

March 2008

MILITARY TRAINING

Compliance with Environmental Laws Affects Some Training Activities, but DOD Has Not Made a Sound Business Case for Additional Environmental Exemptions



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Report Documentation Page				Form Approved OMB No. 0704-0188	
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1. REPORT DATE MAR 2008		2. REPORT TYPE		3. DATES COVERED 00-00-2008 to 00-00-2008	
4. TITLE AND SUBTITLE Military Training: Compliance with Environmental Laws Affects Some Training Activities, but DOD Has Not Made a Sound Business Case for Additional Environmental Exemptions				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) United States Government Accountability Office, 441 G Street, NW, Washington, DC, 20548				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 58	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



Highlights of [GAO-08-407](#), a report to congressional committees

Why GAO Did This Study

A fundamental principle of military readiness is that the military must train as it intends to fight, and military training ranges allow the Department of Defense (DOD) to accomplish this goal. According to DOD officials, heightened focus on the application of environmental statutes has affected the use of its training areas. Since 2003, DOD has obtained exemptions from three environmental laws and has sought exemptions from three others. This report discusses the impact, if any, of (1) environmental laws on DOD's training activities and military readiness, (2) DOD's use of statutory exemptions from environmental laws on training activities, (3) DOD's use of statutory exemptions on the environment, and (4) the extent to which DOD has demonstrated the need for additional exemptions.

To address these objectives, GAO visited 17 training locations; analyzed environmental impact and readiness reports; and met with officials at service headquarters, the Office of the Secretary of Defense, federal regulatory agencies, and nongovernmental environmental groups.

What GAO Recommends

GAO recommends that, should DOD plan to pursue further environmental exemptions, it should develop a business case that analyzes and assesses the associated benefits, costs, and risks of those exemptions. DOD partially concurred with the recommendation and provided technical comments.

To view the full product, including the scope and methodology, click on [GAO-08-407](#). For more information, contact Brian J. Lepore, 202-512-4523, Leporeb@gao.gov.

MILITARY TRAINING

Compliance with Environmental Laws Affects Some Training Activities, but DOD Has Not Made a Sound Business Case for Additional Environmental Exemptions

What GAO Found

Compliance with environmental laws has caused some training activities to be cancelled, postponed, or modified, and DOD has used adjustments to training events, referred to as "workarounds," to accomplish some training objectives while meeting environmental requirements. Some DOD trainers instruct units to pretend restricted training areas are holy grounds, mine fields, or other restricted areas in theater, simulating the need to avoid specific areas and locations when deployed. GAO's review of readiness data for active duty combat units did not confirm that compliance with environmental laws hampers overall military readiness.

Since 2006, the Navy has twice invoked the Marine Mammal Protection Act exemption to continue using mid-frequency active sonar in training exercises that would otherwise have been prevented. DOD's exemption from the Migratory Bird Treaty Act, authorizing the taking of migratory birds, eliminated the possibility of having to delay or cancel military training exercises, such as Navy live-fire training at the Farallon de Medinilla Target Range. The exemption to the Endangered Species Act, which precludes critical habitat designation on DOD lands, enables DOD to avoid potential training delays by providing greater autonomy in managing its training lands.

On the basis of meetings with officials within and outside DOD and visits to 17 training ranges, GAO found no instances where DOD's use of exemptions from the Endangered Species Act or Migratory Bird Treaty Act has adversely affected the environment, but the impact of the Marine Mammal Protection Act exemption has not yet been determined. The services employ a variety of measures and conservation activities to mitigate the effects of training activities on the natural resources located on DOD lands. Additionally, regulatory officials GAO spoke to said DOD has done an effective job protecting and preserving endangered species and habitats on its installations. However, some nongovernmental organizations have expressed concern that the Endangered Species Act exemption allowing DOD to avoid critical habitat designations may weaken oversight from the U.S. Fish and Wildlife Service.

DOD has not presented a sound business case demonstrating the need for the proposed exemptions from the Clean Air Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation, and Liability Act. Best practices and prior GAO work recommend that agencies develop a business case that includes, among other things, expected benefits, costs, and risks associated with a proposal's implementation. However, DOD has not provided any specific examples showing that training and readiness have been hampered by requirements of these laws. Meanwhile some federal, state, and nongovernmental organizations have expressed concern that the proposed exemptions, if granted, could harm the environment. Until DOD develops a business case demonstrating the need for these exemptions, Congress will lack a sound basis for assessing whether to enact requested exemptions.

