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Policy Analysis of Chapter 101A, Readiness and Range Preservation, of the National Defense Authorization Act for Fiscal Year 2004

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POLICY ANALYSIS OF CHAPTER 101A, READINESS AND RANGE PRESERVATION, OF THE NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2004

THESIS

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Abstract

This research analyzed the United States Air Force's ability to meet the two conditions required for exemptions of critical habitat designations that are authorized under the National Defense Authorization Act for Fiscal Year 2004. The research was limited to natural resources management on United States Air Force training ranges. Department of Defense exemptions can only be achieved if specific conditions exist. The conditions require the development and management of an Integrated Natural Resources Management Plan that conserves threatened and endangered species and other natural resources to ensure the successful management of practices identified. The results of this project determined that United States Air Force's natural resources managers have Integrated Natural Resources Management Plans in place and have dedicated the resources to implement management polices identified in those plans. Electronic, internet-based surveys were used as the primary data collection tool. Phenomenological Analysis was used to perform an in-depth review of selected issues that were identified via the survey. Unexpected conclusions from this research highlighted a need for the United States Air Force to strengthen its education process for implementing new policies resulting from the implementation of the National Defense Authorization Act for Fiscal Year 2004.

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POLICY ANALYSIS OF CHAPTER 101A, READINESS AND RANGE PRESERVATION, OF THE NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2004

Chapter I – Introduction

Background

Within the boundaries of the United States, encroachment has limited the operation of Department of Defense (DOD) training and testing ranges (GAO, 2002:3-5). In the past, encroachment issues have been dealt with on an individual basis but have recently been recognized by the DOD as a larger issue that is now impacting the overall readiness of the nation's military (GAO, 2002:5). The DOD views encroachment as the cumulative results of any and all outside influences that inhibit normal military training (GAO, 2002:1). According to the GAO, specific encroachment issues have been identified all resulting in limiting the DOD's access to range training and testing (GAO, 2002:3-5).

The DOD argued that it faces increasing difficulties in utilizing military training ranges for realistic training (GAO, 2002:1). Strict compliance with current environmental regulations limit access to military ranges because large portions of the ranges have been designated as critical habitat for threatened and endangered species (GAO, 2002:6). With over 300 federally listed threatened or endangered species, the DOD had to modify, or, in some cases, cancel training as a result of critical habitat designations on military installations (GAO, 2002).

The DOD needs the flexibility to balance the management of natural resources with access to training ranges by using scientifically based information and principles as

the basis for sound stewardship of our nation's natural resources. The Sikes Act Improvement Act (SAIA) of 1997 requires the DOD to develop and implement an Integrated Natural Resources Management Plan (INRMP) in cooperation with the U.S. Fish and Wildlife Service and the appropriate state fish and game agency. (USC, 1997b: Sec 2904). The Act mandates that the DOD actively manage all natural resources on military installations using scientifically based information and principles (1997b: Sec 2904).

The DOD sought legislative reforms, exempting the designation of critical habitat on military installations. This reform included consolidating Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA) requirements under the Sikes Act Improvement Act. This would enable the DOD to balance the management of critical species with range access and military readiness by fully utilizing the conservation provisions of the existing INRMP authority. Using an installation's INRMP, the Air Force would continue to actively manage natural resources currently existing on military installations without the burdensome consultation requirements of critical habitat management under the ESA and the MMPA.

The DOD obtained relief on the issue of balancing range access and critical species conservation in the National Defense Authorization Act for Fiscal Year 2004. The concern is based on the interpretation of harassment of an individual species or population. This raises the issue of occupied verses unoccupied critical habitat. Legal definitions of both terms are defined at the end of the chapter. In essence, unoccupied critical habitat is an area that is designated as critical habitat but currently has no threatened or endangered species existing on the area. Under current laws these areas are

offered the same protection as areas with existing threatened or endangered species. Some may interpret the use of this land as harassment even though there is no critical species thriving on or using the habitat. Using an INRMP approach allows DOD natural resources managers to manage critical species and habitat with existing populations and at the same time access lands that don't have critical species existing on them. This enables the DOD to balance critical species conservation with military readiness.

Currently, the Secretary of Defense has the authority under the ESA to exempt the military from any of the Act's requirements that he judges a threat to national security. However, utilizing such an exception for routine training exercises can be administratively burdensome and would undoubtedly engender bad public relations. Furthermore, under the ESA, the Secretary of the Interior has had the authority to exempt any government agency from designating areas as critical habitat when the requesting agency has clearly proven the benefits of the action outweigh the protection offered to the threatened or endangered species (USC, 1973: Sec 4). The DOD's argument is that an INRMP conserves threatened and endangered species and meets the intent of the ESA (House Resource Subcommittee on Fisheries Conservation, Wildlife and Oceans, 2003).

As a consequence, the military proposed to exploit the new expanded requirements of the INRMP and thus eliminate a considerable administrative burden presently imposed by the ESA for consultation on impact to areas of critical habitat (USC, 1997b: Sec 2904). Consolidation of critical habitat designation requirements under one law enables military personnel to maintain proper stewardship of natural resources on military installations by combining all environmental efforts into a single INRMP.

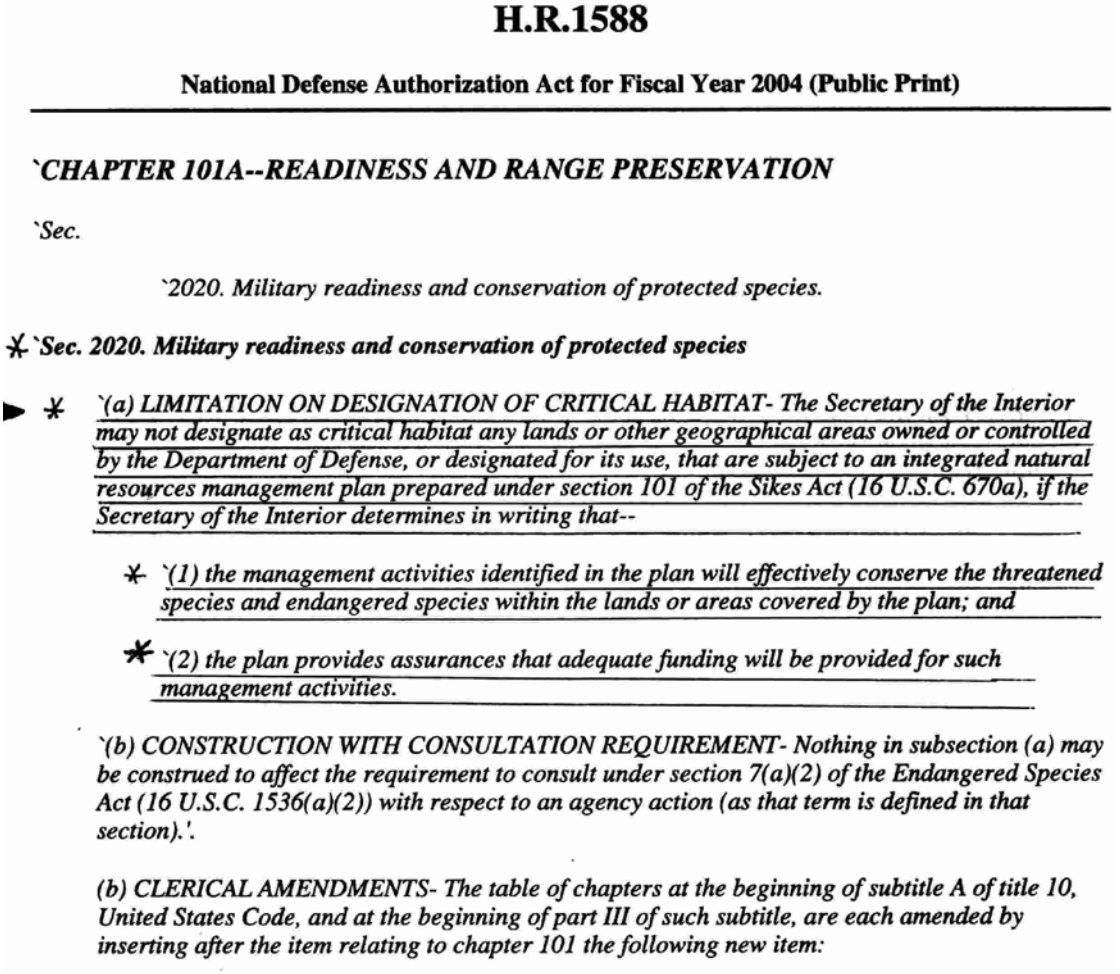
Recently the DOD abandoned their efforts to consolidate critical habitat management requirements under the Sikes Act. This effort was replaced with the addition of Chapter 101A, Readiness and Range Preservation, of the National Defense Authorization Act for Fiscal Year 2004. Chapter 101A mandates the Secretary of the Interior to exempt the DOD from critical habitat designations on military installations if the installation has an INRMP and the resources to effectively implement it. The DOD is still required to meet the intent of the ESA by actively conserving threatened and endangered species but will be relieved of the administrative burdens associated with critical habitat designations. For instance, the military would no longer be required to limit access to areas that are unoccupied habitat, but are still protected because the area has the potential to support critical species.

Clearly the military is meeting the intent of the ESA. The request for the Secretary of the Interior to exercise her authority to exempt the military from designating critical habitat areas on military installations, if the installations prove their INRMP actively conserves threatened and endangered species and will in no way contribute to the endangerment of any species. However, consolidation of current laws is clearly an issue that has pros and cons. Congressional testimony, arguing for and against consolidation of environmental laws, shows that this issue is both politically sensitive and current. Scientifically based research is required to find and develop accurate information about the impacts of natural resources management policies. With accurate information, policy makers can understand and formulate critical decisions based on sound scientific knowledge, and avoid decisions based on political rhetoric. The military could clearly

benefit from research that investigates and analyzes the impacts of new management policies.

Problem

As a result of the DOD's efforts to consolidate environmental requirements, in May of 2003 both the United States House of Representatives and the United States Senate approved the National Defense Authorization Act for Fiscal Year 2004 (H.R.1588, 2003). Chapter 101A of the National Defense Authorization Act of Fiscal Year 2004 contains specific language that mandates the Secretary of the Interior exempt the DOD from portions of the Endangered Species Act (ESA) that require the designation of critical habitat (H.R.1588, 2003). DOD exemptions can only be achieved if specific conditions exist: 1) development and management of an INRMP that conserves threatened and endangered species (H.R.1588, 2003), and 2) dedicated resources are available and committed to ensure the successful management of practices identified in the INRMP (H.R.1588, 2003). A copy of the specific paragraph is shown below in Figure 1.



H.R.1588

National Defense Authorization Act for Fiscal Year 2004 (Public Print)

`CHAPTER 101A--READINESS AND RANGE PRESERVATION

`Sec.

`2020. Military readiness and conservation of protected species.

`Sec. 2020. Military readiness and conservation of protected species

`(a) LIMITATION ON DESIGNATION OF CRITICAL HABITAT- The Secretary of the Interior may not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary of the Interior determines in writing that--

`(1) the management activities identified in the plan will effectively conserve the threatened species and endangered species within the lands or areas covered by the plan; and

`(2) the plan provides assurances that adequate funding will be provided for such management activities.

`(b) CONSTRUCTION WITH CONSULTATION REQUIREMENT- Nothing in subsection (a) may be construed to affect the requirement to consult under section 7(a)(2) of the Endangered Species Act (16 U.S.C. 1536(a)(2)) with respect to an agency action (as that term is defined in that section).'.

(b) CLERICAL AMENDMENTS- The table of chapters at the beginning of subtitle A of title 10, United States Code, and at the beginning of part III of such subtitle, are each amended by inserting after the item relating to chapter 101 the following new item:

Figure 1 - H.R. 1588 (Chapter 101A)

Research Objective and Questions

The National Defense Authorization Act of Fiscal Year 2004 specifically limits the Secretary of the Interior from designating lands owned by the DOD as critical habitat if those lands are managed with an Integrated Natural Resources Management Plan prepared under section 101 of the Sikes Act (USC, 1997b: Sec 2904); however, two conditions must exist for the military to be eligible for exemptions of the critical habitat designation.

These two conditions are:

1. The management activities must meet the intent of the ESA and conserve the threatened and endangered species identified on the lands managed under the INRMP.

2. The plan must ensure there are adequate resources dedicated to accomplishing the management activities identified in the INRMP.

The status of the USAF's natural resources managers' ability to achieve the two conditions identified in the new law is unknown and needs to be explored in order to fully understand the impact. This study performs a policy analysis that determines if:

1. Natural Resources Managers are aware of the new law and its impact on their obligations and flexibility to manage natural resources under their control.
2. Natural resources Managers understand the changes and forecast trends in the requirements to manage natural resources under the new law.
3. Natural resources management funding is increasing, decreasing, or remaining the same and if it will meet the requirements of the new law.
4. Natural resources Management manpower is increasing, decreasing, or remaining the same and if it will meet the requirements of the new law.
5. The new law will change the protection afforded to threatened and endangered species in a positive or negative way.

