help collect necessary data

- support research and consider the needs of neotropical migrants wherever possible
- collect educational materials regarding the Station's migratory birds and management practices, including information on what personnel can do to help, species lists, and activities detrimental to the bird population
- participate in the Partners in Flight program, which encourages the management of Department of Defense lands to support neotropical migratory birds, offering these birds migratory stopover areas for resting and feeding, and suitable sites for nesting and rearing their young (see http://www.dodpif.org/site.htm for additional information on Partners in Flight)
- learn about the wildlife in the state and region by contacting the New Mexico Game and Fish Department (see http://www.gmfsh.state.nm.us).

### 2.2.2 Modified INRMP Implementation Alternative

Under this alternative, NAVSPACECOM would modify implementation of the Draft INRMP to entail all of the INRMP measures included in Section 2.2.1, except as described below.

**Compliance Measures**

Noxious Weed Control

All noxious weed control compliance measures listed in Section 2.2.1 would be implemented with the exception of the use of control measures following an integrated pest management approach.

Insecticide Use

The frequency of pesticide application in the occupied structures would be reduced and, based on monitoring of the results, adjusted accordingly. As an operational and personal safety requirement, the current schedule for application of pesticides on the antenna and supporting structures would continue.

**Stewardship Measures**

As described in Section 2.2.1, these measures are optional and subject to funding availability. Under the modified INRMP implementation alternative, NAVSPACECOM and its contractors would strive to implement all of the stewardship measures as described in Section 2.2.1 except that raptor perches would be not installed (in compliance with New Mexico Department of Game and Fish and USFWS requests not to install the perches). Additionally, the propagation of native plants and the protection (not mowing) of dense stands of vegetation would be contingent on these measures not effecting operational and safety requirements.

**Administrative Measures**

Under the modified INRMP implementation alternative, wildlife identification field handbooks and other methods to identify wildlife species on Station would be provided at NSSS Elephant Butte. This would include means of identifying federally listed threatened and endangered species. Station personnel would report any sightings of the above to appropriate authorities (e.g., USFWS, New Mexico Department of Game and Fish).

### 2.2.3 No Action Alternative

The No Action Alternative is continued implementation of the objectives and practices under the existing natural resource management programs at NSSS Elephant Butte. On-going practices used for the management of natural resources at NSSS Elephant Butte would continue and there would be no change to the objectives of the current natural resources management programs. The existing operation and maintenance activities at NSSS Elephant Butte which affect natural resources are relatively minimal, as discussed below.

Surface disturbance in and around NSSS Elephant Butte consists primarily of periodic grading and mowing for weed abatement and the maintenance of fire breaks around the perimeter fence, the Station buildings, and antenna array. All areas within the perimeter fence are subject to mowing. An approximately 24-foot-wide (7.3-meter-wide) fire break would continue to be graded along the perimeter fence (12 feet inside the fence and 12 feet outside the fence). Mowing takes place on an almost daily basis during the late spring, summer, and early fall. During the remainder of the year the grass is dormant and mowing is not required.

The access road from Engle to the Station (through the R.E Turner Ranch) would continue to be graded approximately once per month. Because the access road traverses active grazing areas, there is the potential to encounter pronghorn antelope and bison en route to NSSS Elephant Butte. To minimize the risk of collision, Station personnel observe the informal 45 mile per hour (72 kilometer per hour) speed limit within the R.E. Turner Ranch and exercise caution in the presence of animals. In the event that a collision occurs, the U.S. Navy compensates the ranch financially for the loss of antelope or bison.

A contractor would continue to spray insecticide inside and outside the main building, storage sheds, and around the antenna arrays once a month to reduce black widow spiders and scorpions. Erosion control consists primarily of backfilling in problem areas in the antenna array berms as necessary using hand tools. Routine maintenance on the Station involves checking the antenna array for small defects (vacuum leaks) or problems that could hinder the transmitter.

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# 3.0 AFFECTED ENVIRONMENT

This chapter addresses those existing conditions at NSSS Elephant Butte that may be affected by the proposed action.

## 3.1 PHYSICAL/NATURAL ENVIRONMENT

### 3.1.1 Geology/Topography/Soils

The topography of NSSS Elephant Butte is flat desert floor, with gently rolling slopes of less than five percent and man-made berms supporting portions of the antenna array. The elevation of the Station is approximately 5,000 feet (1.5 kilometers) above sea level. The edge of an ancient basaltic lava flow which rises approximately three to ten feet (one to three meters) above the desert floor is only 30 feet (9 meters) from the perimeter fence to the east. The lava flow is estimated to be approximately 250,000 years old and was produced from a small crater in the flow's center (Brown 1996).

NSSS Elephant Butte lies completely within a unit of the soil type Berino-Dona association. This mapping unit strictly occurs on piedmonts with slopes ranging from one to seven percent. (A "piedmont" is a tract of land at the foot of a mountain range.) Both components of this association are formed in mixed alluvium and have clay-rich surface horizons. The soils are affected by water runoff due to low permeability and wind (U.S. Navy 1998).

### 3.1.2 Hydrology

There are no washes or other drainages present on or adjacent to NSSS Elephant Butte. Disturbances to the soil caused by mowing and grading can create increased water collection (puddles) on-Station following precipitation.

### 3.1.3 Air Quality

The air district encompassing NSSS Elephant Butte is in attainment for all federal and state standards, as described in Section 1.3 of this EA under the heading "Clean Air Act." The area's climate is characterized by abundant sunshine, wide daily ranges of temperature, low relative humidity, and generally low, but extremely variable, precipitation. During the warmest month of the year average high temperatures are approximately 95 degrees Fahrenheit (35.2 degrees Celsius). During the coldest month (January), average lows are approximately 20 degrees Fahrenheit (negative 6.3 degrees Celsius) (U.S. Navy 1998).

### 3.1.4 Water Quality

There are no surface water resources on site. The high mineral content of the groundwater pumped at the Station makes it unsuitable for potable uses (e.g., drinking) although local ranches do use groundwater for livestock (U.S. Navy 1995). There is no known hazardous material contamination of groundwater at NSSS Elephant Butte.

### 3.1.5 Biological Resources

#### Plants

The area within the perimeter fence of NSSS Elephant Butte consists of disturbed habitat. A total of 63 plant species were recorded along roads, fences, mowed areas around antenna arrays and adjacent to Station buildings during a 1997 survey by Navy contractors. The majority of the observed species were forbs (35 species) and grasses (22 species). The remaining six species were composed of two succulents, soap-tree yucca (*Yucca elata*) and red-flowered prickly pear (*Opuntia erinacea*), as well as four species of shrubs, including broom snakeweed (*Guiterrezia sarothrae*) and honey mesquite (*Prosopis glandulosa*). The indicator species of Chihuahuan semidesert grassland (black grama grass, soap-tree yuccas, broom snakeweed and honey mesquite) are all present inside the perimeter of the Station, but at a much lower density than on the relatively undisturbed habitat outside.