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Abbreviations

DOD	Department of Defense
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CPEO	Center for Public Environmental Oversight
CZMA	Coastal Zone Management Act
EPA	Environmental Protection Agency
FWS	U.S. Fish and Wildlife Service
NEPA	National Environmental Policy Act
NGOs	Nongovernmental organizations
NRDC	Natural Resources Defense Council
OSD	Office of the Secretary of Defense
PEER	Public Employees for Environmental Responsibility
RCRA	Resource Conservation and Recovery Act

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United States Government Accountability Office
Washington, DC 20548

March 7, 2008

The Honorable Carl Levin
Chairman
The Honorable John McCain
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Ike Skelton
Chairman
The Honorable Duncan L. Hunter
Ranking Member
Committee on Armed Services
House of Representatives

A fundamental principle of military readiness is that the military must train as it intends to fight, and military training ranges¹ provide the primary means to accomplish this goal. New advances in technology, coupled with the ongoing shift in force posture, mean that the Department of Defense (DOD) needs to continually update and maintain its training ranges. Military training ranges vary in size from a few acres for small arms training to over a million acres for large maneuver exercises and weapons testing, as well as broad open ocean areas that provide for offshore training and testing. Like other federal, state, local, and private facilities, DOD installations are required to comply with environmental and other laws that are intended to protect human health and the environment from harm. However, according to DOD officials, a slow but steady increase in restrictions affecting the use of these areas, such as heightened focus on the application of environmental statutes and other encroachment

¹Military ranges and training areas include air ranges for air-to-air, air-to-ground, drop zone, and electronic combat training; live fire ranges for artillery, armor, small arms, and munitions training; ground maneuver ranges to conduct force-on-force and live-fire training at various unit levels; and sea ranges to conduct ship maneuvers for training.

pressures,² has limited the use of military training areas for realistic training activities. DOD officials report that the gradual accumulation of these limitations will increasingly threaten readiness.

Most existing environmental laws allow for national security exemptions, which DOD may request on a case-by-case basis when compliance with specific environmental requirements is shown to have an impact on the paramount interests of the United States. However, DOD has seldom invoked these case-by-case exemptions, asserting that the number of training exercises it conducts and the need to periodically reapply for most exemptions makes obtaining them on a case-by-case basis onerous and time consuming. In 2002, DOD submitted to Congress an eight-provision legislative package known as the Readiness and Range Preservation Initiative, which contained six provisions that sought to modify the applicability of certain environmental statutory requirements to DOD, in light of concern that these statutes could limit realistic preparations for combat and negatively affect military readiness.³ Pursuant to the Bob Stump National Defense Authorization Act for Fiscal Year 2003⁴ and the National Defense Authorization Act for Fiscal Year 2004,⁵ the Readiness and Range Preservation Initiative provisions revising the Migratory Bird Treaty Act,⁶ the Endangered Species Act⁷ and the Marine

²DOD defines encroachment as the cumulative result of any and all outside influences that impede normal training. There are 12 encroachment pressures that generally fall within three broad categories: (1) competition for resources, (2) development near military training areas, and (3) environmental enforcement and compliance issues. Specific encroachment pressures related to environmental issues include endangered species and their critical habitat, unexploded ordnance and munitions, maritime sustainability, air quality, water quality, and wetlands. The remaining encroachment pressures are urban growth, cultural resources, frequency encroachment, range transients, airborne noise, and airspace restrictions.

³The other two provisions were to allow DOD to cooperate more effectively with third parties—such as environmental conservation groups, state and local governments, and private citizens—on land transfers for conservation purposes. These provisions were enacted pursuant to the Bob Stump National Defense Authorization Act for Fiscal Year 2003. Pub. L. No. 107-314, §§ 2811, 2812.

⁴Pub. L. No. 107-314, § 315, hereafter referred to as the fiscal year 2003 defense authorization act.

⁵Pub. L. No. 108-136, §§ 318, 319, hereafter referred to as the fiscal year 2004 defense authorization act.

⁶16 U.S.C. § 703. This Migratory Bird Treaty Act revision authorized the Secretary of the Interior to prescribe regulations that enable DOD to unintentionally harm or “take” migratory birds without violating the act.