Scope

This thesis research project will focus on the impact of Chapter 101A, Readiness and Range Preservation, of the National Defense Authorization Act of Fiscal Year 2004 on the changes to policy and the implications those changes for USAF natural resources managers. The specific breadth of this project is limited to analyzing the impacts of the new law on natural resources managers charged with maintaining an INRMP for USAF training ranges. Air National Guard ranges were included as part of the Air Force total force.

This research project covers governmental reports, legislation, periodicals, and current bulletins. In order to understand current natural resources management practices, this research explores natural resources management through discussion and interviews with natural resources management experts and practitioners. The literature reviewed is concentrated on the following:

1. The relationship between range use and readiness
2. Governing legislation that influences environmental impacts
3. The impact of critical species on military ranges
4. The necessary background and basic characteristics of critical habitat designation
5. The specifics of natural resources management within the USAF

Definitions

The following key terms are defined and used throughout this report:

1. Integrated Natural Resources Management Plan (INRMP): The INRMP is a planning document used by the Department of Defense as a critical tool in managing natural resources on military installations. It is used to ensure the successful accomplishment of the military mission by incorporating all aspects of natural resources management into a single planning document (AFI 32-7064, 1997). The INRMP consolidates environmental requirements as well as the rest of the installation's missions, and balances mission accomplishment with natural resources management (AFI 32-7064, 1997). In compliance with the Sikes Act, military installations must use professionally trained personnel to manage fish and wildlife programs under an INRMP (AFI 32-7064, 1997).
2. Encroachment: The Department of Defense defines encroachment as the cumulative results of any and all outside influences that inhibit normal military training (GAO, 2002:1)
3. Training Ranges: The term "training ranges" is used to collectively refer to air ranges, live-fire ranges, ground maneuver ranges, and sea ranges (GAO, 2002:1). For the purpose of this study the United States Air Forces training ranges are classified as live-fire air ranges.
4. Occupied Critical Habitat: The specific areas within the geographical area occupied by the species, at the time it is listed as threatened or endangered, on

which are found physical or biological features essential to the conservation of the species, and which may require special management considerations are protection (50 CFR 17, 2000)

5. Unoccupied Habitat: Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species (50 CFR 17, 2000)

Summary

This chapter summarizes the background, problem, objectives, and scope, associated with a policy analysis of section 101 of the National Defense Authorization Act of Fiscal Year 2004. The next chapter will examine the appropriate literature associated with this research effort, including governmental reports, DOD and Air Force instructions, legislation, periodic reviews, and current bulletins. Chapter 3 describes the methodology used to perform this research and collect data. Chapter 4 will analyze the data collected and formulate the information in order to draw conclusions. Chapter 5 provides a summary of conclusions and suggestions for future research.

Chapter II - Literature Review

Introduction

This literature review discusses the effects of environmental requirements on military readiness as a result of limiting access to military ranges because of critical habitat protection laws. The Department of Defense (DOD) sought legislative reform to three environmental laws that would enable the military to balance the management of critical species with military training requirements.

This review establishes a critical knowledge base explaining the impact on readiness associated with limiting range access due to environmental management requirements. Specifically, this review demonstrates how the designation of critical habitat, for federally listed threatened and endangered species habitat under the Endangered Species Act, impacts range use and therefore military readiness. This review covers governmental reports, legislation, periodic reviews, and current bulletins. In order to clarify the specific effect of environmental legislation on range use, this literature review covers the following issues:

1. The relationship between range use and readiness
2. Governing legislation that influences environmental impacts
3. The impact of critical species habitat designation on military ranges
4. Natural resources management within the USAF

Relationship Between Range Use and Readiness

Department of Defense (DOD) Perspective

According to a General Accounting Office (GAO) report, senior DOD officials testified before congress that the DOD faces increasing difficulties in carrying out realistic training missions on military training ranges (GAO, 2002:1). According to the GAO, eight different encroachment issues affect or may affect military training and readiness: endangered species habitat, unexploded ordinance and munitions, access to radio frequencies, protected marine resources, competition for airspace, air pollution, noise pollution, and urban growth (GAO, 2002:1). Each issue has some impact on the local environment on and around military installations, but this review covers research specifically related to endangered species habitat and the protected marine resources because these two issues define the problem that is causing the DOD to seek legislative reform.

The DOD proposal is to modify existing legislation, and thereby minimize the impact of the Endangered Species Act and Marine Mammal Protection Act on military readiness. The DOD is seeking to consolidate environmental requirements for military installations under the existing requirements to maintain an INRMP that is mandated by the Sikes Act Improvement Act of 1997 (GAO, 2002:25).

Originally, the DOD proposed to consolidate environmental requirements by modifying the Sikes Act to permit installation resources, managed under an INRMP, to be excluded from critical habitat designations (GAO, 2002:25). The consolidation of requirements alleviates any significant limitations imposed by the Endangered Species

and Marine Mammal Protection Acts on military installations, enabling military personnel to conduct training exercises in accordance with the INRMP, which ultimately provides more flexibility in mitigating environmental impacts caused by military training. However, the DOD has done a poor job of documenting any real impact on training and readiness (GAO, 2002:9). The lack of documentation undermines the DOD's argument that critical species habitat designations limit training and readiness.

Legislation Governing Environmental Impacts

The DOD has proposed consolidating several requirements mandated by the Endangered Species Act (ESA) and the Marine Mammal Protection Act Amendment (MMPAA) under the Sikes Act Improvement Act (GAO, 2002). Of significant importance is the exclusion of critical habitat designation on military installations. The ESA is the primary law that identifies critical habitat designation. Additionally, portions of the MMPAA identify marine mammals as critical species that carry the same protection status as land animals protected under the ESA. The Sikes Act was amended to become the Sikes Act Improvement Act (SAIA) and it requires that military natural resources be managed with an Integrated Natural Resources Management Plan (INRMP). The INRMP is a coordinated effort between all stakeholders and uses the best available scientific information and technology to manage all aspects of the natural environment, including threatened and endangered species. The INRMP includes provisions to ensure military readiness by balancing training requirements with conservation and protection. Even though the INRMP is a consolidated effort that serves the purpose of conserving threatened and endangered species, it does not allow for exemption of critical habitat designations for the military.

Sikes Act and the Sikes Act Improvement Amendment of 1997

The Sikes Act was originally enacted in 1960 to establish governing policies for the planning, development, maintenance, and coordination of wildlife, fish, and game activities on military installations (USC, 1960). The Sikes Act of 1960 was a good foundation for governing natural resources activities on military installations but it largely dealt with the management of hunting and fishing programs and other commodity-based programs. The original Sikes Act has been amended four times, most recently in 1997, resulting in the Sikes Act Improvement Act (SAIA) of 1997 (USC, 1997b). The most recent amendment is by far the strongest in the Act's history which mandates the establishment of a comprehensive natural resources program on all military lands. However, it is important to note that the SAIA is just an amendment to the original Sikes Act of 1960.

Under the SAIA of 1997, the DOD is required to implement and maintain an Integrated Natural resources Management Plan (INRMP) that provides for the conservation and rehabilitation of natural resources on installations with significant natural resources (USC, 1997b: Sec 2904). The act further requires the INRMP to be subject to public comment and that the program it outlines be funded (USC, 1997b: Sec 2904). In essence, an INRMP is the planning document used by the DOD to perform strategic management of natural resources on military installations. The resulting plan requires all stakeholders to agree on methods of conservation, protection, and management of fish and wildlife resources (USC, 1997b: Sec 2904). This plan is a critical management tool that allows for the military needs while ensuring environmental conservation is not compromised (USC, 1997b: Sec 2904). The SAIA makes it clear that

the INRMP must contain several key requirements. First, the Amendment ensures the military will have no net loss in capability as a result of management activities associated with the INRMP (USC, 1997b: Sec 2904). The Amendment requires the plan to accommodate the environment by requiring mutual acceptance of methods of conservation by the military, the USFWS, the state fish and game agency, and any other stakeholders (USC, 1997b: Sec 2904). Specifically stated in the Amendment is that all other laws and regulations regarding environmental conservation are still required and that no other requirements can be enhanced or diminished as a result of the act (USC, 1997b: Sec 2904). The DOD seeks to change the SAIA to allow for a reduction in requirements mandated by the Endangered Species Act and the Marine Mammal Protection Act Amendment if the DOD can demonstrate it is meeting the intent of these laws with the use of INRMPs.

Endangered Species Act (ESA)

The purpose of the ESA is to provide for the protection of all endangered and threatened species of plants or wildlife and the critical habitat that supports them (USC, 1973: Sec 2). The ESA specifically requires any area that supports a threatened or endangered species to be designated as "critical habitat" (USC, 1973: Sec 4). Under the ESA, the Secretary of the Interior shall use the best scientific data available, in conjunction with economic and other critical considerations, to designate a specific area as critical habitat for threatened or endangered species (USC, 1973: Sec 4). The Secretary of the Interior has the authority to exclude any critical habitat designation if he determines that the benefits of the exclusion would outweigh the benefits of the

designation (USC, 1973: Sec 4). This section of the law provides the military a means of exemption from the ESA.

The DOD's required use of an INRMP under the Sikes Act (USC, 1960) would provide the Secretary of the Interior reasonable justification for exercising an exemption of the ESA (USC, 1973). The INRMP accommodates the requirement for using the best scientific data available to manage the area by requiring USFWS coordination and approval for the INRMP (USC, 1997b: SEC 2904). Section 4 of the ESA allows the Secretary of the Interior to exclude labeling an area as critical habitat if the economic and other relevant benefits outweigh the environmental benefits (USC, 1973: Sec 4). A reasonable interpretation of other relevant benefits would be national security interests that require specific military access to ensure military readiness.

Marine Mammal Protection Act of 1972 (as Amended 1997)

The Marine Mammal Protection Act (MMPA) is one year older than the ESA. However, the MMPA is very similar to the ESA and contains a great deal of overlap and redundancy. The MMPA was amended in 1997 to become the Marine Mammal Protection Act as Amended (MMPAA) and includes provisions directed under the ESA. The purpose of the MMPAA is to provide for the protection of all endangered and threatened marine mammal species, and the critical habitat that supports them (USC, 1997a: Sec 2). The MMPAA specifically requires the designation of essential habitats for any area that supports any marine mammals (USC, 1997a: Sec 2).

A major difference between the two acts is their focus. The MMPAA is focused primarily on international relations and specifically highlights the need to negotiate arrangements for the conservation and management of marine wildlife with the

international community (USC, 1997a: Sec 2). This is different from ESA, which is focused on domestic regulations. However, both acts overlap with domestic and international requirements. The 1997 amendment to the MMPAA actually calls for consolidation with the ESA by listing specific marine mammal species as endangered or threatened under the ESA (USC, 1997a: Sec 3)

Under the MMPAA the Secretary of the Interior has the authority to issue permits, which authorize the taking of marine mammals. Takings are only authorized if they are necessary to balance the protection of the species with national security requirements. Takings require a permit that must be reviewed by the Marine Mammal Commission and the Committee of Scientific Advisors on Marine Mammals (USC, 1997a: Sec 101). Furthermore, the Secretary of the Interior has the authority to exempt certain acts from portions of the law if the activity is guided by the best available scientific knowledge and sound conservation practices that are consistent with the intent of the law (USC, 1997a: Sec 101).

Similar to the ESA, this Act also allows for the Secretary of the Interior to exempt or waiver certain activities if the activity is guided by the best available scientific knowledge that is consistent with the concepts of conservation of marine mammals (USC, 1997a: Sec 101). The use of an INRMP as a means of ensuring the best available scientific practices is consistent with the intent of marine mammal conservation. Using the INRMP as a mechanism to partner the Marine Mammal Commission, the Committee of Scientific Advisors on Marine Mammals, and the DOD, is consistent with the intent of the law and should ensure the best available conservation practices are in place to allow the military to carry out necessary training and at the same time protect marine mammals.

Unlike the ESA, the MMPAA does not allow for military exemptions of the law for the specific reason of national security. However, it is clear that the Secretary of the Interior has the authority to issue the necessary permits if the INRMP accommodates all the necessary requirements.

Congressional Testimonies

The DOD's push for environmental legislation reform has resulted in congressional hearings necessary to determine the need and scope of reform. This review focuses on testimony at two major hearings that define both sides of the arguments on DOD's proposed legislative reform. The first is the congressional testimony by Dr. Benjamin N. Tuggle, Chief, Division of Federal Program Activities U.S. Fish and Wildlife Service (House Resource Subcommittee on Fisheries Conservation, Wildlife and Oceans, 2003). His testimony was given to the House Resources Subcommittee on 10 April 2003. Dr. Tuggle argued for the Sikes Act Reauthorization Act of 2003, which reinforces the DOD's position for exemptions to the ESA and the MMPAA regarding critical habitat designations. The second is the congressional testimony by Ms. Jamie Rappaport; Clark Senior Vice President for Conservation Programs, National Wildlife Federation and former Director of the U.S. Fish and Wildlife Service in the Clinton Administration (Senate Armed Services Subcommittee on Readiness, 2003). Her testimony was given on 1 April 2003 to the Senate Armed Services Committee. Ms. Rappaport argues against exemptions to the ESA as a result of INRMP reform.