Along the disturbed fence line, roadsides, and mowed grassland areas, the plant species were dominated by annual forbs and grasses. Larger woody perennial species, such as *Yucca elata* and *Prosopis glandulosa,* were absent in these areas due to the continual disturbance. However, some smaller shrub species, such as *Guiterrezia sarothrae* and *Zinnia grandiflora* (plains zinnia), are able to persist in fairly high densities despite the mowing. Only forty plant species were recorded within the mowed grassland area.

To provide shade, several cottonwood trees (*Populus* sp.) have been planted within NSSS Elephant Butte. Although *Populus fremontii* is native from California to Texas, it would not have been present in the semi-desert grassland area of NSSS Elephant Butte. These trees provide wildlife habitat that is not provided by the shrub species due to their height, structure and cover. The Station fencing and the antenna itself provide shade and perches that are in scarce supply in the surrounding environment.

#### Wildlife

An abundance of information on the potential wildlife species occurring on or near NSSS Elephant Butte was readily available and used by biologists who conducted wildlife and plant inventories. The Jornada Long Term Ecological Research Station, located 60 miles (96 kilometers) south of NSSS

Elephant Butte, has carried out many biological monitoring projects since the 1920s. The proximity of the Jornada Station and its similar habitat and elevation makes it an ideal comparison area. The 1997 biological surveys at NSSS Elephant Butte documented wildlife species occurring on or near the Station property. Surveys were conducted in fall and spring for mammals, in early summer for herpetofauna (reptiles) and throughout the year for birds (U.S. Navy 1998).

Mammals

Ten small mammals were trapped in and around the station during the surveys, and an additional seven large mammal species were observed outside the perimeter fence. The six species documented on the Station were the spotted ground squirrel (*Spermophilus spilo-soma*), silky pocket mouse (*Perognathus flavus*), deer mouse (*Peromyscus maniculatus*), Ord's kangaroo rat (*Dipodomys ordii*), Merriam's kangaroo rat (*D. merriami*) and Botta's pocket gopher (*Thomomys bottae*). Three other small mammals confirmed immediately outside of the Station area were the plains pocket mouse (*Perognathus flavescens*), bannertail kangaroo rat (*Dipodomys spectabilis*) and white throated woodrat (*Neotoma albigula*) (U.S. Navy 1998).

Two native large mammal species, pronghorn antelope and bison, graze outside of the Station on the ranch. The pronghorn occasionally jump the perimeter fence and graze in the mowed areas. The pronghorn and bison were driven to the brink of extinction in the late 1800s and early 1900s, yet they have recovered and thrive today in the western grasslands of North America.

Herptofauna (Reptiles)

The herpetofauna on the Station consists of six lizard species and the ornate box turtle. The most common lizard is the little striped whiptail (*Cnemidophorus inor-natus*), followed by the Texas horned lizard (*Phrynosoma cornutum*), and the side-blotched lizard (*Uta stansburiana*). The other four species documented, lesser ear-less lizard (*Holbrookia maculata*), western whiptail (*Cnemidophorus tigris*), desert-grasslands whiptail (C. *uniparens*), and the ornate box turtle (*Terrapene ornata*) were captured once or twice each, suggesting lower abundance levels.

According to surveys at the Jornada Station, five additional lizard species and four snakes could potentially occur in the NSSS Elephant Butte area. These species may have been missed during the 1997 surveys due to the early summer sampling period, as they are more active in late summer.

Birds

Twenty-two bird species were seen at the Station during four reconnaissance surveys conducted in the fall, winter, and summer of 1997. Spring surveys were not performed and some spring migrants may have been missed. Surveys in October and January showed low species diversity, but high numbers of single species. Breeding season surveys in June showed relatively high numbers of

species and a more equitable abundance distribution among species. Avian surveys at the Jornada Station have recorded 56 species that are resident, seasonal inhabitants, or migrants in this area, and a more extensive bird survey NSSS Elephant Butte would most likely document more species on and adjacent to the Station.

**Sensitive Species**

Department of the Navy facilities, including NSSS Elephant Butte, must protect and manage any plant or animal species listed as Endangered or Threatened under the federal Endangered Species Act that occur within their property or use the property in any way. Protection of state-listed rare and endangered species on U.S. Navy land is not required by legal mandate; however, the U.S. Navy encourages cooperation with states to protect such species.

No federal- or state-listed Threatened or Endangered plant or wildlife species have been observed or are expected to occur at NSSS Elephant Butte, and there is no USFWS-designated critical habitat for Threatened or Endangered species at the Station. Two federally Endangered species, the aplomado falcon (*Falco femoralis*) and the peregrine falcon (*Falco peregrinus*), may potentially fly over the Station; however, it is unlikely that they would use the Station for roosting or nesting.

## 3.2 MAN-MADE ENVIRONMENT

### 3.2.1 Land Use

**Historic Land Use**

The Station is located on land that was previously part of the Armendaris Ranch, now called the R.E. Turner Ranch. In 1820, the ranch was established from a large tract of land granted to Pedro de Armendaris. The Armendaris Ranch was located in present day Socorro and Sierra counties, at the north end of the famed Jornadadel Muerto ("Dead Man's Journey") in the northwestern Chihuahuan desert. Livestock grazing has been the major economic activity in this area; prior to the Navy lease, the land was grazed by livestock.

NSSS Elephant Butte was established in 1959. The original building is still being used, although it requires some repair. Since all the antenna arrays must be at the same height and the terrain is slightly sloped, some arrays were built on berms. An area adjacent to the Station was used as a soil source, through a mutual agreement between the land owner and the building contractor. Soil for the berms was excavated in exchange for the construction of a watering trough for grazing livestock.

### Existing Land Use

As shown on Figure 1-3 in Chapter 1, NSSS Elephant Butte includes a centrally located main compound inside a security fence, with the majority of the station consisting of antenna arrays located outside the main compound, but within an electrified barbed wire perimeter fence. Table 3-1 lists land uses at NSSS Elephant Butte.

Surrounding the Station is undeveloped pasture used for grazing bison and pronghorn antelope.