Mammal Protection Act⁸ were enacted into law. Since 2002, DOD has repeatedly but unsuccessfully sought enactment of the three remaining provisions, which would exempt DOD from certain requirements of the Clean Air Act;⁹ the Resource Conservation and Recovery Act (RCRA);¹⁰ and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).¹¹ The case-by-case exemptions and each of the Readiness and Range Preservation Initiative provisions are discussed in greater detail in the background section of this report.¹²

Over the past several years, we have produced a body of work describing the effects of encroachment on DOD's training activities, including encroachment from endangered species. For example, in 2002 we reported that DOD's readiness reports did not indicate the extent to which environmental requirements restricted training activities and that these reports indicated a high level of military readiness overall.¹³ We also noted individual instances of environmental requirements affecting training at some military installations and recommended that DOD's readiness reporting system be improved to more accurately identify problems for training that might be attributed to the need to comply with statutory

⁷16 U.S.C. § 1533. The Endangered Species Act revisions provide that the Department of the Interior's regulatory agency, the U.S. Fish and Wildlife Service, consider the impact to national security when designating critical habitat on DOD lands and provide alternatives to critical habitat designation.

⁸16 U.S.C. §§ 1362, 1371. The Marine Mammal Protection Act authorizes the Secretary of Defense, after conferring with the Secretaries of Commerce and/or the Interior, to make a case-by-case decision to exempt certain DOD activities from complying with the law when necessary for the national defense.

⁹42 U.S.C. § 7506(c). The Clean Air Act prohibits federal agencies from engaging in any activity that does not conform to the applicable implementation plans for achieving and maintaining the national ambient air quality standards.

¹⁰42 U.S.C. § 6901 et seq. RCRA is a 1976 amendment to the Solid Waste Disposal Act of 1965, the first federal law regulating solid wastes—a broad category of materials including such materials as garbage from homes or businesses and waste materials resulting from industrial, commercial, or agricultural activities. In this report, we use the term RCRA to refer to the portions of the Solid Waste Disposal Act amended in 1976.

¹¹42 U.S.C. § 9601 et seq. CERCLA is the primary law governing the Superfund environmental cleanup program.

¹²While we recognize that each of the provisions enacted by Congress affect change by various means in various environmental laws, as described in footnotes 6 through 11 above, for purposes of consistency and readability, in this report we refer to all of the Readiness and Range Preservation Initiative provisions as exemptions.

¹³GAO, *Military Training: DOD Lacks a Comprehensive Plan to Manage Encroachment on Training Ranges*, [GAO-02-614](#) (Washington, D.C.: June 11, 2002).

environmental requirements. In 2003, we testified that environmental requirements were only one of several factors that affected DOD's ability to carry out training activities but that DOD was still unable to broadly measure the effects of encroachment on readiness.¹⁴ In a 2005 report, we found that DOD continued to face various difficulties in carrying out realistic training at its ranges.¹⁵

House Armed Services Committee Report 110-146, which accompanies the National Defense Authorization Act for Fiscal Year 2008,¹⁶ directed us to review the extent to which environmental laws, regulations, and exemptions are affecting DOD's training activities, military readiness, and the environment. This report discusses the effects, if any, of (1) environmental laws on DOD's training activities and military readiness, (2) DOD's use of exemptions from environmental laws on training activities, and (3) DOD's use of exemptions on the environment. Lastly, the report evaluates the extent to which DOD has demonstrated the need for its proposed exemptions from the Clean Air Act, RCRA, and CERCLA as means of achieving its training and readiness goals.

In performing this review, to directly observe the effects, if any, of environmental laws and DOD's use of exemptions to the Migratory Bird Treaty Act, Endangered Species Act, and the Marine Mammal Protection Act on training activities, military readiness, and the environment, we judgmentally selected 17 military training installations which included training sites from each military service component. The installations we selected were identified based on our previous work involving some installations experiencing encroachment and sustainable training range issues. DOD concurred that the installations we selected continue to have problems in this area and stated that these locations would provide an important perspective of some of the challenges DOD faces to comply with environmental laws. Because the installations were judgmentally selected, the specific challenges faced at these selected locations cannot be generalized across all of DOD. We also obtained and reviewed documents and reports describing the effects of environmental laws and statutory exemptions on training and readiness and the need for

¹⁴GAO, *Military Training: DOD Approach to Managing Encroachment on Training Ranges Still Evolving*, [GAO-03-621T](#) (Washington, D.C.: Apr. 2, 2003).

¹⁵GAO, *Military Training: Better Planning and Funding Priority Needed to Improve Conditions of Military Training Ranges*, [GAO-05-534](#) (Washington, D.C.: June 10, 2005).