Dr. Tuggle's testimony confirms the unified cabinet-level positions of the Bush Administration between the DOD and the USFWS (House Resource Subcommittee on Fisheries Conservation, Wildlife and Oceans, 2003). Military INRMPs require

cooperation and approval from the USFWS to ensure proper management of natural resources on military installations (USC, 1997b). Dr. Tuggle states that military INRMP's, at a minimum, have agreement between the agencies on conservation, protection, and management of fish and wildlife resources (House Resource Subcommittee on Fisheries Conservation, Wildlife and Oceans, 2003). He testified that the SAIA neither enlarges nor diminishes each party's legal authorities (2003). He continued to say that INRMPs do not compromise the capability of the installations' lands to support the military's mission (2003). Dr. Tuggle summarized the intent of the INRMP as follows:

> Military lands contain rare and unique plant and animal species and native habitats such as old-growth forests, tall-grass prairies, and vernal pool wetlands. Over 300 threatened and endangered species live on DOD-managed lands. These lands and the species they support are an essential component of our nation's biodiversity. Recognizing this, the Fish and Wildlife Service has worked extensively with the State fish and wildlife agencies and military installations to develop plans that will effectively conserve fish and wildlife resources and promote compatible outdoor recreation, while enhancing military preparedness through improved stewardship of the land.

Dr. Tuggle stated that approved INRMPs are an important tool to ensuring the DOD's stewardship and certainty in meeting their environmental responsibilities (House Resource Subcommittee on Fisheries Conservation, Wildlife and Oceans, 2003). He believed that the Readiness and Range Preservation Initiative in the National Defense Authorization Act for Fiscal Year 2004 includes the right mechanisms for proper management of threatened and endangered species. This initiative obviates the need for designation of critical habitat on military installations and at the same time meets the intent of environmental legislation to provide proper stewardship of the Nation's natural resources (House Resource Subcommittee on Fisheries Conservation, Wildlife and Oceans, 2003). This key initiative provides military leaders the flexibility to balance

conservation with military readiness requirements. The approval of the USFWS and State fish and wildlife agencies in the INRMP process provides the necessary safeguards needed to achieve this delicate balance between conservation and readiness.

Ms. Rappaport argued against the DOD's proposed legislation. Her testimony contains the following (Senate Armed Services Subcommittee on Readiness, 2003):

> The administration now proposed in its Readiness and Range Preservation Initiative that Congress scale back DOD's responsibilities to conserve wildlife and to protect people from the hazardous pollution that DOD generates. The proposal is both unjustified and dangerous. It is unjustified because DOD's longstanding approach of working through compliance issues on an installation-by-installation basis works. As DOD itself has acknowledged, our armed forces are as prepared today as they ever have been in their history, and this had been achieved without broad exemptions from environmental laws.

Ms. Rappaport clearly stated that the military is functioning satisfactorily under the current regulations. This contradicts the military's statements given to the GAO, in which the DOD indicated there is an increasing problem with readiness due to environmental regulations (GAO, 2002:1).

Both sides of the issue are clearly presented in the congressional testimony highlighted above. However, it is important to point out that the DOD is not seeking a blanket exemption to environmental laws but is seeking legislative reform that eliminates an excessive administrative burden associated with meeting the requirements of current laws. Neither side of the testimony mentions the DOD's lack of documentation supporting the argument either way.

The impact of critical species habitat designation on military ranges

Designation of areas on military installations, specifically exercise training ranges, as critical habitat for endangered species reduces the military's flexibility to use the land for training (GAO, 2002:6). The reduced military access to land for training

limits both the amount and frequency of military training. Under the Endangered Species Act, the military is required to ensure training actions do not destroy or adversely modify areas designated as critical habitat for an endangered species (GAO, 2002:6).

Similar to the requirements resulting from the Endangered Species Act, the military is affected by marine mammal protection laws (GAO, 2002:7). The DOD believes the ability to train in aquatic environments is limited by environmental regulations that empower regulators to use stringent controls for training actions (GAO, 2002:7). For example, regulators have the authority to shut down ongoing training if the regulator feels the training is adversely affecting a critical habitat that supports a threatened or endangered species.

Section 3 of the Endangered Species Act defines critical habitat as specific areas within the geographical area occupied by a threatened or endangered species, at the time it is listed, which contain physical and biological features essential for the conservation of the species (USC, 1973). The specific wording of the law requires critical habitat designation for lands that support or have the potential to support threatened or endangered species. In some cases, because the law requires protection of lands that have potential to support critical species, the military could conceivably be prevented from training on lands that are unoccupied by any threatened or endangered species although no circumstance has ever arisen. In this case the INRMP can identify the unoccupied area and propose the military have access to the land for training provided certain mitigation measures were met. This is consistent with Section 4(b)2 of the ESA, which allows for exclusions to critical habitat designation when it is clear that the benefits of the exclusion outweigh the benefits of designating an area as critical habitat (USC, 1973).

Natural Resources Management within the USAF

Department of Defense Instruction – 4517, Environmental Conservation Program

DOD Instruction 4517.3 states that conservation management plans shall be prepared, maintained, and implemented for all lands and waters under DOD control that contain natural resources (DOD 4517.3, 1996). DOD Instruction 4715.9 ensures military compliance with environmental regulations by implementing policy and assigning responsibilities (DOD 4715.9, 1996). Section D (3) of the instruction identifies the DOD policy toward environmental planning as the integration of environmental considerations into installation master planning and operational planning (DOD 4715.9, 1996).

The DOD 4517 Instruction makes it clear that environmental planners need to balance operational planning with the impact such activities would have on the environment. Under Section E (1), the Deputy Under Secretary of Defense for Environmental Security is given specific guidance to plan, program, and budget for environmental planning, analysis, and execution (DOD 4715.9, 1996). Section E (2) clearly identifies the same responsibilities for each DOD component (DOD 4715.9, 1996). Additionally, DOD components are mandated to minimize potential delays and conflicts in mission execution by integrating environmental planning and budgeting in advance of mission execution (DOD 4715.9: Sec E, 1996).

Integration of environmental laws with operational planning, training, and execution is a fundamental policy of the USAF and follows constantly with DOD Instruction 4715. In this instruction, the DOD clearly identifies its intent towards

environmental policies and responsibilities, which the Air Force further defines in greater detail within AFI 32-7064.

Untied States Air Force Instruction 32-7064, Integrated Natural resources Management

The intent of AFI 32-7064 is to provide management guidance to USAF units regarding natural resources management on USAF properties. The instruction ensures that USAF units comply with federal, state, and local natural resources management laws and standards (AFI 32-7064, 1997). The instruction clearly identifies the primary objective of USAF natural resources management programs. It states that the USAF will ensure continued access to land and airspace required to accomplish the Air Force mission by maintaining these resources in a healthy condition (AFI 32-7064, 1997).

Section 2 of the instruction identifies the INRMP as the chief tool used for installation ecosystem management (AFI 32-7064, 1997). Under the INRMP, the Air Force will ensure successful execution of the Air Forces missions by integrating all aspects of natural resources management with each other and the rest of the installation missions (AFI 32-7064, 1997).

In order to meet mandatory requirements dictated by the Sikes Act (USC, 1960), Section 6 of the instruction requires installations to use professionally trained fish and wildlife management personnel to manage natural resources on the installation (AFI 32-7064, 1997). They are obligated to conserve threatened and endangered species and ensure the public has access to natural resources on DOD lands (AFI 32-7064, 1997).

This includes developing procedures that allow access and include collection of fishing and hunting fees, which are required by the Sikes Act (AFI-32-7064, 1997).

It is clear and consistent with DOD Instruction 4715.9 and DOD instruction 4715.3, that USAF natural resources managers are required to balance many aspects of natural resources management. Balancing the competition between military training, public access to natural resources, and critical species protection is the fundamental purpose of USAF natural resources mangers. INRMP's are the chief tool used by these managers to achieve a balance in natural resources management (AFI 32-7064, 1997).

Summary

This literature review provides a summarization and basic background to key documentation and laws. The review discussed the GAO report, the fundamental source document that defines the critical habitat designation issue for the DOD. Furthermore, the review highlights the original sources and helps to define the intent of the laws to protect critical species. Finally, this chapter uses a summarization of congressional testimony, which clearly defines both sides of the critical habitat designation issues defined in Chapter 1. The scope of Chapter 2 is focused on government reports, current legislation, and congressional testimony.

Summarized in this review is key information related to the issue defined in Chapter 1. The next chapter, Chapter 3, discusses the methodology used to collect and analyze data from natural resources managers to determine the projected impact from implementing new legislation.

Chapter III – Research Methodology

Introduction

This chapter discusses the concepts and processes used to investigate the research questions delineated in Chapter 1. This chapter defines the rationale for the selection of the research media. It defines the rationale for establishing the population and the method used to establish a credible sample of the population. Finally, the chapter develops the research methodology and the basis for data analysis.

Research Design

This research follows an in-depth review of selected issues and uses both closed and open-ended questions to capture in-depth and detailed insights into the issue of resource protection. Some statistical methods were used to analyze the data and provided succinct summaries of major trends (Patton, 1990:17). Patton suggests that qualitative studies are ideal for dynamic situations that involve human interactions (Patton, 1990:12). He states that qualitative methods enable the researcher to gather a great deal of detailed information about a much smaller number of people and cases (Patton, 1990:14). With the availability of greater detail of information, the right group of expert opinions, evaluated using qualitative methods, can produce significant insight into the issues surrounding the implementation of a new policy.

This research analyzed the implementation issues associated with Chapter 101A of the new law, the National Defense Authorization Act of Fiscal Year 2004. The research examined the expected impact, measured the capability to meet the minimum requirements, and identified variables that affect the implementation of the new law.

This research follows an in-depth review of selected issues with open-ended outcomes that can only be captured by a qualitative method of study. Statistical methods were used to form a foundation and provide succinct summaries of major trends (Patton, 1990:17). However, Patton indicates these methods cannot provide the depth, detail, and insight that qualitative measures produce (Patton, 1990:17). In order to enhance the effectiveness of the research, the researcher used a combination of simple quantitative methods along with Patton's qualitative methods to completely understand the issues.

According the Patton, author of Qualitative Evaluation and Research Methods, evaluation research examines, judges, and analyzes the effectiveness of an activity against its intended effect (Patton, 1990:11). The author states that the primary purpose of academic research is to inform and enhance decision making to solve human problems (Patton, 1990:12). In this case the effort included evaluating the probable impacts of new policies that come from implementing a new law. This matches Patton's recommendation for using evaluation research, which he indicates is an appropriate tool for performing in-depth studies of new policies, by evaluating the judgments of experts in the field (Patton, 1990:11).

Population

The general population affected by the new law included all natural resources managers within the DOD. However, the research questions were focused on the impacts of the new law on military range access and readiness. This limited the overall population of the research to natural resources managers who are responsible for the natural resources on military training ranges. Unfortunately, access to all the Services within the DOD was limited, so the study population was reduced to USAF natural

resources managers operating programs on military ranges within the boundaries of the United States.

Logical reduction of the population limited the majority of the natural resources managers used in this research to all the natural resources managers within Air Combat Command (ACC). This was done because ACC owns and operates the majority of USAF training ranges. Air National Guard (ANG) natural resources managers were included in the population because they work in combination with the ACC training mission. This produced a population size of 17.

With a population size of 17, the researcher was able to canvas the entire population, including all potential candidates. This eliminated the need to establish a representative sample of the population, strengthening the expected inferences throughout the entire USAF.

The research population is spread throughout the continental United States and would be difficult to interview in person. Therefore, an electronic survey, using Internet access, was the final choice as the means of data collection. In order to obtain access and establish credibility with the population, the ACC Natural Resources Manager and the Air National Guard Natural resources Manger electronically distributed the survey to their respective units, Appendix A. The electronic cover letter used is attached in Appendix D.

Data Collection

Data collection was conducted using anonymous structured surveys with both succinct and open-ended questions. This enabled the researcher to understand and capture unique situational responses of experts in the field without predetermining those points of view and still maintain some standardization of the responses (Patton, 1990:289). However, because the responses were limited in quality the information gathered from the survey was supplemented with information gained form the ACC and ANG Natural resources Managers.

The survey (Appendix A) was constructed using proven research design from Babbie's, Survey Research Methods (Babbie, 1990). The questions were constructed and ordered to make them easy for the participants to understand. Additionally, the survey was constructed using an electronic, Internet-based approach that minimizes the time to take the survey, estimated to be approximately 20-30 minutes. The survey was constructed to allow participants to remain anonymous. Furthermore, the information gathered from the survey was consolidated almost instantaneously and handled confidentially.