**Table 3-1. NSSS Elephant Butte Land Use Summary**

| Land Use | Area | |
|---|---|---|
| | Acres | Hectares |
| Developed (buildings, dirt parking lot, storage sheds, etc.) | 1.5 | 0.6 |
| Antenna Arrays | 12 | 5 |
| On-Station Roads (including firebreak around inside of fence) | 4 | 1.6 |
| Mowed Areas | 151 | 61 |
| Antenna Array Berms (not mowed) | 5 | 2 |
| Unfenced land and unmowed land | 29.5 | 12 |
| **Total** | **203** | **82.2** |

Source: U.S. Navy 1998

### Planned Land Use

NSSS Elephant Butte will retain its current mission into the foreseeable future; accordingly, planned land uses (i.e, planned projects) at the Station are generally designed to improve efficiency and safety at the Station. Potential future projects identified by NAVSPACECOM include renovating and constructing an addition to the operations building, replacing the maintenance building, installing a reverse osmosis water purification system, constructing an equipment barn, and replacing the barbed wire perimeter fence with a high security fence and perimeter lighting. The new security fence and lighting will enclose the entire 203-acre property. Within the next decade NAVSPACECOM may also construct new, smaller antenna arrays as part of a system-wide change in the space surveillance system. The smaller antenna arrays may operate in conjunction with the existing arrays or as a replacement. These potential future projects are also addressed in Section 4.3, Cumulative Impacts.

## 3.2.2 Traffic

NSSS Elephant Butte is accessible via a 20-mile-long (32-kilometer-long) graded access road that leads to the Station from a ranch entrance at Engle. Approximately 45 Station-related trips are generated along this road per week. These include trips by Station personnel, delivery services (e.g.,

Federal Express), contractors (e.g., the pest control contractor), and other visitors (U.S. Navy 1995). An unquantified number of ranch employees also use portions of the access road. Pursuant to ranch policy, the maximum speed limit on the road is 45 miles per hour (70 kilometers per hour).

### 3.2.3 Noise

NSSS Elephant Butte is located in a very quiet rural environment. Noise sources at the Station are generally limited to vehicles, including the tractor used to mow and grade the fire breaks. Antenna array operation does not generate noise. There are no land uses within an audible distance of the Station that would be considered sensitive noise receptors.

### 3.2.4 Aesthetics

NSSS Elephant Butte is extremely isolated and presents no visual effect on the surrounding community. The site, located deep within the R.E. Turner Ranch property, is accessible only via a 20-mile-long (32-kilometer-long) dirt road which originates in the closest town to the station, Engle, New Mexico. As a result, there are no views to the site from public areas. In addition, the Station buildings are all single-story, and the antenna arrays and fencing do not block views from other areas of the ranch. These factors serve to minimize contrasts between the Station and its surrounding rural environment. Refer to Figure 1-3 (Site Map) for photos of the Station and surrounding open desert.

### 3.2.5 Cultural Resources

#### Regulatory Background

Cultural resources are prehistoric and historic period sites, structures, districts, or other places with evidence of human activity that are considered significant to a community, cultural or ethnic group. Significant cultural resources are referred to as historic properties under federal law and meet one or more of the criteria for nomination to the National Register of Historic Places (NRHP).

Federal laws and regulations including the National Historic Preservation Act (42 U.S.C. § 4332), the Archeological Resources Protection Act (16 U.S.C. § 470aa), the Native American Graves Protection and Repatriation Act (25 U.S.C. § 3001), and the American Indian Religious Freedom Act (42 U.S.C. § 1996) identify the Navy's regulatory requirements and responsibilities concerning cultural resources. These include the need to provide an inventory of resources that are potentially eligible for the NRHP, to evaluate these resources for eligibility, and to consider effects federal projects may have on eligible resources. In addressing impacts, an agency may elect to avoid the resource or mitigate adverse effects through measures such as data recovery.

## Cultural Background

Complexes identified as Clovis, Folsom, Agate Basin, and Cody characterize the Paleo-Indian period in the Southwest. Clovis items are rare in the region, but Folsom materials are concentrated east of the Arizona-New Mexico border. In northen New Mexico the latter part of the Paleo-Indian period is known by the Agate Basin complex, while the Cody complex was more widely distributed in the region (Martin 1979). All the materials are believed to be associated with a nomadic hunting adaptation at least 12,000 years old. While the Archaic period in southeastern and south-central New Mexico is poorly understood, around 300 B.C. the Mogollon culture is evident in the region. Early villages were on high bluffs and mesas which were thought to be more defensible. Later Mogollon sites (after A.D. 900-1000) reflect an increase in numbers and a move toward valleys, where agriculture and irrigation could be carried out (Martin 1979). Ethnohistorically southern New Mexico was inhabited by the Apache. Traditionally, the area west of the Rio Grande was home to the Chiricahua Apache, while the territory east of the river belonged to the Mescalero Apache. Both the Chiricahua and the Mescalero were primarily hunters and gatherers, farming very little (Opler 1979).

Originally part of the Spanish Empire in the New World, New Mexico was part of Mexico until the mid 1800s. One of the major routes for exploration, and later immigration and commerce, was the Santa Fe Trail. This famous travel route extended into what was then part of Chihuahua Mexico. Despite heavy tariffs and fees charged by Mexican officials, the Sante Fe trade was immensely profitable. After the United States took possession of New Mexico, business in the region expanded quickly. By the 1850s, territorial and commercial expansion spurred by the California gold rush had increased pressure to expand rail connections to the west. The year 1879 saw the construction of the Atchison, Topeka and Santa Fe Railway from Raton to Las Vegas. The railroad was then extended to Albuquerque and the Rio Grande Valley, finally reaching San Marcial by fall of 1880. By the summer of 1881, the line had extended farther south to Rincon and El Paso. The railroad forever changed New Mexico. Coal mining became a major industry, sheep and cattle operations were expanded, and farmers in the Rio Grande Valley were provided a way to ship their produce to eastern markets (Bryant 1974).

## Inventory

The New Mexico Office of Cultural Affairs, Historic Preservation Division has records indicating that two previous surveys have been conducted within one mile (1.6 kilometers) of NSSS Elephant Butte (Etchieson 1982; Lekson 1984). However, neither survey was conducted in the immediate vicinity of the Station, and no sites have been recorded within one mile of the Station. During the preparation of the INRMP, archaeologists from Southwest Division, Naval Facilities Engineering Command conducted pedestrian surveys of NSSS Elephant Butte (Collins 2000). No cultural resources were identified within the Station during that survey.

The U.S. Navy is currently in the process of evaluating the potential historic resource value of the nine stations which comprise the Naval Space Surveillance System.