¹⁶Pub. L. No. 110-181.

workarounds to meet training requirements from DOD and military service officials responsible for managing military training. In addition, we reviewed unit readiness data for fiscal years 2006 and 2007, which included some commander comment summaries describing, when applicable, why a unit had not met its unit training requirements. Our review of these data allowed us to assess whether environmental restrictions imposed on DOD installations had an impact on unit readiness. To determine the effect of DOD's use of the exemptions on the environment, we reviewed related reports and studies, and some installation management plans to determine how natural resources, such as migratory birds, marine mammals, and endangered species and their habitats are protected on DOD lands during military training exercises. We also interviewed officials from nongovernmental organizations (NGO) that are involved in endangered species protection efforts and wildlife oversight issues to obtain their perspectives on how well DOD has done to protect the natural resources on its lands. We interviewed officials from the Office of the Secretary of Defense (OSD); the Departments of the Army, the Navy, and the Air Force; the Marine Corps; other federal agencies, such as the Environmental Protection Agency (EPA), the National Marine Fisheries Service,¹⁷ and the U.S. Fish and Wildlife Service (FWS)¹⁸ to discuss the effects of environmental laws and statutory exemptions on military training activities. We also discussed with these officials the potential benefits and problems associated with the proposed statutory exemptions to the Clean Air Act, RCRA, and CERCLA on training activities, military readiness, and the environment. In addition, we reviewed documents that provided the perspectives of NGOs and federal and state regulatory agencies on the potential impact of the proposed exemptions on the environment.

On the basis of information obtained from the military services on the reliability of their unit readiness data, our discussions with DOD, military service, and NGO officials, and our review and analysis of documents and

¹⁷National Marine Fisheries Service is the federal agency within the Department of Commerce's National Oceanic and Atmospheric Administration that is responsible for the stewardship of the nation's living marine resources and their habitats. It is also responsible for implementing the Marine Mammal Protection Act and the Endangered Species Act for certain marine species.

¹⁸FWS is a bureau within the Department of the Interior that is responsible for conserving, protecting, and enhancing fish, wildlife, and plants and their habitats. It is also responsible for implementing the Migratory Bird Treaty Act, the Endangered Species Act, and the Marine Mammal Protection Act for certain species.

reports describing the effects of environmental requirements and statutory exemptions on training activities, military readiness, and the environment, we believe that the data used in this report are sufficiently reliable for our purposes. The time periods encompassed by the data used in this report vary for each of our objectives depending on the date ranges for which each type of data was available. We conducted this performance audit from June 2007 through March 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. A more thorough description of our scope and methodology is presented in appendix I.

Results in Brief

While compliance with environmental laws has affected some training activities and how they are conducted, reported readiness data do not confirm that compliance with these laws hampers overall military readiness. Since 2002, DOD officials have voiced concerns that compliance with statutory environmental requirements has hindered DOD's ability to provide units with adequate, realistic training and may cause units to receive a substandard level of training. During our visits to 17 military training ranges, we found some instances where training activities were cancelled, postponed, or modified in order to meet environmental requirements. For example, at Fort Irwin, California, the presence of threatened desert tortoises caused trainers and commanders to plan training scenarios around areas blocked off to protect these species, limiting the amount of training areas commanders can use to train their units. We also found instances where DOD used adjustments to training events, referred to as workarounds, to accomplish training objectives while meeting environmental requirements. For example, at Camp Pendleton, California, officials said that to protect species' habitat and cultural sites Marines plant flags to represent foxholes instead of digging foxholes on the beach, which limits their ability to conduct realistic training. Some DOD officials acknowledged that learning to deal with restrictions is standard operating procedure and some trainers instruct units to pretend restricted training areas are holy grounds, mine fields, or other restricted areas in theater, which offers an element of realism on the need to avoid specific areas and locations when deployed. Our review showed that cancellations or modifications of some training activities occurred at some of the installations we visited; however, readiness data for active duty combat units did not confirm that military readiness was

hindered because of restrictions imposed by various environmental laws. Furthermore, DOD's readiness reporting system does not systematically capture the ability of individual ranges to support training or the effects of endangered species and their habitats, wetlands, air quality, water quality, and other encroachment factors on range availability. OSD and the services are in the process of modifying their readiness reporting systems to capture this type of information, but these systems are in early stages of development.