The research population was spread throughout the continental United States and would be financially prohibitive to interview in person. This drove the need to explore alternative methods of data collection. Anonymous surveys were the final choice as the means of interview because this method provided a viable means for collecting the data that overcomes the financial limitation associated with personal interviews.

The researcher understood that open-ended question would be difficult to standardize, impeding the organization and analysis of the data (Patton, 1990:24). To

overcome these difficulties, the researcher used Patton's concept of a standardized open-ended approach where the questions are predetermined but are worded to enhance the open-ended format of the survey (Patton, 1990: 289). This method sacrificed some of the flexibility in responses but was used to facilitate the organization of the data collected (Patton, 1990:289).

Use of Yin's concept of pattern matching will enable the researcher to identify common issues and isolated site specific issues that do not impact the overall analysis (Yin, 1994:25). In conjunction with Yin's concept of pattern matching, Patton's process of Phenomenological Analysis was used (Patton, 1990: 36). This process is conducted in the following five steps:

1. Collect data in a way that eliminates bias and personal involvement.
2. Identify data in its pure form by blocking out the world and any presuppositions of the data.
3. Horizontally organize the data. This entailed grouping responses to similar questions from different respondents and assigning equal weights to the responses so they can be clustered into blocks of coherent information. Horizontally organizing the data facilitates the fourth step by first grouping the data and identifying overlapping and repetitive information.
4. Eliminate repetitive, overlapping, and irrelevant data. This was critical when dealing with open-ended questions that offered the participants opportunities to inject unrelated information.

5. Finally, the data were Structurally Synthesized. This includes pattern recognition that enables the researcher to identify trends, highlight unforeseen issues, and establish an in-depth understanding of issues.

Validation

The use of electronic data collection using the Internet enabled the researcher to reach the entire affected population, eliminating the need for a sample population. A well-defined and easily accessed population gave the researcher confidence in the quality of the responses. The use of anonymity on the survey increased the frankness of the responses and enhanced the overall quality of the data. Initial validation of the data collection tools was accomplished early in the methodology development.

The Wright State Institutional Review Board (WSIRB) reviewed the survey and the research protocol. They approved the survey on 14 August 2003. To ensure there would be no harm resulting from a human study, the AFRL Chief of Aerospace Medicine reviewed to data collection instrument and approved it on 27 August 2003.

Additional validation of the data collection tools came when the electronic survey was reviewed and approved by the Air Force Personnel Center Chief of Survey Branch, on 12 Aug 2003. Validation of the data collection tools by two independent research boards gave the researcher confidence in the quality of the research method and data collection tools. A copy of the survey is in Appendix A and a copy of the protocol is in Appendix B.

Final validation of the data collection tool was achieved through a pilot study. Prior to execution of the electronic survey, the researcher administered the survey to designated natural resources managers. During the pilot study the participants were

given detailed information of the issues and were asked to take the survey. Upon completion of the survey they were asked to evaluate the quality of the questions. They were asked to define what data they thought the researcher was seeking. In addition, the participants of the pilot study were asked to provide recommendations to increase the overall effectiveness of the survey instrument. Upon completion of the pilot study, recommendations were considered and incorporated into the final survey.

Summary

This chapter discussed the research design, population, and the data collection and analysis process. A combination of quantitative and qualitative methods was used to capture both succinct and open-ended data. This combination of methods enabled the researcher to use quantitative methods to establish and analyze trends and qualitative methods to gain an in-depth understanding of significant issues related to the proposed policy.

The foundation of the data analysis was performed using Patton's idea of Phenomenological Analysis as a means to interpret the qualitative data collected. This was used to address the research question identified in chapter I. The next chapter, Chapter IV, presents the detailed analysis of the data.

Chapter IV - Results and Analysis

Chapter Overview

This chapter discusses the collection, organization, and analysis of data used to evaluate the projected impacts of the new law, Chapter 101A, "Readiness and Range Preservation of the National Defense Authorization Act of Fiscal Year 2004." The law clearly states that DOD exemptions to critical habit designation are only possible if those lands are managed with an Integrated Natural Resources Management Plan, as prepared under Section 101 of the Sikes Act, and that there are adequate resources available to support the plan. (H.R. 1588, 2003). The projected impact of the new law was investigated and the status of the USAF's natural resources managers' ability to achieve the two required conditions was identified. This chapter discusses the sample population, data organization, and the analysis process.

Population

The target population for this research consisted of all the natural resources managers within ACC and the ANG. These two groups represent the majority of natural resources managers within the USAF that manage both natural resources and training ranges. However, it is important to highlight that the population did not include two key ranges that are not managed by ACC and the ANG. This was a conscious choice because collecting information from within a command with just a single natural resources manager would eliminate data anonymity. This would conflict with the data collection protocol used, specifically protecting the anonymity of participants.

There were 17 total potential participants in the target population. Even though this number was small, a 65 percent response rate was achieved. However, two of the responses were considered invalid because the information collected was recorded as "skipped" answers throughout the entire survey. These two surveys were identified as outliers and eliminated from the analysis process. After elimination of the outliers a 53 percent response rate was achieved.

As previously identified in Chapter 3, the target population of experts in the field of natural resources management was both easily identified and accessed. A high response rate, as well as high quality responses, was expected. Unfortunately, responses to open-ended questions were limited in number and depth, which limited the overall quality of the data. The comments enabled identification of particular issues, but did not give enough information to understand the issue completely. This required additional information from sources outside the population covered by the electronic survey.

Overview of Data Collection Process

The first step in Patton's five-step process of Phenomenological Analysis was to collect data in a way that eliminates the researcher's bias and personal involvement, such as the use of an electronic survey (Patton, 1990: 36). This survey consisted of a total of 33 questions organized in five sections, based on Babbie's methods, described in Survey Research Methods (1990). The construction and organization of the survey made the survey easy for the participants to understand and execute. Additionally, the electronic, Internet-based approach minimized the impact on participants. The use of computers in research has made access to information substantially easier (Post & Anderson, 2003).

Using an Internet-based approach streamlined the process for participants and reduced the total estimated time to take the survey (Post & Anderson, 2003). Ultimately, the demand on participants was between 20-30 minutes and limited the effort to computer use only. This saved both time and expense in collecting the data. Furthermore, the electronic format consolidated the data almost instantaneously and eliminated the requirement for participants to return the survey via normal mail. The survey was constructed in a way that allows the participants to remain anonymous. The entire execution of the survey was accomplished electronically and ensured the first step of the Phenomenological Analysis process remained true to the method.

The second step of the Phenomenological Analysis process was to identify data in its pure form by blocking out the world and any presuppositions of the data. Again, the use of electronic surveys was the key to blocking outside influences in the data collection process. The data collection instrument used some succinct questions that were purposefully focused on collecting important background information. The information gathered from the background questions was combined with known information that was obtained from the ACC and ANG natural resources managers. The combination of the two data sources enabled the researcher to match information and understand a more complete picture of the situation surrounding natural resources management on training ranges.

On 14 of the 33 questions asked, participants were given the option to respond with an open-ended response format. This was intended to learn the opinions on issues without predetermining the outcome through limited response options. Unfortunately, there were few responses to open ended questions by the participants. This was the first

hint that most natural resources managers in the field weren't aware of the new law and the potential changes it would have on the management of critical species.

Step three in the Phenomenological Analysis process was to horizontally organize the data. The first part of the process was to break the information down into two sections, each related specifically to the required conditions needed to implement the law. Section I provided the basic background, and evaluated management's development and execution of an installation's INRMP based on the intent of the ESA to conserve threatened and endangered species. Section II focused on the second condition, to ensure adequate resources are dedicated to accomplishing the management activities identified in the INRMP. Once the data were organized horizontally each survey question within the major section was then matched with one of the five research investigative questions identified in Chapter 1. This created an opportunity to use cross case analysis as a means of organizing the data (Patton, 1990). Questions 16, 17, and 18 of the survey did not match against a specific research question but provided an opportunity for the participants to add background information related to natural resources management. Step three, organizing the survey questions into two sections and cross-referencing them to the investigative questions, is summarized in Table 1 below.

	Section I	Section II
Investigative Question 1: Are natural resources managers aware of the new law and the impact it has?	**1,2,3,8, 10, 15,19,20,21, 22**	**6**
Investigative Question 2: Do natural resources managers understand changes and can they forecast trends?	**8,10, 15,21,22**	
Investigative Question 3: What is the status of natural resources funding?	**13**	**4,14,23,30,31,32,33,**
Investigative Question 4: What is the status of natural resources manpower?	**13**	**5,6,23,24,25,26,27,28,29**
Investigative Question 5: Will the new law change the protection afforded to critical species?	**7,8,9,10,11,12, 19,20,21,22**	
Background support Info	**16,17,18**	

Table 1 – Cross-referenced Data Organization Table

Step four of the Phenomenological Analysis process required clustering the data and eliminating overlapping and irrelevant information, enabling establishment of important themes and patterns. This helped to identify specific issues for focus in step five, structural synthesis, the extrapolation of meaningful information from raw data.

The analysis of the data was conducted by section and explored each investigative question that related to that particular section. Specific issues were identified, discussed and related to the initial research question. Throughout the process, the Phenomenological Analysis process was used to guide the data evaluation.

Section I – Background & Condition 1

Investigative Question One: Are Natural Resources Managers aware of the new law and the impact it has on their obligations and flexibility to manage natural resources under their control?

It became obvious that natural resources managers were not aware of the new law and the impacts it could have on their programs. Question #1 of the electronic survey was designed to identify how well the USAF has informed its natural resources managers about changes to critical habitat designations that will result from the new law. Seven of the nine responses on the survey indicated that the participants were not officially notified of the new law. The remaining two participants indicated that they were officially notified but the information distributed within the DOD was not useful in determining the impact the new law would have on the management of natural resources.

Investigative Question Two: Do Natural resources Managers understand the changes and forecast trends in the requirements to manage natural resources under the new law?

Question #8 of the survey focused on expected changes to management style that incorporated the exemption to critical habitat designation. Seven of the participants were not aware of the law and therefore were unable to determine how the law would impact their management style. The remaining two participants agreed that changes to the law would not change their management techniques. When asked to comment on this subject, one participant highlighted a concern that, “leadership will ignore any law regarding habitat and will interpret the exemption way too liberally.”

Based on observations from the data, natural resources mangers appear to expect no change in their management of their programs. Without sufficient knowledge of the new law, natural resources managers are unable to anticipate changes. However, the specific comment from one participant, that leadership will interpret the law too liberally, provided significant insight into a specific issue. USAF leadership has done an incomplete job of educating natural resources managers on the purpose and implementation of exemptions to critical habitat designations.

The purpose of the law is not to eliminate critical habitat designations and provide less habitat protection; the intent of the law is to eliminate administrative burdens that come from critical habitat designations. The justification is that the protection of the species is already incorporated into the installations INRMP.

Little change was expected for the management of critical species because proper management should already be taken place under the INRMP. The unexpected result from this question was the interpretation that the DOD is able to manipulate the new law for its own benefit. Misinterpretation of the DOD's requirement for exemptions to critical habitat designations clearly highlights an education problem. The people expected to implement polices do not understand why. This problem could translate into DOD legal battles with environmental groups. We need to prepare front line natural resources managers with full understanding of the law and the military's intent, so that they can educate their local public and prevent potential conflicts resulting from misunderstandings of the DOD intent.

Investigative Question Five: Will the new law change the protection afforded to threatened and endangered species in a positive or negative way?

The purpose of this investigative question was to determine how well USAF resources will be able to ensure that management activities continue meet the intent of the ESA to conserve the threatened and endangered species identified on the lands managed under the INRMP. Next, conflicts between training access and natural resources management were examined. Finally, this question was used to guide the exploration of community education and communication programs in order to find conflicts between military training and natural resources protection.

The survey data clearly support the idea that USAF installations are doing a good job meeting current regulations to protect threatened and endangered species under an INRMP. Eight of the nine participants indicated they have an INRMP and each feel that it meets the intent of the ESA and adequately protects threatened and endangered species. This would make sense since every plan has to be coordinated with the USFWS. It is important to note that exemptions to critical habitat designation do not eliminate the requirements for active conservation of critical species. Even without critical habitat designations, USAF installations are still required to coordinate all natural resources management activities with the USFWS as part of the INRMP (USC, 1997b).

There was no evidence of a conflict between military training and natural resources protection on USAF training ranges. Additionally, open-ended questions were used to search for a perception of conflict, but not a single response suggests there is a problem, or, even a perception of a problem, between training access and natural resources management. However, it is important to note only training ranges within the

USAF were examined and only natural resources managers were polled. This finding points to the need for further exploration with range managers and other DOD services before any real conclusions can be made.