### 3.2.6 Public Facilities/Access/Recreation

The Station is within a privately owned ranch, enclosed by an electrified barbed wire fence, and posted "No Trespassing." The station does not encompass any public facilities and does not provide any public recreational facilities or opportunities.

### 3.2.7 Safety and Environmental Health

Because NSSS Elephant Butte is a receiver site (as opposed to a transmitter site), there is no radiation hazard associated with the antenna array. There are no known hazardous material contamination sites within the station. The primary safety and environmental health concern at the Station is the threat of wildfires. To minimize this risk, a 24-foot-wide (7.3-meter-wide) fire break is maintained along the perimeter fence and the interior of the station is mowed on a regular basis.

### 3.2.8 Utilities

The station is served by utility poles carrying electrical and telephone lines. Non-potable water is provided via an on-Station well, and potable water is supplied via truck.

### 3.2.9 Socioeconomics

NSSS Elephant Butte is located within Sierra County. The primary economic generators within the county are agriculture and tourist/retirement activities. In addition, there is a significant economic influence from government spending for activities at the Department of Defense's White Sand Missile Range, located on the east side of the county (U.S. Navy 1995).

NSSS Elephant Butte is located within a private ranch, limiting its interaction with local residents and businesses. The Commanding Officer of NAVSPACECOM employs NSSS personnel through an operations and maintenance contract. NSSS Elephant Butte is operated entirely by a civilian labor force, currently totaling 11 employees, with no on-site military or federal civil service employees. All employees live within a one-hour drive of the Station, and the majority of Station personnel live in the Truth or Consequences area. The Department of the Navy leases the Station site from the R.E. Turner Ranch, which is owned by Mr. Ted Turner. Mr. Turner is reportedly the largest individual private landowner in the United States, and he owns approximately 1.5 percent of all the land in New Mexico, the nation's fifth-largest state (Massey 2000). Accordingly, this lease represents a negligible portion of the Turner land holdings. Based on NSSS Elephant Butte's isolated location, small size, minimal operational requirements, and small number of staff, its effect on the local and regional economies is negligible.

# 4.0 ENVIRONMENTAL CONSEQUENCES

As described in Chapter 2.0, the INRMP includes compliance (mandatory), stewardship (voluntary), and administrative measures. By definition, the administrative measures would not have a noticeable effect on the human or physical environment. Accordingly, this analysis of environmental consequences focuses on the potential impacts of the compliance and stewardship measures.

## 4.1 PHYSICAL/NATURAL ENVIRONMENT

### 4.1.1 Geology/Topography/Soils

#### Implementation of the Draft INRMP

The INRMP was developed to improve natural resource management, including soil conservation. The measures included in the Draft INRMP would help reduce erosion through the installation of erosion control fabrics along the antenna array and by seeding erosion prone areas with drought tolerant plants (whose roots would help secure the soil in place). Additionally, this alternative would entail reduced tractor speeds for mowing and dragging. (Lower tractor speeds would help reduce the generation of wind-borne dust). As a result, this alternative would benefit soil resources. None of the compliance or stewardship measures would adversely affect the soil at NSSS Elephant Butte, primarily because none of them would involve more than minor, if any, ground disturbance. For similar reasons, none of the measures would affect the geology or topography of the Station.

#### Modified INRMP Implementation Alternative

This alternative would have beneficial effects on soil resources and no effect on geology or topography for reasons identical to those described above.

#### No Action Alternative

Under the No Action Alternative, NSSS Elephant Butte would continue to experience erosion along the antenna array. Eroded soil on the antenna array berms would continue to be replaced using hand tools. Although erosion would continue to be a maintenance issue for NSSS Elephant Butte personnel, it would not constitute a significant soil impact. The No Action Alternative would not cause any impacts to geology or topography.

### 4.1.2 Hydrology

**Implementation of the Draft INRMP**

There are no surface water resources at NSSS Elephant Butte and none of the proposed compliance or stewardship measure would alter the use of the groundwater present under the Station. Accordingly, this alternative would have no impact on hydrology.

**Modified INRMP Implementation Alternative**

The modified INRMP implementation alternative would not affect hydrology for reasons identical to those described for implementation of the Draft INRMP.

**No Action Alternative**

Under the No Action Alternative, there would be no change in groundwater use. Because the Station is relatively small, has no residential quarters, and does not irrigate its grounds, it has minimal water use requirements. As part of a future, unrelated project, a reverse osmosis system may be installed to replace the current system of using bottled water for potable uses (e.g., drinking). This may incrementally increase groundwater use; however, this increase would be minor and is not associated with the currently proposed action. Thus, the No Action Alternative would not impact hydrology at NSSS Elephant Butte.

### 4.1.3 Air Quality

**Implementation of the Draft INRMP**

Implementing the Draft INRMP would have a negligible effect on the emission of air pollutants or the air quality near the Station. Only minor vehicle use would be required to implement the compliance and stewardship measures. For example, a pickup truck or similar vehicle would probably be required to haul material to the Station for the installation of erosion control fabric, raptor perches, or nest boxes. The emissions of these occasional trips would have an immeasurably small effect on air quality in the region. By reducing tractor speeds during mowing and dragging, the generation of dust would be reduced on-Station. While beneficial, this would also be a negligible effect. Thus, there would be essentially no air quality impact as a result of this alternative.

**Modified INRMP Implementation Alternative**

This alternative would not impact air quality for reasons similar to those described above.

**No Action Alternative**

Under the No Action Alternative, there would be no change in operations at NSSS Elephant Butte and the Station's nominal generation of air pollutants would remain less than significant.

### 4.1.4 Water Quality

**Implementation of the Draft INRMP**

There are no surface water resources at NSSS Elephant Butte, and none of the proposed Draft INRMP measures would affect groundwater. The reduction in insecticide use could have a minor, beneficial impact on the quality of runoff from the site. Similarly, the reductions in erosion that would be achieved with implementation of the Draft INRMP would incrementally improve the quality of runoff by reducing its sediment load. Overall, these measures would have a less than significant impact on water quality in the area.

**Modified INRMP Implementation Alternative**

This alternative would have a minor, beneficial impact on water quality for similar reasons to those described for implementation of the Draft INRMP.

**No Action Alternative**

Operations at NSSS Elephant Butte currently do not create water quality impacts. Fuel storage tanks are located within containment structures in case of leaks; there is no known hazardous material contamination of groundwater at the Station; and the septic system has more than adequate room to leach. Because there would be no change in Station operations, and because Station operations are not currently degrading water quality, the No Action Alternative would not have a water quality impact.