DOD has used the exemptions from the Marine Mammal Protection Act and Migratory Bird Treaty Act to continue conducting training activities that might otherwise have been prohibited, delayed, or canceled, and the Endangered Species Act exemptions have enabled DOD to avoid potential training delays by providing it greater autonomy in managing its training lands. Since 2006, the Navy has twice invoked its exemption from the Marine Mammal Protection Act to continue using mid-frequency active sonar technology in military training exercises that would have otherwise been prevented by the law's protection of marine mammals, such as whales and dolphins, which may be affected by the technology. According to Navy officials, the use of mid-frequency active sonar is a vital component to its antisubmarine warfare training program. DOD's exemption from the Migratory Bird Treaty Act, which authorizes the incidental taking of migratory birds during military readiness activities, eliminated the possibility of having to delay or cancel military training exercises authorized by the Secretary of Defense, such as Navy live-fire training exercises at the Farallon de Medinilla Target Range within the Mariana Islands in the Pacific Ocean. DOD officials we spoke to told us that the exemption enabled DOD to avoid potential legal action that could have significantly affected training and readiness exercises at Farallon de Medinilla and other DOD installations. However, according to officials we met with during our visits to other installations with migratory bird populations, training activities at those locations generally do not affect migratory birds. The Endangered Species Act revisions provide that FWS consider the impact to national security when designating critical habitat on DOD lands and provide alternatives to critical habitat designation. According to DOD officials we spoke with, not having its lands designated as critical habitat gives the department the flexibility needed to perform readiness activities while simultaneously protecting the natural resources located on its installations. FWS officials stated that this exemption codified its practice of not designating critical habitat on DOD lands. However, DOD officials believed that the department needed this exemption to avoid the potential of any future FWS designations that could restrict training on DOD lands and cause potential delays in training

while the required administrative consultations with FWS are completed. According to FWS officials, critical habitat designations would have required an additional level of consultation, which would have had very minimal, if any, effect on DOD's ability to use its lands for training purposes. Nonetheless, DOD officials believed that the increased level of consultation would take additional time and resources to plan and execute military training.

Based on meetings with officials within and outside DOD and visits to 17 training ranges, we found no instances where DOD's use of exemptions from the Endangered Species Act or Migratory Bird Treaty Act has adversely affected the environment; however, the impact of the Marine Mammal Protection Act exemption has not yet been determined. DOD, federal regulatory agency and NGO official, and officials at the military training ranges we visited said that there were no instances where DOD's use of the Endangered Species Act exemptions has adversely affected the populations of endangered or threatened species. Moreover, the services employ a variety of measures and conservation activities to mitigate the effects of their training resources on endangered species populations on their lands. We found that, in several instances, these efforts have achieved positive results with regard to the increases in the populations of certain endangered species. For example, at Naval Base Coronado, California, the Navy, in partnership with FWS and the San Diego Zoo, has developed a captive breeding program that has increased the population of the San Clemente loggerhead shrike, an endangered bird species, on San Clemente Island. In addition, based on conservation efforts at Eglin Air Force Base, Florida, and Fort Stewart, Georgia, the number of red-cockaded woodpeckers, an endangered bird species, has increased. FWS officials told us that DOD has taken positive steps to manage and preserve its natural resources and provided several examples of where DOD has taken proactive steps to manage threatened species and species being considered for protection under the act. NGOs, such as the Natural Resources Defense Council (NRDC), the Center for Biological Diversity, and the Endangered Species Coalition, have all expressed concern that DOD's use of these plans in lieu of critical habitat designation may weaken the oversight FWS has under the Endangered Species Act. With regard to the Migratory Bird Treaty Act exemption, DOD, federal regulatory agency officials, NGO officials, and officials at the military training ranges we visited all said that there were no instances where DOD's use of the exemption has significantly affected the populations of migratory birds. However, DOD and NGO officials disagree about the overall effect of the Navy's use of mid-frequency active sonar on marine mammals protected under the Marine Mammal Protection Act. For example, some NGO's

argue that the use of Navy sonar has a direct link to whale and dolphin strandings. DOD acknowledges that, under certain circumstances and conditions, exposure to mid-frequency active sonar may have an effect upon certain species, but DOD states also that the causal connection between whale strandings and exposure to mid-frequency active sonar is not known.