The final part of the analysis of question five looked at education and communication programs between the USAF installations and the local public. Two of the nine responses indicated they had programs and the rest of the participants indicated they did not. The participants with programs indicated that the existing programs are primarily focused internally at training base personnel, not at educating the local public on base environmental programs. This highlights the need for increased education or outreach programs with the local public. The USAF takes an active role in natural resources protection and may benefit greatly by informing the local public of their diligence. Increased education and communication programs would show the local public and special interest groups that the USAF is actively protecting natural resources and effectively improving the protection afforded to critical species.

The investigative questions in Section I examined the implementation of the National Defense Authorization Act for Fiscal Year 2004. Section I provided the basic background, and evaluated management's development and execution of an installation's INRMP based on the intent of the ESA to conserve threatened and endangered species. The analysis clearly showed that all installations have an INRMP and that it meets the intent of Sikes Act and Endangered Species Act, to conserve threatened and endangered species. Even with a strong INRMP program the analysis indicates that the USAF needs to expand education opportunities for USAF natural resources managers. In cases where

the participants were made aware of the law, the response is clear that the information provided was "not useful."

Section II – Condition 2

Investigative Question Three: Is Natural resources management funding increasing, decreasing, or remaining the same and will it meet the requirements of the new law?

This investigative question is to establish whether or not installations have the financial resources to implement exemptions of critical habitat designations. This investigative question explores the financial half of the second condition required by the new law. It was impossible to determine if funding was increasing, decreasing or remaining the same because the survey results showed no trends in funding. To determine if the financial resources are available and capable to meet the demands of an installation's INRMP, the Air Force Conservation Programming and Budgeting Guidance (AFCPBG) was examined (AFCPBG, 2000).

Even though specific trends could not be established from the survey results, some basic financial conclusions could be made. For bases with training ranges, contractors wrote the majority of INRMP's. According to the data, the approximate cost of INRMP's was $70,000 - $ 75,000. The results of an open-ended question indicated that one installation was able to secure funding for their INRMP through a third party grant.

All but two participants in the survey agreed that funding was not enough, but few responses were supported with comments that showed real financial shortfalls in their programs. Unfunded manpower positions were highlighted as a financial concern. Additionally, one response noted that equipment shortfalls were a concern. This seemed

likely, but the participant did not provide enough information to determine how the lack of equipment impacted the development and execution of the management requirements of the INRMP. The ability to manage controlled burns, because of a lack of financial resources, was the only response that tied money directly to the implementation of management processes that were highlighted in that installation INRMP.

Additional funding priority information was obtained from the United States Air Force Natural Resources Funding Guidance (AFCPBG, 2000). The guidance clearly indicates that priority ranking is the determinate for funding natural resources projects at the base level (AFCPBG, 2000). In order to prioritize funding requirements, each base level natural resources manager needs to explain the risks and the impacts associated with the requirement (AFCPBG, 2000). The guidance indicates that base level natural resources managers are required to give a short, explanatory title and indicate in the narrative a specific need, timing, and legal driver associated with the funding requirement (AFCPBG, 2000). Based on this information, a roll up of command wide funding data should be available to establish trends in the natural resources management arena. Unfortunately, this information was not releasable and diminished the ability to make valid conclusions about funding trends.

The USAF Natural Resources Funding Guide shows that funding projects based on legal requirements are classified as Level 0 priority on a scale of 0-3, with 0 being the most critical (a must fund priority) and 3 being least critical(AFCPBG, 2000). All Level 0 priorities are considered must pay obligations and will be funded ahead of other requirements (AFCPBG, 2000). According to the guidance any Level 0 and Level 1 projects will be planned for, budgeted, and executed (AFCPBG, 2000). By definition, the

funding of an INRMP and critical species management programs identified in the INRMP are considered to be a Level 0 or 1 priority. This indicates that funding INRMPs will not have a significant impact on implementation of the new law. Furthermore, all conservation projects identified in the INRMP that are driven by law and are cyclical in natural are classified as Level 0 projects. Projects that are driven by law but are not cyclical in natural are classified as Level 1 and receive priority funding as well. Based on an analysis of the funding guidance it appears that funding issues will meet the requirements of the new law.

The funding guidance also indicates several ways for installations to fund Level 2 and Level 3 projects by using natural resources generated funds (e.g. hunting and fishing permit fees, agricultural out lease and commercial forestry receipts) and external grants as an additional source of funding (AFCPBG, 2000). The majority of bases indicated that they partnered with outside organizations in accomplishing their INRMP. However, only two of nine responses indicated that outside organizations provided external funding to aid in the implementation of their INRMP. All the installations viewed their relationship with the USFWS as a partnership. Although this highlights a healthy working relationship between the two government agencies, only two of the nine responses had partnered with outside organizations beyond the USFWS. It is important to note that the relationship between the USFWS and the USAF is required and well defined in the Sikes Act Improvement Act (USC, 1997b: Sec 2904). None of the responses indicated that the USFWS provides financial support in the INRMP development and implementation process beyond the staff time required for INRMP review and coordination.

From a financial perspective, installations are in good shape to implement the new law. The key issues identified under this investigative question include the need for the installation natural resources managers to have some level of funding oversight for their installations that ties funding directly to their INRMP. There is a need for natural resources managers to better understand funding procedures and policies in order to tie conservation projects directly to their INRMP. Information found in the AFCPBG is clear and easy to understand and indicates that projects identified in the INRMP as legal requirements will receive Level 0 or Level 1 prioritization (AFCPBG, 2000). Using the INRMP as a prime source for conservation project prioritization will enable managers to advocate for necessary funds when needed. Educating resources managers on how to maximize funding will require a clear understanding of the AFCPBG. The guide indicates that units can establish other partnerships, consistent with the INRMP that will support funding environmental programs on their installation in the form of grants, volunteer manpower, donations, and self generated funds from natural resources programs.

Investigative Question Four: Is natural resources management manpower increasing, decreasing, or remaining the same, and will IT meet the requirements of the new law?

Two different types of information were sought with this question. The first was to understand the manpower trends within natural resources management. The second was to identify training and education issues to understand how well current manpower can handle changes in policy. The data did not show any trends except that manpower is

static. However, the need for better training and education of our existing manpower resources is clear.

Installations reported approximately one natural resources manager per range; however, survey comments suggest that several installations had additional manpower support in the form of wildlife or biologist technicians. This identified a fault in the data collection. The researcher misunderstood the terminology and expected the participants to respond by identifying all the manpower that worked with natural resources as natural resources managers. Clearly, within the community there is a distinction between natural resources mangers and technicians. Even though natural resources manpower trends are static, the manpower trend for technicians was reported as declining. Further data collection would be needed to confirm this conclusion.

The data did confirm that approximately half the installations had dedicated manpower, in the form of technicians. The technicians specifically managed a threatened or endangered species. A focused synthesized approach to the information initially led to the conclusion that a reduction in administrative requirements would result from the exemption of critical habitat designation, reducing the overall manpower requirements.

The conclusion is not supported by the survey. The number of technicians at each installation is small, typically only one specialist who handles several species. The presence of a threatened or endangered species drives the need for a dedicated professional to manage the species under the INRMP. Elimination of critical habitat designations reduces the administrative burden on the technician, but does not reduce the need to have a dedicated professional to manage other requirements identified in the INRMP to conserve the specific species.

Partnering with outside organizations, such as the USFWS, is a possible resource that can be used to manage threatened or endangered species. However, this solution comes with other concerns. For instance, responsibility for the resource remains with the installation owners. Additionally, outside organizations may not be willing to balance access to ranges with species conservation as diligently as USAF employees. Other resources within the USAF remain possible solutions to needed manpower requirements. Both the Air Force Civil Engineer and Services Agency (AFCESA) and the Air Force Center for Environmental Excellence (AFCEE) provide significant resources for the development and management of INRMP's. These resources range from contracting support to technical review and management. An expansion of their role might include the centralized management of unique species that thrive at several locations. Retaining a centralized expert on a given species would provide installation resource managers access to technical expertise without having to employee full time technicians locally. Through partnering with the USFWS, it is possible that technical resources would be shared between different government agencies.

In addition to partnering, outsourcing initiatives are another alternative to meeting manpower requirements. Natural resources management on training ranges has not been a traditional candidate for outsourcing but other outsourcing initiatives clearly prove that outsourcing natural resources management is a viable solution to manpower shortfalls.

Section II focused on the second condition, to ensure adequate resources are dedicated to accomplishing the management activities identified in the INRMP. Money and manpower were the primary resources analyzed in the research because they represent the resources needed to ensure the successful development and execution of

management practices identified in the INRMP. The prioritization methods for funding indicate that adequate funds will be available to develop and execute the INRMP. Manpower was identified as a sensitive issue but the USAF's decision to use both contracts and outsourcing to supplement manning shortfalls will ensure there are adequate resources. Ultimately, it is clear that the USAF has dedicated sufficient resources in the money and manpower areas to develop and execute the management of an INRMP.

Summary

This chapter discussed the collection, organization, and analysis of data used to evaluate the projected impacts of Chapter 101A, Readiness and Range Preservation of the National Defense Authorization Act of Fiscal Year 2004 (H.R.1588, 2003). The law clearly states that DOD exemptions to critical habit designation are only possible if those lands are managed with an Integrated Natural Resources Management Plan, as prepared under Section 101 of the Sikes Act, and that there are adequate resources available to support the plan. (H.R.1588, 2003). The USAF has met both conditions necessary to exempt their training ranges from designation as critical habitat for threatened and endangered species. The management activities are meeting the intent of the ESA and conserve the threatened and endangered species identified on the lands managed under the INRMP. Furthermore, the USAF has dedicated adequate resources to accomplishing the management activities identified in the INRMP. Conclusions from the analysis are presented in Chapter 5 along with recommendations for future research on critical habitat designations within the DOD.

Chapter V

Introduction

Chapter V presents general conclusions based on the findings presented in Chapter IV. Furthermore, Chapter V provides recommendations for improvements to the methodology and analysis as well as suggested policies for the successful implementation of the new law. This chapter will clearly answer the research question by defining the status of USAF's natural resources manager's ability to achieve the two conditions identified in Chapter 101A of the National Defense Authorization Act for Fiscal Year 2004 that will enable them to implement critical habitat exemptions on USAF training ranges. This chapter concludes with future research recommendations and some final thoughts from the researcher about natural resources policy analysis.

Research Conclusions

General conclusions:

The general conclusion is that the USAF will have no significant problems in meeting the criteria necessary for implementing critical habitat exclusions on training ranges. Each installation is meeting the intention of the ESA with the development and execution of their INRMPs. However, public education and awareness about USAF environmental programs on training ranges could be significantly improved. This would ensure a positive relationship with the local public and special interest groups. Establishing and maintaining strong relations with the local public and special interest groups will reduce potential encroachment issues. Also, better partnering with the local public and special interest groups could also open up valuable manpower and financial

resources to the USAF. Matching installation natural resources management with environmental volunteers can bring both expertise and manpower that is not available for unfunded or low priority natural resources projects and programs.

None of the participants in the survey indicated there is a conflict between natural resources management and training range access. The DOD's statement in the GAO report, that readiness is negatively impacted because of environmental encroachment issue due to critical habitat designations, seems not to apply to USAF training ranges (2002:6). All of the natural resources managers involved with the research indicated there was no conflict between natural resources management and training range access. They indicated a positive relationship with USFWS and base operational personnel.

Many players involved with training range access were not contacted and may not share the same view. Further exploration of the encroachment issue affecting readiness needs to be conducted before definitive conclusions can be made. However, the initial conclusion is that conflict between range access and natural resources management is not a significant issue for the USAF. Although the GAO specifically reports that the DOD has environmental encroachment issues, the issues lie in the other DOD services and not the Air Force.

Conclusions about the methodology:

The degree of participation within the target population was not as good as expected. All of the participants in the target population were specifically identified as professionals in the field of natural resources management. They were chosen because their qualifications included both a higher education with practical experience in the natural resources management field. Although the response rate was good, there was a

lack of in-depth insight into the issues associated with implementing the law. A greater level of in-depth responses may have led to greater insight into the issues surrounding the implementation of the new law along with other important issues associated with the development and execution of INRMPs.

Improvements to this research method may include sending an informative report to the participants prior to conducting the survey. This would provide the participants with background information that they can use to form more in-depth responses. This report would need to include specific information about the new law as well as money and manpower issues. Another option might be briefing the new law at a command natural resources conference. Manpower and financial experts could be linked with the natural resources managers and brief real money and manpower numbers to all the participants. Then the researcher could seek their insight and opinions about the reality of the numbers being used by command in a follow-up survey. Additionally, the development of contacts, such as emails and phone calls, with the participants may improve both the response rate and quality of the responses.

Expanding the survey to a greater target population might improve the effectiveness of the research. This may entail customizing the survey for participants. For example, the financial questions may be sent to the organization's financial manager and not the natural resources managers. Tailored surveys could be sent to manpower, operations, and other key players. Compiling information from the various resources could develop a more complete picture of the issues.