### 4.1.5 Biological Resources

**Implementation of the Draft INRMP**

Implementing the Draft INRMP would improve the biological resource value of NSSS Elephant Butte, and it would minimize the effects of Station operations on the surrounding environment. By reducing the frequency of mowing in some areas (strip mowing), the amount of habitat suitable for wildlife use would increase. The noxious weed control measures would help reduce the presence of the nonnative Russian thistle and other nonnative plants.

The reduction in insecticide use would correspondingly reduce the amount of insecticides ingested by rodents (which often eat poisoned insects) and the rodents' predators. As described

in Section 2.2.1, insecticides can ultimately concentrate in predators at the top of the food chain, such as raptors. The wildlife protection and management measures are specifically intended to improve the quality of habitat within the Station and to reduce impacts to wildlife. For example, by driving the tractor slower and making sure the driver is aware of lizards or snakes in the path of the drag, impacts to wildlife from ongoing operations may be reduced. Similarly, the measures identified to reduce bison and pronghorn conflicts will help minimize impacts to those animals.

For these reasons, implementing the Draft INRMP would have a beneficial impact on biological resources.

**Modified INRMP Implementation Alternative**

This alternative would also have a beneficial impact on biological resources, although the benefits would be incrementally less than would be associated with implementing the Draft INRMP. In particular, there would be less of a reduction in insecticide use and no raptor perches or nest boxes would be installed. Overall, this alternative would still improve the biological resource value of the Station and reduce its effects on wildlife. The bulk of the compliance and stewardship measures included in the Draft INRMP would still be implemented under this alternative. Additionally, the elimination of the raptor perches and nest boxes from this alternative was based on a request from the New Mexico Department of Game and Fish, who questioned the benefits of installing these items at NSSS Elephant Butte. As a result of these factors, this alternative would have a beneficial impact on biological resources.

**No Action Alternative**

Under the No Action Alternative, the benefits of an INRMP would not be realized. Although NSSS Elephant Butte's operations would continue to limit biological resources values within its perimeter fence, the Station has only a negligible effect on regional biological resources. The Station does not encompass any unique habitat, does not provide habitat for threatened or endangered species, and is a relatively small facility isolated within a large ranch. Continuing current operations without an INRMP would not benefit biological resources in the region, but it would also not result in a significant biological resources impact.

## 4.2 MAN-MADE ENVIRONMENT

### 4.2.1 Land Use

**Implementation of the Draft INRMP**

None of the Draft INRMP measures propose changes in land use or the construction of new facilities (with the exception of minor items such as raptor perches or nest boxes). Additionally,

none of the measures would change off-Station land uses. (The only measures addressing off-Station activity call for personnel to drive slowly and exercise caution around the bison.) Accordingly, this alternative would not impact existing land uses at or around NSSS Elephant Butte. The Draft INRMP would also not significantly affect the ability of NAVSPACECOM to implement any of the planned land uses described in Section 3.2.1.

**Modified INRMP Implementation Alternative**

This alternative would not impact land use for the same reasons described for implementation of the Draft INRMP.

**No Action Alternative**

Under the No Action Alternative, there would be no change in operations at NSSS Elephant Butte and there would be no impact to existing or planned land uses.

### 4.2.2 Traffic

**Implementation of the Draft INRMP**

Implementing some of the measures would require a minor amount of material to be delivered to the Station. For example, a pickup truck would probably be required to bring erosion control fabric, raptor perches, or nest boxes to the Station. These infrequent trips by single vehicles would not have a noticeable effect on traffic, especially in light of the low traffic levels on the road leading to the Station.

**Modified INRMP Implementation Alternative**

This alternative would not impact traffic for reasons similar to those described above.

**No Action Alternative**

Under the No Action Alternative there would be no change in the amount of traffic generated by Station operations and no traffic impacts.

### 4.2.3 Noise

**Implementation of the Draft INRMP**

Some of the Draft INRMP measures would generate short term, localized noise emissions. Examples of this would include the noise generated by installing raptor perches, next boxes, or

erosion control fabric. This level of activity would probably require only one vehicle, a few Station personnel or other contractors, and minor construction noise (such as hammering). These noise impacts would not be significant given their short duration and the lack of sensitive noise receptors in the area.

**Modified INRMP Implementation Alternative**

This alternative would generate less than significant noise impacts for reasons similar to those described for implementation of the Draft INRMP. Because the modified implementation alternative would not include the installation of raptor perches or nest boxes, it would result in nominally less noise generation than implementation of the Draft INRMP.

**No Action Alternative**

Current operations do not generate significant noise impacts, and this would not change under the No Action Alternative.

### 4.2.4 Aesthetics

**Implementation of the Draft INRMP**

The proposed compliance and stewardship measures would have only a minimal effect on the appearance of NSSS Elephant Butte. The raptor perches, nest boxes, and possibly the erosion control fabric would represent the only noticeable built structures. The strip mowing program would provide the Station with a slightly more natural appearance. Overall, however, the most dominant visual features of the Station would be the antenna arrays and the main building. The appearance of these facilities, which are generally only visible to Station personnel and workers and visitors at the R.E. Turner Ranch, would not change and this alternative would have a less than significant aesthetics impact.

**Modified INRMP Implementation Alternative**

This alternative would have even less of an aesthetic impact than implementation of the Draft INRMP because it would not include the installation of raptor perches or nest boxes. Accordingly, the aesthetic impacts of this alternative would be less than significant.

**No Action Alternative**

Under the No Action Alternative the Station would continue to remain a visually unobtrusive military facility isolated within a private ranch. Based on these factors, the No Action Alternative would not have an aesthetic impact.

### 4.2.5 Cultural Resources

**Implementation of the Draft INRMP**

A survey of NSSS Elephant Butte (Collins 2000) did not detect any archeological resources at the Station. None of the Draft INRMP compliance or stewardship measures would affect built facilities at NSSS Elephant Butte (i.e., the antenna array or operational buildings). Accordingly, implementing the Draft INRMP would have no effect on whether NSSS Elephant Butte, either individually or as part of the overall Space Surveillance System, is eligible for the National Register of Historic Places. Based on these factors, implementing the Draft INRMP would have no cultural resources impact.

**Modified INRMP Implementation Alternative**

This alternative would have no cultural resources impact for the reasons described above.

**No Action Alternative**

Under the No Action Alternative there would be no impact to archaeological resources because none are present at the Station, and the antenna array and operational buildings would remain in use. Accordingly, the No Action Alternative would not affect cultural resources.

### 4.2.6 Public Facilities/Access/Recreation

**Implementation of the Draft INRMP**

With implementation of the Draft INRMP, NSSS Elephant Butte would remain inaccessible to the public and there would be no public facility, public access, or recreation impacts.