DOD has not presented a sound business case demonstrating the need for the proposed exemptions from the Clean Air Act, RCRA, and CERCLA to help achieve its training and readiness requirements. Best practices and our prior work recommend that agencies develop a business case that includes, among other things, a description of the problem addressed by the proposal, the scope of the proposed initiative, anticipated benefits, other options considered, expected costs, and expected risks associated with the proposal's implementation. DOD has addressed some of these elements in its annual sustainable ranges reports¹⁹ and its Readiness and Range Preservation Initiative, and DOD officials have stated some possible benefits of the proposed exemptions including greater flexibility in replacing or realigning forces and equipment in areas that do not meet certain EPA air quality standards, safeguards against lawsuits over munitions-related training, and a shield from regulatory actions related to the firing of munitions on operational ranges. However, the department has not provided any specific examples to support its assertions that these activities have been hampered by requirements of the Clean Air Act, RCRA, or CERCLA, respectively. DOD also has not provided any of the other elements of a sound business case. Meanwhile, some federal, state, and NGO officials have expressed concern that the proposed exemptions, if granted to DOD, could lead to harming the environment by potentially increasing air pollution or weakening federal and state oversight of DOD activities on operational ranges. Until DOD develops a sound business case in support of its proposed exemptions from the Clean Air Act, RCRA, and CERCLA, Congress lacks a sound basis for assessing the need to enact these three requests.

¹⁹Section 366 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003 requires that the Secretary of Defense report with DOD's budget submission for fiscal year 2005 through fiscal year 2008 on several items, such as describing the progress made in implementing DOD's plan to address training constraints caused by limitations on the use of military lands, marine areas, and airspace, and any additional actions taken or to be taken to address training constraints.

Should DOD plan to pursue exemptions from the Clean Air Act, RCRA, CERCLA, or other environmental laws in the future, we recommend that DOD develop a sound business case that includes detailed qualitative and quantitative analyses assessing the associated benefits, costs, and risks of the exemptions from these environmental laws. In written comments on a draft of this report, DOD partially concurred with our recommendation. DOD agreed that a sound business case should be developed in association with future proposals to environmental laws and added that it does not accept the premise readiness and training imperatives or associated risks were not conveyed to the extent feasible for its Clean Air Act, RCRA, and CERCLA provisions. We continue to believe that DOD has not provided adequate support for its assertion that military readiness have been hindered by the requirements of these laws, and we stand by our recommendation that DOD needs to present a sound business case should it pursue future exemptions. We discuss DOD's comments in detail later in this report.

Background

One of DOD's goals is to prepare its combat units for wartime operations by providing units with the most realistic training possible. DOD operates and maintains hundreds of training ranges located throughout the country. Its combat units use training areas located in a wide variety of climates and include the full scale of training terrains, such as ocean areas, desert and mountainous regions, and jungle-like environments, which provide DOD combat units the opportunity to train in environments they will most likely operate in once deployed for wartime operations. These training areas also encompass critical habitat and are home to a variety of endangered species.

Several Environmental Statutes Include National Security Exemptions

Like other federal, state, local, and private facilities, DOD installations are generally required to comply with environmental and other laws that are intended to protect human health and the environment from harm. However, several environmental statutes include a national security exemption that DOD may invoke to ensure the requirements of those statutes would not restrict military training needs that are in the paramount interest of the United States. These exemptions require a case-by-case determination by an authorized decision maker and provide authority for suspending compliance requirements for actions at federal facilities, including military installations. To date, DOD has received or

invoked exemptions under the Coastal Zone Management Act (CZMA), Endangered Species Act,²⁰ Marine Mammal Protection Act, and RCRA. Although seldom made, DOD's requests for exemption have been approved in every case. Table 1 presents the environmental statutes that authorize case-by-case exemptions and the approval standards.

²⁰ 16 U.S.C. § 1533(b)(2).

Table 1: Environmental Laws Authorizing Case-by-Case Exemptions for Federal Facilities

Statute	Clean Air Act 42 U.S.C. §7418(b)	Clean Water Act 33 U.S.C. §1323(a)	Coastal Zone Management Act 16 U.S.C. § 1456(c)(1)(B)
Authorized decision maker	The President	The President	The President
Standard	In the paramount interest of the United States	In the paramount interest of the United States	In the paramount interest of the United States
Duration	Not to exceed 1 year; additional 1 year exemptions may be granted	Not to exceed 1 year; additional 1 year exemptions may be granted	No limit
Reporting requirement	Annual report by President to Congress of exemptions granted with the reason for granting	Annual report by President to Congress of exemptions granted with the reason for granting	None

Source: GAO analysis of environmental statutes.

^aThe Marine Mammal Protection Act's case-by-case exemption was created pursuant to the fiscal year 2004 defense authorization act, in response to a Readiness and Range Preservation Initiative proposal.

^bMembers of the Endangered Species Committee are the Secretaries of the Interior, Agriculture, and the Army; the Administrators of EPA and the National Oceanic and Atmospheric Administration; the Chairman of the Council of Economic Advisors; and a presidential appointee from each affected state.