The use of electronic surveys, as an information-gathering tool, worked very well for this project. It is clear that the use of the Internet to collect the data was invaluable to

the research. The Internet made it possible to canvas an entire population, keep the cost and time of the data collection down, and organize the responses.

In most survey-based methods, low response rates are a problem that drives the researcher to use representative sample populations. In this case, computer access in conjunction with a small target population enabled the researcher to contact each member of the population and achieve a 65 percent response rate. Access to the entire population eliminated the need for a sample population, which strengthened the expected inferences derived from the data.

Another significant advantage to using Internet-based surveys was the cost savings. The first choice for collecting data was to interview experts in the field. Unfortunately, interviews would have been very costly since the target population was spread throughout the entire United States. Another alternative was to use mailed surveys. While significantly cheaper, both printing and mailing cost were associated with it. Along with the cost of using paper surveys, the time associated with printing, mailing, taking the surveys, mailing the surveys back, and then consolidating the information all would have increased both the cost and time of the research. Ultimately, the use of electronic surveys eliminated the majority of the time constraints, which resulted in the participant's ability to complete the surveys in 20-30 minutes. The convenience associated with the electronic format had a positive impact on participation from the target population.

Finally, as soon as the survey was finished, the responses were instantly collected and organized into a spreadsheet, which made the information ready for analysis. Each

response was automatically cataloged into the same format on an electronic spreadsheet. The organized raw data were then analyzed using the Phenomenological process.

Review of Phenomenological process as an analysis tool

A qualitative approach to this research worked well. Policy analysis of a new law required an approach to the research question that incorporated human factors. Patton's phenomenological processes worked well for this type of research because it enabled the researcher to exercise focused synthesis and establish conclusions by evaluating the judgments of experts in the field (Patton, 1990:11). According to Patton, understanding the issues goes beyond descriptions of the data. The phenomenological process requires the researcher to: 1) confirm what is known to be true 2) eliminate misconceptions, and 3) identify issues that were not known or were undeveloped (Patton, 1990:26). This process requires the researcher to attach significance to the issues and then offer explanations and conclusions based on an understanding of the whole picture (Patton, 24-26).

The simple answer to the research question is yes; the USAF is ready and capable of implementing the new law. However, after evaluating the issues surrounding the natural resources management field, it is clear that education for USAF personnel and increased public awareness of USAF programs are both real issues that could have a significant impact on the implementation of the law. Critical conclusions that go beyond answering the specific question and identifying the surrounding issues could only have been identified using a research method, like Patton's, because it goes beyond answering the specific research question and identifies significant issues associated with the policy.

Research question

The primary research question asked the status of a USAF's natural resources manager's ability to achieve the two conditions identified in the National Defense Authorization Act of Fiscal Year 2004 (HR 1588, 2003). To answer this question, five investigative questions were developed to address some aspect of the research question. Investigative Questions 1, 2, and 5 addressed the status of USAF natural resources managers' ability to meet the intent of the ESA by development and execution of an INRMP. Questions 3 and 4 were to determine if adequate resources are dedicated to accomplishing the activities identified in the INRMP.

Investigative Question 1 addressed the level of information available to natural resources managers regarding the new law. Despite the fact that very few natural resources managers where aware of the new law or the requirements associated with it, each installation had an INRMP in place that meet the intent of the ESA to conserve threatened and endangered species. Investigative Question 2 was to identify trends in the natural resources management field to evaluate how well equipped the USAF was to implement the law. Unfortunately, very few of the natural resources managers understood the impacts of the changes to policy and therefore were unable to predict future trends. The primary focus of Investigative Question 3 was to determine if the protection afforded to threatened and endangered species would meet the intent of the ESA to protect critical species. Each of the participants in the survey indicated that, regardless of the new law, the protection afforded to threatened and endangered species would not be impacted.

A review of the investigative question and the data, combined with information gathered from outside sources, determined that all USAF installations have an INRMP. Furthermore, each of these plans are developed and implemented with the coordination of the USFWS and the State Fish and game agency. Each plan is tailored to manage the specific natural resources on an installation. Clearly, the USAF has met the first condition required to implement the new law. All USAF installations with natural resources have an INRMP that meets the intent of the ESA, and conserve threatened and endangered species.

Investigative Questions 3 and 4 addressed the second condition, which is to ensure that adequate resources are dedicated to accomplishing the management activities identified in the INRMP. Question 3 addressed natural resources management funding and Question 4 addressed natural resources management manpower.

From a funding perspective the USAF has developed a sound priority system that ensures funds are available for all projects and programs identified in the INRMP and to meet legislative requirements. Priority 0 and 1 requirements, which represent both recurring and one time programs that directly link to a specific law, are considered must pay priorities and receive funds from the budget before any other programs are funded. Lower priority programs have funding challenges but these do not impact the application of management practices identified in the INRMP.

Although it is clear that budgeting for adequate resources is in good shape, the process could use improvement. Increased education on funding procedures would enable natural resources managers to exercise more funding options. For example,

natural resources managers could partner with outside organizations for grants to pay for un-funded requirements.

Manpower was identified as the other critical resource that would impact the execution of management practices identified in the INRMP. Because manpower was identified as a sensitive issue, it was difficult to find additional information about this resource. The survey participants indicated there were manning shortfalls in their career field. However, the data collected did not support this contention. Furthermore, the limited amount of additional information available about specific manpower numbers limited the ability to establish any upward or downward trends. Even without specific manpower numbers, the primary question (Are there adequate resources to support the INRMP?) could be answered. A review of the USAF's approach to manpower requirements shows that the USAF has adequate manpower resources available. Contract support and outsourcing, as supplements to manpower needs; ensure that adequate resources are available to execute the INRMP.

How well the training and education programs enabled natural resources managers to properly manage and document the impact of their particular species was unclear. However, a combination of the literature review and data analysis made it easy for the researcher to conclude that the USAF has little oversight to the actual impacts of critical species on their training ranges. Consistent between the survey participants and the GAO report is that natural resources managers have little information to support encroachment problems from critical species on training ranges (GAO, 2002:3). Training and education about critical habitat designation needs to be at the forefront of USAF

manpower resources. The USAF needs to focus on educating natural resources mangers about documenting the impacts of critical species on training ranges.

External manpower support, in the form of contracts and outsourcing, can solve significant manpower shortfalls. It can provide expertise that the USAF does not have. Better training and education for critical species managers would help current employees establish the actual impacts of critical species on training range access, but training can be supplemented by hiring the expertise externally.

Ultimately, it is clear that the USAF has dedicated sufficient resources in the money and manpower areas to develop and execute the management of an INRMP and can clearly meet the second condition of the National Defense Authorization Act for Fiscal Year 2004.

Future Research

This research provides a basic foundation to the fundamental problem identified by the GAO. However, this research was limited in scope to USAF natural resources managers only. Because many of the natural resources managers within the USAF don't manage training ranges, it is not recommended to expand this research to all USAF natural resources managers. The next logical step for this research would be to expand the research to the other services within the DOD that are balancing training range access with natural resources management. Expansion to other DOD services would provide greater insight into conflicts between readiness and encroachment problems derived from natural resources management. Because of the lack of documentation surrounding encroachment issues and regardless of the outcome to the research, the DOD would

clearly benefit from definitive conclusion regarding balance of critical species management and training range access.

The DOD would benefit from documentation that defines encroachment issues and clarifies the argument that encroachment is limiting our nation's readiness. Expansion of the research to address the other seven encroachment issues affecting training range access is also another logical step. Changing the focus would diverge from an environmental policy analysis but the research methodology would work equally well to address these other issues.

Final Thoughts

Meeting the requirements of the law is only part of the process. The acceptance of the policy and procedures by the natural resources management field and all the other players involved goes beyond the question of capability to implement. Leading all of the services within the DOD, the USAF has done a good job of balancing training range access and natural resources management. Critical species flourish on training ranges because of the proper balance between natural resources management and training operations. The National Defense Authorization Act for Fiscal Year 2004 enables DOD organizations exemptions to critical species habitat designations. Because USAF natural resources managers have INRMPs and the resources to implement them, they have greater flexibility in administering their programs without reducing the protection afforded to critical species.

The DOD obtained relief on the issue of balancing range access and critical species conservation in the National Defense Authorization Act for Fiscal Year 2004. Harassment of an individual species or population is subject to interpretation and raises

the issue of occupied verses unoccupied critical habitat. Unoccupied critical habitat is an area that is designated as critical habitat but currently has no threatened or endangered species existing on the area. Under current laws these areas are offered the same protection as areas with existing threatened or endangered species. Some may interpret the use of this land as harassment even though there is no critical species thriving on or using the habitat. Using an INRMP approach allows DOD natural resources managers to manage critical species and habitat with existing populations and at the same time access lands that don't have critical species existing on them. This enables the DOD to balance critical species conservation with military readiness.

The DOD's argument is that an INRMP conserves threatened and endangered species and meets the intent of the ESA (House Resource Subcommittee on Fisheries Conservation, Wildlife and Oceans, 2003). USAF natural resources managers are obligated to be good stewards of the environment. Promoting programs that go beyond critical species management is another opportunity for natural resources managers to increase public awareness and access to many of our Nation's great natural resources. The USAF would reap great benefits by expanding existing partnerships with the public and special interest groups. Partnering would facilitate educating outside groups about the good things the USAF is doing to protect critical species and improve our Nation's natural resources.

APPENDIX A - Survey

Projected Impacts on Natural Resources Management

(Chapter 101A, Readiness and Range Preservation, of the National Defense Authorization Act for Fiscal Year 2004)

Purpose: The purpose of this survey is to obtain information to assess the status of the Air Force's ability to implement Chapter 101A, Readiness and Range Preservation, of the National Defense Authorization Act of Fiscal Year 2004. This Act exempts the designation of critical habitat on military installations if the military natural resources managers have successfully completed and implemented an Integrated Natural Resources Management Plan (INRMP).

Anonymity: We would greatly appreciate your participation. **ALL ANSWERS ARE STRICTLY ANONYMOUS**. Thus, you should not include your name anywhere on this questionnaire.

Contact information: If you have any questions or comments about the survey contact Captain Bill Sitzabee at the number, fax, mailing address, or e-mail address provided below.

Captain William E. Sitzabee, P.E.

AFIT/ENV BLDG 640

2950 P Street
Wright-Patterson AFB OH 45433-7765
Email: William.Sitzabee@afit.edu
Phone: DSN 785-3636, ext. 6553, commercial (937) 255-3636, ext. 6553
Fax: DSN 986-4699; commercial (937) 656-4699

INSTRUCTIONS

- Base your answers on your own thoughts & experiences
- Please print your answers clearly when asked to write in a response or when providing comments
- Make dark marks when asked to use specific response options (feel free to use an ink pen)
- Avoid stray marks and if you make corrections erase marks completely or clearly indicate the errant response if you use an ink pen

MARKING EXAMPLES

Right ● Wrong ⊗ ⊘ ⊙

<u>Section 1</u> - The National Defense Authorization Act of Fiscal Year 2004

1. Were you notified through official channels about projected changes to natural resources management resulting from Chapter 101A, Readiness and Range Preservation, of the proposed National Defense Authorization Act of Fiscal Year 2004?

○ Yes ○ No (If you answered No, please skip to Section 2)

2. If you were officially notified about current proposed changes to the law, were you made aware of new requirements that mandate that the Secretary of the Interior grant exemptions to critical habitat designation on military installations if certain conditions exist?
Those conditions include the existence of an INRMP and resources to implement it.

○ Yes ○ No ○ I was not officially notified.

Comments:

_____
_____
_____
_____

Please rate the usefulness of the information distributed within the DOD, which describes the extent of the impacts of the new law. (Chapter 101A, Readiness and Range Preservation, of the National Defense Authorization Act of Fiscal Year 2004).	⓪ Not Useful	① Useful	② Very Useful
3. Regarding the impacts expected on critical species management.	⓪	①	②
4. Regarding the impacts expected on your budget.	⓪	①	②
5. Regarding the impacts expected on your manpower.	⓪	①	②

6. Do you expect the new law (National Defense Authorization Act of Fiscal Year 2004) to increase, decrease, or keep your work level the same?

○ Increase
○ Decrease
○ Remain the Same

Comments:

_____
_____
_____
_____

7. Do you expect the new Law (National Defense Authorization Act of Fiscal Year 2004) to increase, decrease, or keep the protection afforded to threatened and endangered species the same?

○ Increase
○ Decrease
○ Remain the Same

Comments:

_____
_____
_____
_____

8. Will exemptions to the critical habitat designation on your installation change the way you manage Threatened and/or Endangered species?

○ Yes ○ No

Comments:

_____
_____
_____
_____

9. What concerns do you have regarding DOD exemptions to the critical habitat designation on military installations?

Comments:

_____
_____
_____
_____
_____
_____
_____
_____

Section 2 - Integrated Natural resources Management Plan

10. Does your installation have an Integrated Natural Resources Management Plan?

○ Yes ○ No (If No, Please skip to Section 3)

11. Do you feel that your installation's Integrated Natural Resources Management Plan adequately protects Threatened and/or Endangered species?