**Modified INRMP Implementation Alternative**

Under the modified INRMP implementation alternative, NSSS Elephant Butte would remain inaccessible to the public and there would be no public facility, public access, or recreation impacts.

**No Action Alternative**

Under No Action Alternative, NSSS Elephant Butte would remain inaccessible to the public and there would be no public facility, public access, or recreation impacts

### 4.2.7 Safety and Environmental Health

**Implementation of the Draft INRMP**

None of the Draft INRMP measures would pose a safety or health risk. The measures are all designed to improve natural resources management, they involve little to no construction activity, and none would generate hazardous wastes or other environmental health risks. Accordingly, this alternative would not generate a safety or environmental health impact.

**Modified INRMP Implementation Alternative**

None of the measures included in the modified INRMP implementation alternative would pose a safety or health risk. The measures are all designed to improve natural resources management, they involve little to no construction activity, and none would generate hazardous wastes or other environmental health risks. Accordingly, this alternative would not generate a safety or environmental health impact.

**No Action Alternative**

Under the No Action Alternative, there would be no change to the existing, safe operations at NSSS Elephant Butte. Accordingly, the No Action Alternative would not generate a safety or environmental health impact.

### 4.2.8 Utilities

**Implementation of the Draft INRMP**

The proposed compliance and stewardship measures would involve only limited construction that would not affect existing utilities, and none of the measures would increase the demand for utility service at the Station.

**Modified INRMP Implementation Alternative**

The compliance and stewardship measures included in the modified INRMP implementation alternative would involve only limited construction that would not affect existing utilities, and none of the measures would increase the demand for utility service at the Station.

**No Action Alternative**

Under the No Action Alternative there would be no changes to existing utilities at NSSS Elephant Butte, and there would be no change in the demand for utility service. Accordingly, the No Action Alternative would not impact utilities.

### 4.2.9 Socioeconomics

**Implementation of the Draft INRMP**

Implementation of the Draft INRMP would not have measurable socioeconomic impact. This alternative would not affect the number of contractor personnel employed at NSSS Elephant Butte or living in the region. Minor expenditures would be required for some of the stewardship measures such as installing erosion control fabric, raptor perches, or nest boxes. These expenditures would be economically negligible even in such small markets as the town of Elephant Butte. Accordingly, the socioeconomic impacts of this alternative would be less than significant.

Implementation of the Draft INRMP would not adversely affect any human population; accordingly, it would not result in disproportionate impacts to minority or low income populations, and it would not affect the U.S. Navy's ability to comply with Executive Order 12898, "Environmental Justice."

**Modified INRMP Implementation Alternative**

The modified INRMP implementation alternative would not have measurable socioeconomic impact. This alternative would not affect the number of contractor personnel employed at NSSS Elephant Butte or living in the region. Minor expenditures would be required for some of the stewardship measures such as installing erosion control fabric (this alternative does not include the installation of raptor perches or nest boxes). These expenditures would be economically negligible even in such small markets as the town of Elephant Butte. Accordingly, the socioeconomic impacts of this alternative would be less than significant.

The modified INRMP implementation alternative would not adversely affect any human population; accordingly, it would not result in disproportionate impacts to minority or low income populations, and it would not affect the U.S. Navy's ability to comply with Executive Order 12898, "Environmental Justice."

**No Action Alternative**

Under the No Action Alternative operations at NSSS Elephant Butte would not change and there would be no socioeconomic impacts.

## 4.3 CUMULATIVE IMPACTS

This cumulative impact analysis addresses the incremental effects of the proposed action in conjunction with related past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over

time (see CEQ Regulations Implementing NEPA, 40 C.F.R.§1508.7). In order to be considered cumulative impacts, the effects must meet the following criteria: the effects would occur in a common locale or region; the effects would not be localized (i.e., they would contribute to effects of other actions); the effects would impact a particular resource in a similar manner; and the effects would be long-term (short-term impacts would be temporary and would not typically contribute to significant cumulative impacts).

Past and present actions at NSSS Elephant Butte have led to the existing conditions that are described in Section 3.0 and which provide the basis for the analysis in Sections 4.1 and 4.2 of this document. Accordingly, this cumulative impact analysis primarily addresses the effects of reasonably foreseeable future actions at NSSS Elephant Butte and the surrounding R.E. Turner Ranch.

### 4.3.1 Reasonably Foreseeable Future Actions

**Actions at NSSS Elephant Butte**

Potential future actions at NSSS Elephant Butte are listed below, with the anticipated year of implementation shown in parentheses.

- construction of an addition to the operations building and renovation of the existing operations building (2000)
- replacement of the existing maintenance building (2000)
- installation of a reverse osmosis water purification system (2000)
- construction of an equipment barn (between 2001 and 20007)
- replacement of the perimeter fence with a high security fence and perimeter lighting (between 2002 and 2007)
- construction of a new space surveillance receiver antenna system and support facilities (between 2006 and 2008).

**R.E. Turner Ranch**

The management of the R.E. Turner Ranch was contacted during the preparation of this EA to determine if they had any planned projects in the vicinity of NSSS Elephant Butte; no planned ranch projects were identified. Ongoing ranch operations primarily include activities related to raising bison, emus, and other livestock. The ranch is also occasionally used by antelope hunters, who pay a fee to the R.E. Turner Ranch for the opportunity.

In general, the R.E. Turner Ranch is managed to promote a balance between commercial ranching and wildlife use. For example, current ranch management replaced the previous cattle herd with bison because bison are native to the landscape and they have less of a biological

resources impact. The R.E. Turner Ranch also conducts some operations solely to improve biological resource values. Examples of this include the establishment of black-tailed prairie dog (*Cynomys ludovicianus ludovicianus*) colonies and re-introduction of the federally listed endangered aplomado falcon (*Falco femoralis septentrionalis*) within the ranch. Additionally, the R.E. Turner Ranch recently completed floral and mammal inventories of the lava flows on its property.

### 4.3.2 Impact Analysis

As described in Sections 4.1 and 4.2, the impacts of the either the Draft INRMP or the modified implementation alternative would generally be beneficial, reflecting the intent of an INRMP to improve the natural resources at the Station. Where adverse impacts have been identified, they would be negligible (i.e., the traffic impacts of infrequent truck trips, the minor construction noise associated with the installation erosion control fabric, raptor perches, or nest boxes).