Comprehensive Environmental Response Compensation and Liability Act 42 U.S.C. §9620(j)	Endangered Species Act 16 U.S.C. §1536(j)	Marine Mammal Protection Act^a 16 U.S.C. §1371(f)	Noise Control Act 42 U.S.C. §4903(b)	Resource Conservation and Recovery Act 42 U.S.C. §6961(a)	Safe Drinking Water Act 42 U.S.C. §300h-7(h)
The President	The Endangered Species Committee ^b	The Secretary of Defense, after conferring with the Secretary of Commerce or the Interior, as appropriate	The President	The President	The President
Where necessary to protect U.S. national security interests at a DOD or Department of Energy site or facility	Necessary for national security	Necessary for national defense	In the paramount interest of the United States	In the paramount interest of the United States	In the paramount interest of the United States
Not to exceed 1 year; additional 1 year exemptions may be granted	No limit	For a specified period not to exceed 2 years; additional 2 year exemptions may be granted	Not to exceed 1 year; additional 1 year exemptions may be granted	Not to exceed 1 year; additional 1 year exemptions may be granted	No limit
President must notify Congress within 30 days of ordering an exemption and state reasons for granting; also periodic progress reports to Congress	None, unless the committee directs DOD to carry out mitigation measures for the affected species	No later than 30 days after issuing the exemption, the Secretary of Defense shall give notice to the House and Senate Armed Services Committees	Annual report by President to Congress of exemptions granted with the reason for granting	Annual report by President to Congress of exemptions granted with the reason for granting	None

DOD's Readiness and Range Preservation Initiative Proposed Revisions to Six Environmental Statutes

In 2002, DOD submitted to Congress an eight-provision legislative package, referred to as the Readiness and Range Preservation Initiative, proposing revisions to six environmental statutes on the basis of DOD's concerns that restrictions in these statutes could limit realistic preparations for combat and negatively affect military readiness.²¹ DOD also requested two additional provisions that would allow DOD to cooperate more effectively with third parties on land transfers for conservation purposes. To date, Congress has enacted five of the Readiness and Range Preservation Initiative provisions.

The fiscal year 2003 defense authorization act²² directed the Secretary of the Interior to prescribe regulations for issuing permits for the "incidental takings" of migratory birds during military training exercises authorized by the Secretary of Defense and provided an interim exemption from the Migratory Bird Treaty Act's²³ prohibition against taking, killing, or possessing any migratory birds except as permitted by regulation, until the implementation of new regulations. DOD had been concerned about the effects of a court decision holding that certain military readiness activities resulting in migratory bird takings violated the Migratory Bird Treaty Act.

Interior department regulations published in February 2007 allow for the Armed Forces to take migratory birds incidental to military readiness activities, provided that for those activities the Armed Forces determine may result in a significant, adverse effect on a population of migratory bird species, they must confer with the FWS to develop and implement appropriate conservation measures to minimize or mitigate those effects.²⁴ The Secretary of the Interior retains the power to withdraw or suspend the authority for incidental takings of migratory birds for particular activities under certain circumstances. Two additional provisions enacted in the fiscal year 2003 defense authorization act authorized the Secretary of a military department to enter into an agreement with a state or local government or any private organization committed to the conservation,

²¹ According to DOD, the legislative proposals sought to "clarify" the relationship between military training and a number of provisions in various conservation and compliance statutes, including the Endangered Species Act, the Migratory Bird Treaty Act, the Marine Mammal Protection Act, the Clean Air Act, RCRA, and CERCLA.

²² Pub. L. No. 107-314, § 315.

²³ 16 U.S.C. § 703.

²⁴ 50 C.F.R. § 21.15. (2007).

restoration, or preservation of land and natural resources to address encroachment issues and to convey any surplus real property under the Secretary's administrative control that is suitable and desirable for conservation purposes to any state or local government or nonprofit organization committed to conservation of natural resources on real property.²⁵

The fiscal year 2004 defense authorization act²⁶ enacted two of the five remaining Readiness and Range Preservation Initiative provisions by authorizing DOD exemptions from the Endangered Species Act²⁷ and the Marine Mammal Protection Act.²⁸ One of the revisions to the Endangered Species Act precluded the Secretary of the Interior from designating as critical habitat DOD lands that are subject to an approved integrated natural resources management plan, if the Secretary makes a written determination that such a plan provides a benefit to the species being designated.²⁹ DOD, like other federal agencies, is still required to consult with the FWS and the National Marine Fisheries Service, as appropriate, to ensure that actions it performs, authorizes, funds, or permits are not likely to jeopardize the continued existence of a listed species or adversely modify its critical habitat.³⁰ In DOD's view, this statutory revision was needed to avoid the potential of any future critical habitat designations that could restrict the use of military lands for training. The other revision to the Endangered Species Act requires the Secretary of the Interior to consider effects on national security when deciding whether to designate critical habitat,³¹ but does not remove DOD from being subject to all other protections provided under the act. The revision to the Marine Mammal Protection Act authorized the Secretary of Defense to exempt for a specific period, not to exceed 2 years, any action or category of actions undertaken by DOD or its components from compliance with the act's prohibition against illegal takings of marine mammals, if the Secretary determines it is necessary for national defense. The revision also amended