○ Yes ○ No

Comments:

_____
_____
_____
_____

12. Do you feel that your installation's Integrated Natural Resources Management Plan meets the intent of the Endangered Species Act to actively conserve Threatened and/or Endangered species?

○ Yes ○ No

Comments:

_____
_____
_____
_____

13. Was your installation's Integrated Natural resources Management Plan written by a contractor?

○ Yes ○ No (If No, skip to Section 3)

14. What was the cost of the contract to write your installations Integrated Natural resources Management Plan?

Comments:

_____
_____
_____
_____

Section 3 - Threatened and/or Endangered Species

15. Does your installation manage Threatened and/or Endangered Species as designated under the Endangered Species Act?

○ Yes ○ No (If No, Skip to Section 4)

16. How many Threatened and/or Endangered species does your installation manage?

Plant #: _____ Wildlife #: _____

17. What kind of Threatened and/or Endangered species do you manage?

○ Plant ○ Wildlife ○ Both

18. Are there areas on your installation designated as Critical Habitat under the Endangered Species Act?

○ Yes ○ No

18. If so, are these areas adjacent to or connected in some way to military training, testing, or operational areas? (Reference previous question)

○ Yes ○ No

19. Do you perceive a conflict between military access to training areas and critical species management? If so, please give a short explanation?

○ Yes ○ No

Comments:

_____
_____
_____
_____

20. Does your organization currently have public education programs that inform about the management of Threatened and/or Endangered species on your installation?

○ Yes ○ No

21. Please comment on the effectiveness of public education programs in maintaining good relations with the local public and special interest groups?

Comments:

_____
_____
_____
_____

22. Does your organization partner with outside organizations in managing Threatened and/or Endangered species?

○ Yes ○ No

If so, please list the organizations:

Comments:

_____
_____
_____
_____

Section 4 - Manpower

23. How many Natural resources Managers (NRMs) currently work on your installation?

Number of NRM #: _____

24. Are there currently unfunded natural resources management manpower positions in your organization?

○ Yes ○ No

If so, please list how many:

Number #: _____

24. Does the management of Threatened and/or Endangered species require dedicated manpower on your installation?

Comments:

_____
_____
_____
_____

26. Do you receive manpower support from outside organizations to aid in the management of Threatened and/or Endangered species?
Some examples could be mutual support agreements or volunteer work.

○ Yes ○ No

27. Does your organization have biological or wildlife specialists (experts) who specifically manage Threatened and/or Endangered species?

○ Yes ○ No

28. If your organization employees biological or wildlife specialists (experts), do they have adequate training and experience to manage the specific species on your installation?

○ Yes ○ No

Comments:

_____
_____

Section 5 - Budget

29. Do you receive funding support from outside organizations to aid in the management of Threatened and/or Endangered species?

○ Yes ○ No

30. Do you receive adequate funding for natural resources management?

○ Yes ○ No

31. What are your top unfunded natural resources management issues?

Comments:

_____
_____
_____
_____

32. What is your approximate yearly budget for natural resources management?

Budget: ($) _____

APPENDIX B - Protocol

Protocol Outline
For
POLICY ANALYSIS OF READINESS AND RANGE PRESERVATION, IMPACTS OF THE NATIONAL DEFENSE AUTHORIZATION ACT OF FISCAL YEAR 2004

1. Title: Policy Analysis of Section 101A, Readiness and Range Preservation, of the National Defense Authorization Act of Fiscal Year 2004

2. Principal Investigator: Dr. Charles A. Bleckmann, AFIT/ENV; 255-3636, ext. 4721; charles.bleckmann@afit.edu

3. Associate Investigator: Capt William E. Sitzabee, AFIT/ENV; 255-3636, ext.6553; william.sitzabee@afit.edu

4. Medical Monitor: Not Applicable.

5. Contractor and /or Facility: Not Applicable.

6. Objective: To analyze and project the impacts of a new law, The National Defense Authorization Act for Fiscal Year 2004, with specific reference to Section 101A, exemptions of critical habitat designation and training range access.

7. Background: The National Defense Authorization Act of Fiscal Year 2004 specifically limits the Secretary of the Interior from designating lands owned by the Department of Defense as critical habitat if those lands are managed with an Integrated Natural Resources Management Plan (INRMP) prepared under section 101 of the Sikes Act. However, the law specifically states that two conditions must exist for the Department of Defense to be eligible for exemptions of the critical habitat designation. The status of the USAF's natural resources managers' ability to achieve the two conditions identified in the new law is unknown and needs to be explored in order to fully understand the impact.

These two conditions are as follows:

a. The management activities must meet the intent of the Endangered Species Act (ESA) and conserve threatened and endangered species identified on the lands managed under the INRMP.

b. The plan must ensure there are adequate resources dedicated to accomplishing the management activities identified in the INRMP.

8. Approach:

a. Question to be answered: What are the impacts on range access and natural resources managers by implementing a new policy that exempts the Department of Defense from designating areas on military installations as critical habitat for threatened and endangered species?

b. Scientific rationale: A qualitative study will provide the practitioner with in-depth knowledge and insight to issues surrounding the implementation of new policies associated with the National Defense Authorization Act of Fiscal Year 2004. This will be accomplished by asking policy related questions in the form on an anonymous survey.

c. Air Force Relevance: Insight into projected implementation issues will enable Air Force leadership to make adjustments to policy resulting from a better understanding of the knowledge and issues, with regards to range access, associated with the implementation of the National Defense Authorization Act for Fiscal Year 204

9. Impact: There are no immediate benefits to the participants in the study. However, the research gives the practitioners an opportunity to express their viewpoints prior to implementing new policy. This will provide decision makers insight necessary to implement the new law and eliminate major issues that could come from poor policy decisions. Incorporating the participant's ideas in the overall implementation of new policies will reduce and possible eliminate potential problems and enable buy-in from the practitioners in the field.

10. Experimental Plan:

a. Equipment and Facilities: Not Applicable

b. Subjects: The general population affected by the new law included all natural resources managers who are responsible for the natural resources on military training ranges. However, access to all the services within the DOD is beyond the scope of this research. Therefore, the population of study will only include USAF natural resources managers operating natural resources management programs on military ranges within the boundaries of the United States.

c. Duration of the Study: Present through March 2004

d. Research Design: This research follows an in-depth review of selected issues and uses both closed and open ended questions that will capture in-depth and detailed insights

into the issue. Some statistical methods will be used to analyze the data and will provide succinct summaries of major trends (Patton, 1990:17). Patton suggests that qualitative studies are ideal for dynamic situation that involve human interactions (Patton, 1990:12). He states that qualitative methods enable the researcher to gather a great deal of detailed information about a much smaller number of people and cases (Patton, 1990:14). With the availability of greater detail of information, the right group of experts, evaluated using qualitative methods, can produce significant insight into the issues surrounding the implementation of a new policy.

e. Data collection will be conducted using an anonymous survey with both closed and open-ended questions. This will enable the researcher to understand and capture unique situational responses of experts in the field without predetermining those points of view and still maintain some standardization of the responses (Patton, 1990:289).

The population established for this research is spread throughout the continental United States and would be financially inhibitive to interview in person. Therefore, electronic surveys, using Internet access, are the final choice as the means of data collection.

The attached survey was constructed using proven research design from Earl Babbie's book, Survey Research Methods. The questions were constructed and ordered in a way that makes it easy for the participants to understand. Additionally, the survey was constructed with an approach that minimizes the time to take the survey. This is estimated to be approximately 20-30 minutes. The survey was constructed in a way that allows to participants to remain anonymous. Furthermore, the information gathered from the survey will be handled confidentially.

f. On-site monitoring: Not Applicable

11. Medical Risk Analysis: Not Applicable

12. References:

Babbie, Earl. Survey Research Methods (2nd Ed). Belmont California: Wadsworth Inc. 1990

Patton, Michael Quinn. Qualitative Evaluation and Research Methods. Newbury Park CA: Sage Publications, Inc. 1990

Dillman, Don A. Mail and Telephone Surveys, The Total Design Method. New York: John Wiley and Son, Inc., 1978

APPENDIX C – Protocol Approval

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESEARCH LABORATORY (AFMC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO

27 August 2003

MEMORANDUM FOR AFIT/ENV
ATTN: Charles A. Bleckmann
FROM: AFRL/HEH

SUBJECT: Approval for the Use of Volunteers in Research

1. Human experimentation as described in Protocol 03-78, "Policy Analysis of Section 101A, Readiness and Range Preservation, of the National Defense Authorization Act of Fiscal Year 2004", may begin.

2. In accordance with AFI 40-402, this protocol was reviewed and approved by the Wright Site Institutional Review Board (WSIRB) on 14 August 2003, the AFRL Chief of Aerospace Medicine on 27 August 2003

3. Please notify the undersigned of any changes in procedures prior to their implementation. A judgment will be made at that time whether or not a complete WSIRB review is necessary.

Signed 27 August 2003
HELEN JENNINGS
Human Use Administrator

APPENDIX D – Survey Cover Letter

MEMORANDUM FOR ACC Natural resources Managers

FROM: ACC/CEVP

SUBJECT: Electronic Survey on the Impact of Chapter 101A of the National Defense Authorization Act For Fiscal Year 2004

1. As a result of the DOD's efforts to consolidate environmental requirements, in May of 2003 both the United States House of Representatives and the United States Senate approved the National Defense Authorization Act (Act) for Fiscal Year 2004. In Chapter 101A of the Act is specific language that mandates the Secretary of the Interior exempt the DOD from portions of the Endangered Species Act (ESA) that require the designation of critical habitat. However, DOD exemptions can only be achieved if two specific conditions exist. The conditions require the development and management of an Integrated Natural Resources Management Plan (INRMP) that conserves listed threatened and endangered species. Additionally, the conditions require that dedicated resources are available and committed to ensure the successful management of practices identified in the INRMP.

2. Request that you complete the electronic survey-based research project in conjunction with the Air Force Institute of Technology (AFIT), Graduate School Department of Systems and Engineering Management. The information obtained through this research effort will help to measure the projected impacts resulting from the new law and be considered in future natural resources management policy development.

3. The URL linking you to an electronic survey is http://en.afit.edu/Surveys/Sitzabee. This survey will ask you a series of questions regarding your natural resources management program. The survey should take you approximately 20-30 minutes to complete. The survey collects the data anonymously and reports it to a database at the AFIT. In an effort to maintain the integrity of the data, please designate only one person in your program to take the survey and have them complete it only once. While it is optional to complete the survey, I would appreciate it if you would complete the survey by 29 Sep 03 and share your comments on the survey with me.

4. Be assured that your reply is anonymous. If you have any question regarding the survey or the research project, please contact me or Captain Bill Sitzabee, AFIT. His e-mail is william.sitzabee@afit.edu.

Rick Lemaire
Command Natural Resources Program Manager

APPENDIX E - Results of Data Collection

Demographics

Program Info:

All of the participants in the target population were base level natural resources managers that worked on a base with a training range. The target population included seventeen potential participants all from within Air Combat Command or the Air National Guard. Eleven of the participants responded to the survey with a total response rate of 65 percent. However, two responses were deemed invalid because those responses were incomplete. This resulted in evaluating nine of the eleven responses, which is 53 percent of the target population.

Survey Info:

The survey was distributed (Electronically) to the participants on 15 Sep 03 with an original suspense of 26 Sep 03. On 25 Sep 03 the AFIT computer servers went down and all data collected on 25 Sep 03 and 26 Sep 03 was lost. Because of the lost data and low response rate, the participants were notified that the suspense was extended for an additional 2 weeks until 10 Oct 03.

The first response was recorded on 16 Sep 03 and the last response was recorded on 7 Oct 03. The survey collection system remained in place for 1 week past the deadline but no responses were recorded after 7 Oct 03. The researcher believes that a significant loss of data was the result of the computer failure and that the responses of participants who had to take the survey twice were not very good.

Section 1 - The National Defense Authorization Act of Fiscal Year 2004

1. Were you notified through official channels about projected changes to natural resources management resulting form Section 101A, Readiness and Range Preservation, of the proposed National Defense Authorization Act of Fiscal Year 2004?

○ Yes ○ No (If you answered No, please skip to Section 2)

Only two of the nine responses reported answering Yes to Question 1 (Q1) the rest were skipped to Section II

Q1: 2 participants were notified
7 participants not notified

2. If you were officially notified about current proposed changes to the law, were you made aware of new requirements that mandate that the Secretary of the Interior grant exemptions to critical habitat designation on military installations if certain conditions exist?
Those conditions include the existence of an INRMP and resources to implement it.

○ Yes ○ No ○ I was not officially notified.