Because the INRMP would remain in place for the foreseeable future, it is expected that the implementation of INRMP measures would coincide with the construction and operation of the six potential future actions listed in Section 4.3.1. for NSSS Elephant Butte. Based on the nature of the impacts associated with the INRMP measures (i.e., they are either beneficial or negligible), they would not be expected to incrementally contribute to a significant environmental impact when considered cumulatively with the potential future actions. For example, the occasional truck trips generated by the INRMP measures would not be expected to push the traffic impacts of any future projects over the significance threshold.

In consideration of the types of impacts associated with implementation of the INRMP and the reasonably foreseeable future actions at and around NSSS Elephant Butte, the proposed action would not incrementally contribute to any cumulatively significant impacts.

## 4.4 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS

The proposed action would irreversibly commit minor resources to natural resource management projects, such as the material, labor, and energy expended to install erosion control fabric. The vast majority of the proposed INRMP measures would, however, be reversible. For example, the changes in mowing regimes could easily be altered at a future date, insecticide spraying schedules could be returned to their pre-INRMP status, and the use of nonnative plants for landscaping could be stopped.

## 4.5 LOCAL SHORT-TERM USE AND LONG-TERM PRODUCTIVITY

The proposed action is intended to improve the long-term natural resource values of NSSS Elephant Butte. In light of these factors, none of the alternatives would cause short-term uses

which adversely affect long-term productivity.

# 5.0 LIST OF PREPARERS

This Environmental Assessment (EA) was prepared by the **Naval Facilities Engineering Command, Southwest Division**. Key Navy personnel who contributed to the preparation of this EA include:

- Debra Theroux, Southwest Division, Planner-In-Charge
- BUC(SCW) Rodney Gardner, USN, Naval Space Command
- CDR Keith Chapman, USN, Naval Space Command
- George Buffkin, Naval Space Command
- Coralie Cobb, Southwest Division, Natural Resource Specialist
- Kirstin Collins, Southwest Division, Archaeologist

The U.S. Navy's prime contractor on this EA was **KTU+A**. KTU+A prepared the visual resources analysis and report figures. Key personnel from KTU+A who contributed to this EA include:

- Michael Singleton, Principal
- Elizabeth Nedeff, Project Manager

**KEA Environmental, Inc**. provided project management, overall document preparation, and all analyses except for visual resources. Key personnel from KEA who contributed to this EA include:

- Michael Schwerin, Project Manager
- Eric Wilson, Senior Environmental Analyst
- Rebecca Apple, Sr. Archaeologist
- Cheryl Bowden-Renna, Staff Archaeologist
- Regeina Howard, Word Processor

The descriptions of the proposed action and the affected environment incorporate a substantial amount of information from the Integrated Natural Resources Management Plan, Elephant Butte Naval Space Surveillance Station, prepared for the U.S. Navy by **Tierra Data Systems**.

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# 6.0 LIST OF PERSONNEL AND AGENCY CONTACTS

During the preparation of the Elephant Butte Naval Space Surveillance Station Integrated Natural Resource Management Plan (INRMP), the U.S. Navy and its contractors coordinated with personnel from the New Mexico field office of the U.S. Fish and Wildlife Service and with the New Mexico Department of Game and Fish, Conservation Services Division. Personnel from Chugach Telecommunication and Computer, Inc., the U.S. Navy's contractor at NSSS Elephant Butte, were also interviewed during preparation of the INRMP to determine existing operational and natural resource management practices at the Station. Additionally, personnel from the R.E. Turner Ranch were consulted regarding applicable ranch policies and programs.

During preparation of this EA, the following agencies and personnel were also contacted:

**Chugach Telecommunication and Computer, Inc.**
- Eddie Vasquez, Station Manager
- Calvin Green
- Jose P. Sanchez
- Bob Bush

**New Mexico Environment Department, Air Quality Bureau**
- Andy Emeanuwa, Environmental Specialist
- Fabian Macias, Ambient Air Quality Monitoring Section Manager

**New Mexico Game and Fish Department***
- Andrew Sandoval, Conservation Services Division
- Bill Hayes, Conservation Services Division

**R. E Turner Ranch**
- Tom Waddel, Ranch Manager

**U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office***
- Joy E. Nicholopoulos, Field Supervisor

* Draft copies of this Environmental Assessment were provided to these agencies for review and comment (see Appendix B).

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# 7.0 REFERENCES

Brown, Ted L.
1996 A report on the New Mexico Herpetological Society's Spring 1996 field trip to the Armendaris Ranch, Sierra County, New Mexico. As referenced in U.S. Navy 1998.

Bryant, Jr. Keith L.
1974 *History of the Atchison, Topeka, and Santa Fe Railway*. Macmillian, New York. (Reprinted 1984 by University of Nebraska Press, Lincoln and London.)

Collins, Kirstin
2000 (in preparation). Archaeological survey of NSSS Elephant Butte. Naval Facilities Engineering Command, Southwest Division.

Etchieson, Meeks
1982 Cultural Resources Survey in Selected Areas of Middle Rio Grande Project, New Mexico. Submitted to the U.S. Bureau of Reclamation, Albuquerque Area Office ALB-158. NMCRIS Report No. 11507.

Irwin-Williams, Cynthia
1979 Post-Pleistocene Archaeology 7000-2000 B.C. In *Southwest*, edited by Alfonzo Ortiz, pp. 31-60. Handbook of North American Indians, Vol. 9, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Lekson, Stephen H.
1984 Archaeological Reconnaissance of the Rio Grande Valley Sierra County, New Mexico. Submitted to New Mexico Office of Cultural Affairs, Historic Preservation Division. NMCRIS Report No. 8479.

Martin, Paul
1979 Prehistory: Mogollon. In *Southwest*, edited by Alfonzo Ortiz, pp. 61-74. Handbook of North American Indians, Vol. 9, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Massey, Barry
2000 Turner's Ranches Returning West to Past. *Albuquerque Journal*. March 11. pg. 1.

Opler, Morris E.

1983 The Apachean Culture Patter and Its Origins. In *Southwest*, edited by Alfonzo Ortiz, pp.368-392. Handbook of North American Indians, Vol. 10, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

U.S. Navy

1998 *Integrated Natural Resources Management Plan Elephant Butte Naval Space Surveillance Station*. Prepared by Tierra Data Systems for Southwest Division, Naval Facilities Engineering Command and Naval Space Command under Contract No. N687111-95-D-7605/0018. November.

1995 Appraisal of the Armendaris Ranch. Prepared by Armand Smith & Associates for Southwest Division, Naval Facilities Engineering Command. July 14.