Q2: 2 participants answered Yes
7 participants skipped to Section II

Q2 Comments: No Comments recorded

Please rate the usefulness of the information distributed within the DOD, which describes the extent of the impacts of the new law. (Section 101A, Readiness and Range Preservation, of the National Defense Authorization Act of Fiscal Year 2004).	⓪ Not Useful	① Useful	② Very Useful
4. Regarding the impacts expected on critical species management.	⓪	①	②
4. Regarding the impacts expected on your budget.	⓪	①	②
6. Regarding the impacts expected on your manpower.	⓪	①	②

Q3: 2 Participants rated information about the impact on critical species as Not Useful
7 participants skipped to Section II

Q4: 2 Participants rated information about impact on their budget as Not Useful
7 participants skipped to Section II

Q5: 2 Participants rated information about the impact on their manpower as Not Useful
7 participants skipped to Section II

6. Do you expect the new law (National Defense Authorization Act of Fiscal Year 2004) to increase, decrease, or keep your work level the same?

○ Increase

○ Decrease

○ Remain the Same

Comments?

Q6: 2 Participants responded that their work level would remain the same
7 participants skipped to Section II

Q6 Comments: No Comments recorded

7. Do you expect the new Law (National Defense Authorization Act of Fiscal Year 2004) to increase, decrease, or keep the protection afforded to threatened and endangered species the same?

○ Increase

○ Decrease

○ Remain the Same

Comments?

Q7: 1 participant responded that protection would remain the same
1 participant responded that protection would decrease
7 participants skipped to Section II

Q7 Comments: No comments recorded

8. Will exemptions to the critical habitat designation on your installation change the way you manage Threatened and/or Endangered species?

○ Yes ○ No

Comments:

Q8: 2 participants responded that critical habitat exemptions will not change their management practices
7 participants skipped to Section II

Q8 Comments: No comments recorded

9. What concerns do you have regarding DOD exemptions to the critical habitat designation on military installations?

Comments?

Q9 Concerns: Only one concern was recorded from Section I – Leadership will ignore any law regarding habitat and will use interpret the exemptions way too liberally.

Section 2 - Integrated Natural resources Management Plan

10. Does your installation have an Integrated Natural Resources Management Plan?

○ Yes ○ No (If No, Please skip to Section 3)

Q10: 8 participants responded yes, they have an INRMP
1 participant responded no, they did not have an INRMP

11. Do you feel that your installation's Integrated Natural Resources Management Plan adequately protects Threaten and/or Endangered species?

○ Yes ○ No

Comments?

Q11: 8 participants responded that their INRMP adequately protects Threatened and Endangered species
1 skipped to Section III

Q11 Comments: No comments recorded

12. Do you feel that your installation's Integrated Natural Resources Management Plan meets the intent of the Endangered Species Act to actively conserve Threatened and/or Endangered species?

○ Yes ○ No

Comments:

Q12: 8 participants indicated their INRMP meets the intent of the ESA
1 skipped to Section III

Q12 Comments: No comments recorded

13. Was your installation's Integrated Natural resources Management Plan written by a contractor?

○ Yes ○ No (If No, skip to Section 3)

Q13: 6 participants indicated a contractor wrote their INRMP
2 participants indicated a contractor did not write their INRMP
1 skipped to Section III

14. What was the cost of the contract to write your installations Integrated Natural resources Management Plan?

Comments:

Q14: Approx $70K
Cost of contractor support was $70K
A grant provided the funding to the institute that wrote our INRMP
$75K (written by US Forest Service under an AF MOA)
$50K
3 participants skipped this question

Section 3 - Threatened and/or Endangered Species

15. Does your installation manage Threatened and/or Endangered Species as designated under the Endangered Species Act?

○ Yes ○ No (If No, Skip to Section 4)

Q15: 3 participants indicated yes they manage threatened or endangered species
6 participants skipped

16. How many Threaten and/or Endangered species does your installation manage?

Comments:

Q16: 1 participant indicated they manage 3 different species
2 participants indicated they manage 1 species
6 participants skipped

Q16 Comments: No comments recorded

17. What kind of Threatened and/or Endangered species do you manage?

○ Plant ○ Wildlife ○ Both

Q17: 3 participants indicated the type of critical species they manage is Wildlife

18. Are there areas on your installation designated as Critical Habitat under the Endangered Species Act?

○ Yes ○ No

Q18: 3 participants indicated there are no areas on their installation designated as critical habitat
6 participants skipped

18. If so, are these areas adjacent to or connected in some way to military training, testing, or operational areas? (Reference previous question)

○ Yes ○ No

Q18a: N/A

19. Do you perceive a conflict between military access to training areas and critical species management? If so, please give a short explanation?

○ Yes ○ No

Comments?

Q19: 4 participants indicated there is No conflict between training and natural resource management
5 participants skipped

Q19 Comments: No comments recorded

20. Does your organization currently have public education programs that inform about the management of Threatened and/or Endangered species on your installation?

○ Yes ○ No

Q20: 2 participants said yes they have public education programs
3 participants indicated they did not
4 participants skipped

21. Please comment on the effectiveness of public education programs in maintaining good relations with the local public and special interest groups?

Comments:

Q21 Comments:

- Newcomers brief informs newly assigned airmen. Representatives form local schools, community group etc. listen to this brief although it is not specifically designed for them.
- Education program meets needs; public is aware and the species is protected.

22. Does your organization partner with outside organizations in managing Threatened and/or Endangered species?

○ Yes ○ No

If so, please list the organizations:

Comments:

Q22: 3 participants indicated they partnered with outside organizations
6 participants skipped

Q22 Comments:
- All 3 indicated they partnered with the USFWS
- 1 participant indicated they partnered with the Wildlife Conservation Commission, the Nature Conservancy and Archbold Biological station

Section 4 - Manpower

23. How many natural resources managers currently work on your installation?

Comments: _____

Q23: 5 participants indicated they have 1 natural resources manager working on their base

Q23 Comments:
- The question asked how many "Natural resources Managers" work on an installation. Since this is a specific duty title, only one Natural resources Manger works on the base even though a base may have several technicians that manage natural resources
- There is only 1 Natural resources Manger but we have several people who manage natural resources

24. Are there currently unfunded natural resources management manpower positions in your organization?

○ Yes ○ No

If so, please list how many:

Comments: _____

Q24: 5 participants indicated they have un-funded manpower positions
1 participant indicated they did not have any un-funded manpower positions
3 participants skipped

Q24 Comments:
- Full-time wildlife biologist works the day-to-day, hands-on issues. Many duties cannot be accomplished with this minimal manpower

25. Does the management of Threatened and/or Endangered species require dedicated manpower on your installation?

Comments:

Q25 Comments: No comments recorded

26. Do you receive manpower support from outside organizations to aid in the management of Threatened and/or Endangered species?
Some examples could be mutual support agreements or volunteer work.

○ Yes ○ No

Q26: 4 participants indicated yes they receive manpower support
4 participants indicated No; they do not receive manpower support

1 participant skipped

27. Does your organization have biological or wildlife specialist (experts) who specifically manages Threaten and/or Endangered species?

○ Yes ○ No

Q27: 3 participants indicated yes; they have specific manpower to manage critical species
5 participants indicated no; they have specific manpower to manage critical species
1 skipped

28. If your organization employees biological or wildlife specialist (experts), do they have adequate training and experience to manage the specific species on your installation?

○ Yes ○ No

Comments:

Q28: 2 participants indicated yes they have adequate training
2 participants indicated no they do not have adequate training
5 participants skipped

Q28 Comments: No comments recorded

Section 5 - Budget

29. Do you receive funding support from outside organizations to aid in the management of Threatened and/or Endangered species?

○ Yes ○ No

Q29: 1 participant indicated yes they receive funding from outside the organization
5 participants indicated no; they do not receive funding from outside the organization
3 participants skipped

30. Do you receive adequate funding for natural resources management?

○ Yes ○ No

Q30: 1 participant indicated they receive adequate funding
7 participants indicated they did not receive adequate funding
1 skipped

31. What are your top unfunded natural resources management issues?

Comments:

Q31 Comments:
- Areas of concern. Enhancement of natural resource. Restoration
- Grazing and vegetation monitoring
- Implementation of the prescribed burn program and sufficient funding for annual burns. Funding for GIS equipment. Funding for road and other range maintenance.
- Habitat restoration, control of noxious vegetation, wetland restoration
- INRMP revision and species studies

32. What is your approximate yearly budget for natural resources management?

Comments:

Q32: $200K
$335K
$16K; I received one half of the validated NR funds I was due
$500K
$8K

Additional Space for Comments from questions above (Please Reference question Number)

Summary of Data

Section 1 - The National Defense Authorization Act of Fiscal Year 2004

Q1: 2 participants were notified
7 participants not notified

Only two of the nine responses reported answering Yes to Question 1 (Q1) the rest were skipped to Section II

Q2: 2 participants answered Yes
7 participants skipped to Section II

Q2 Comments: No Comments recorded

Q3: 2 Participants rated information about the impact on critical species as Not Useful
7 participants skipped to Section II

Q4: 2 Participants rated information about impact on their budget as Not Useful
7 participants skipped to Section II

Q5: 2 Participants rated information about the impact on their manpower as Not Useful
7 participants skipped to Section II

Q6: 2 Participants responded that their work level would remain the same
7 participants skipped to Section II

Q6 Comments: No Comments recorded

Q7: 1 participant responded that protection would remain the same
1 participant responded that protection would decrease
7 participants skipped to Section II

Q7 Comments: No comments recorded

Q8: 2 participants responded that critical habitat exemptions will not change their management practices
7 participants skipped to Section II

Q8 Comments: No comments recorded

Q9 Concerns: Only one concern was recorded from Section I – Leadership will ignore any law regarding habitat and will use interpret the exemptions way too liberally.

Section 2 - Integrated Natural resources Management Plan

Q10: 8 participants responded yes, they have an INRMP
1 participant responded no, they did not have an INRMP

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Q11 Comments: No comments recorded

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Q25 Comments: No comments recorded

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4 participants indicated No; they do not receive manpower support
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Q27: 3 participants indicated yes; they have specific manpower to manage critical species
5 participants indicated no; they have specific manpower to manage critical species
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Q28: 2 participants indicated yes they have adequate training
2 participants indicated no they do not have adequate training
5 participants skipped

Q28 Comments: No comments recorded

Section 5 - **Budget**

Q29: 1 participant indicated yes they receive funding from outside the organization
5 participants indicated no; they do not receive funding from outside the organization
3 participants skipped

Q30: 1 participant indicated they receive adequate funding
7 participants indicated they did not receive adequate funding
1 skipped

Q31 Comments:
- Areas of concern. Enhancement of natural resource. Restoration
- Grazing and vegetation monitoring
- Implementation of the prescribed burn program and sufficient funding for annual burns. Funding for GIS equipment. Funding for road and other range maintenance.
- Habitat restoration, control of noxious vegetation, wetland restoration
- INRMP revision and species studies

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$335K
$16K; I received one half of the validated NR funds I was due
$500K
$8K

Additional Comments: None Recorded

APPENDIX F - Abbreviations

(Commonly Used Abbreviations)

ACC	**Air Combat Command**
AFCEE	**Air Force Center for Environmental Excellence**
AFCESA	**Air Force Civil Engineer and Services Agency**
AFI	**Air Force Instruction**
AFRL	**Air Force Research Laboratory**
ANG	**Air National Guard**
DOD	**Department of Defense**
ESA	**Endangered Species Act**
GAO	**General Accounting Office**
INRMP	**Integrated Natural resources Management Plan**
MMPA	**Marine Mammal Protection Act**
MMPAA	**Marine Mammal Protection Act Amendment**
SAIA	**Sikes Act Improvement Act**
USAF	**United States Air Force**
USC	**United States Congress**
USFWS	**United States Fish and Wildlife Service**
WSIRB	**Wright Site Institutional Review Board**

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14. ABSTRACT

This research analyzed the United States Air Force's ability to meet the two conditions required for exemptions of critical habitat designations that are authorized under the National Defense Authorization Act for Fiscal Year 2004. The research was limited to natural resources management on United States Air Force training ranges. Department of Defense exemptions can only be achieved if specific conditions exist. The conditions require the development and management of an Integrated Natural Resources Management Plan that conserves threatened and endangered species and other natural resources to ensure the successful management of practices identified. The results of this project determined that Untied States Air Force's natural resources managers have Integrated Natural Resources Management Plans in place and have dedicated the resources to implement management polices identified in those plans. Electronic, internet-based surveys were used as the primary data collection tool. Phenomenological Analysis was used to perform an in-depth review of selected issues that were identified via the survey. Unexpected conclusions from this research highlighted a need for the United States Air Force to strengthen its education process for implementing new policies resulting from the implementation of the National Defense Authorization Act for Fiscal Year 2004.

15. SUBJECT TERMS

National Defense Authorization, Critical Species Management, Critical Habitat Designations, Department of Defense critical species management, Department of Defense management of Environmental laws, Training Range Management, Natural Resource Management.

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