# 8.0 ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| BO | Biological Opinion |
| CAA | Clean Air Act |
| CWA | Clean Water Act |
| DON | Department of the Navy |
| EA | Environmental Assessment |
| EPA | (U.S.) Environmental Protection Agency |
| ESA | Endangered Species Act |
| INRMP | Integrated Natural Resource Management Plan |
| NAAQS | National Ambient Air Quality Standards |
| NAVSPACECOM | Naval Space Command |
| NEPA | National Environmental Policy Act |
| NMED | New Mexico Environment Department |
| NRHP | National Register of Historic Places |
| NSSS | Naval Space Surveillance Station |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Service |

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# Appendices

**Appendix A:** Native Plants List

**Appendix B:** Review Comments from the U.S. Fish and Wildlife Service and New Mexico Game and Fish Department

# APPENDIX A: NATIVE PLANTS LIST

## Appendix A
## Native Plant List

This appendix lists native southwestern plants suitable for future landscaping at Naval Space Surveillance Station (NSSS) Elephant Butte. This list was derived from the "Selected Best Plants for Truth or Consequences" plant pallette contained in *Best Plants for New Mexico Gardens and Landscapes* (Baker H. Marrow 1995, University of New Mexico Press, Albuquerque). This list is not all inclusive, and other native plants may be used for future landscaping efforts at the Station.

### TREES

#### Deciduous Shade Trees

Arizona alder *(Alnus oblongifolia)*
Arizona ash *(Fraxinus velutina)*
Chinaberry *(Melia azedarach)*
Rio Grande cottonwood *(Populus fremontii 'Wislizeni')*
New Mexico locust *(Robinia neomexicana)*
Honey mesquite *(Prosopis glandulosa)*
Western soapberry *(Sapindus drummondii)*
Arizona Sycamore *(Plantanus wrightii)*
Arizona walnut *(Juglans major)*

#### Flowering Ornamental Trees

Desert willow *(Chilopsis linearis)*
Mexican elder *(Sambucus caerulea neomexicana)*

#### Evergreen Trees

Alligator juniper *(Juniperus deppeana)*
Singleseed juniper *(Juniperus monosperma)*
Texas madrone *(Arbutus texana)*
Limber pine *(Pinus fexilis)*
Piñon pine *(Pinus edulis)*
Palm yucca *(Yucca torreyi)*
Soaptree yucca *(Yucca elata)*

## SHRUBS

### Deciduous

Apache plume *(Fallugia paradoxa)*
Cliff fendlerbush *(Fendlera rupicola)*
Screwbean mesquite *(Prosopis pubescens)*
Mountian mahogany *(Cercocarpus montanus)*
New Mexico olive *(Forestiera neomexicana)*
Littleleaf sumac *(Rhus microphylla)*
Skunkbush *(Rhus trilobata)*

### Evergreen

Century plant *(Agave americana)*
Parry agave *(Agave parryi)*
Lechugilla *(Agave lechugilla)*
Beargrass *(Nolina microcarpa)*
Algerita *(Mahonia haematocarpa)*
Agritos *(Mahonia trifoliolata)*
Mormon tea *(Ephedra* spp.)
Sand sage *(Artemisia filifolia)*
Fourwing saltbush *(Atriplex canescens)*
Seepwillow *(Baccharis sarothroides)*

## GROUND COVERS

### Deciduous

Prairie sage *(Artemisia ludoviciana)*

## GRASSES

### Native Turf and General-Use Species

Galleta *(Hilaria jamesii)*
Blue grama *(Bouteloua gracilis)*
Sideoats grama *(Bouteloua curtipendula)*

### Ornamental Species

Alkali sacaton *(Sporobolus airoides)*
Sand dropseed *(Sporobolus cryptandrus)*
Purple threeawn *(Aristida longiseta)*

# APPENDIX B: REVIEW COMMENTS FROM THE U.S. FISH AND WILDLIFE SERVICE AND NEW MEXICO GAME AND FISH DEPARTMENT

# APPENDIX B

## REVIEW COMMENTS FROM THE U.S. FISH AND WILDLIFE SERVICE AND NEW MEXICO GAME AND FISH DEPARTMENT

Copies of the Screencheck Final Environmental Assessment were provided to the New Mexico Ecological Services Field Office of the U.S. Fish and Wildlife Service and to the Conservation Services Division of the New Mexico Game and Fish Department.

The U.S. Fish and Wildlife Service submitted a letter indicating that the Final INRMP is adequate and providing minor comments on the Environmental Assessment. A copy of that letter follows.

The New Mexico Game and Fish Department did not provide any written comments on the Environmental Assessment.

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542


September 19, 2000

Cons. # 2-22-99-I-182

Mr. Michael C. Stroud
Natural and Cultural Resources Lead, SST
Department of the Navy, Southwest Division
1220 Pacific Highway
San Diego, CA 92132-5190

Dear Mr. Stroud:

This responds to your August 16, 2000, letter requesting our review of the final Integrated Natural Resources Management Plan (INRMP) for the Naval Space Surveillance Station (NSSS) Elephant Butte Installation, Sierra County, New Mexico. The station is approximately 203 acres and occurs within the Jornada Basin, comprising the northernmost stretch of the Chihuahuan desert grasslands. The stated purpose of the INRMP is to meet statutory requirements under the Sikes Act to provide for conservation and rehabilitation of natural resources at military installations to the extent that such activities are consistent with use of the installation for military preparedness, including the NSSS Elephant Butte.

## GENERAL COMMENTS

The final INRMP is adequate in addressing fish and wildlife resource concerns. In a letter dated April 8, 1999, the Service provided comments on the draft INRMP (see enclosed). The final INRMP appears to incorporate most of those comments.

## SPECIFIC COMMENTS

Page ES-2, last paragraph
There is a reference to excluding "the construction of raptor perches and nest boxes based on an Arizona Department of Game and Fish request." Should this read "New Mexico Department of Game and Fish request" as stated on Page 2-8? This is also a Service recommendation (see enclosed).

SUMMARY COMMENTS

Given the relatively small size of the station, implementation of the INRMP strategies along with the enclosed recommendations would benefit general wildlife resources occurring onsite. Establishment of the native vegetational component onsite would appear to address many of the concerns identified in the INRMP such as soil erosion, wildlife protection, habitat management or enhancement, and migratory birds.

We appreciate the opportunity to provide comments on the final INRMP. If we can be of any further assistance, please contact Mike Buntjer at (505) 346-2525 ext. 133.

Sincerely,

Joy E. Nicholopoulos

Joy E. Nicholopoulos
Field Supervisor

Enclosure

cc: (w/o enc)
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Energy, Minerals, and Natural Resources Department, Forestry and Resources Conservation Division, Santa Fe, New Mexico