²⁵ Pub. L. No. 107-314, §§ 2811, 2812.

²⁶ Pub. L. No. 108-136, §§ 318, 319.

²⁷ 16 U.S.C. § 1533.

²⁸ 16 U.S.C. §§ 1362, 1371.

²⁹ 16 U.S.C. § 1533(a)(3)(b).

³⁰ 16 U.S.C. § 1536(a)(2).

³¹ 16 U.S.C. § 1533(b)(2).

the definition of “harassment” of marine mammals, as it applies to military readiness activity, to require evidence of harm or a higher threshold of potential harm, and required the Secretary of the Interior to consider the impact on the effectiveness of the military readiness activity in the issuance of permits for incidental takings. In DOD’s view these amendments were needed to prevent restrictions on the use of the Navy’s sonar systems.

Similar to previous years since fiscal year 2003, DOD included in its proposed National Defense Authorization Act for Fiscal Year 2008 the three remaining Readiness and Range Preservation Initiative provisions which provide exemptions from certain requirements of the Clean Air Act, RCRA, and CERCLA. As with previous Congresses, the 110th Congress did not include these provisions in the version of the bill that went before both houses for final vote. Descriptions of the three remaining proposals follow:

- First, the proposed revision to the Clean Air Act would have deferred emissions generated by military readiness activities from conforming to applicable state clean air implementation plans for achieving federal air quality standards and allowed DOD up to 3 years to satisfy these requirements. To be in conformity, a federal action must not contribute to new violations of the standards for ambient air quality, increase the frequency or severity of existing violations, or delay timely attainment of standards in the area of concern. DOD proposed this revision to provide flexibility for transferring training operations to areas with poor air quality without restrictions on these operations due to generated emissions. In addition, the revision would have required EPA to approve a state plan even if emissions from military readiness activities would prevent a given area within the state from achieving clean air standards.
- Second, DOD’s proposed revision to RCRA would have amended the definition of “solid waste” to exclude munitions that are on an operational range³² incident to their normal use, thereby excluding such munitions from regulation under RCRA. RCRA governs, among other things, the management of hazardous wastes, including establishing standards for treatment, storage, and disposal facilities.

³²The term operational range is defined in Title 10 of the U.S. Code as a range that is under the jurisdiction or control of the Secretary of a military department and may or may not be currently used for range activities, but has not been put to a new use that is incompatible with range activities. 10 U.S.C. §101 (e)(3).

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- Third, the proposed revision to CERCLA, under which entities responsible for releases of hazardous substances are liable for associated cleanup costs, would have similarly amended the definition of “release.” CERCLA defines release as any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant).

DOD’s view is that the proposed revisions to RCRA and CERCLA would clarify existing regulations EPA finalized in its 1997 Military Munitions Rule,³³ pursuant to which “used” or “fired” munitions on a range are considered solid waste, subject to disposal requirements, only when they are removed from their landing spot. DOD sought this revision to eliminate the possibility of legal challenges to the rule, which might have resulted in an active range being closed to require the removal of accumulating munitions and cleanup of related contamination, thus restricting training.

Defense Readiness Reporting System

To the extent that encroachment adversely affects training readiness, opportunities exist for the problems to be reported in departmental and military service readiness reports. DOD defines readiness as the ability of U.S. military forces to fight and meet the demands of the national military strategy. Readiness is the synthesis of two distinct but interrelated levels: unit readiness (the ability of each unit to provide capabilities required by the combatant commanders to execute their assigned missions) and joint readiness (the combatant commander’s ability to integrate and synchronize ready combat and support forces to execute his or her assigned missions).

DOD has stated that the goal of any readiness reporting or assessment system is to reveal whether forces can perform their assigned missions. Historically, DOD has inferred this ability from the status of unit resources via the Global Status of Resources and Training System. This system is the primary means for units to report readiness against designed operational goals. The system’s database indicates, at selected points in time, the

³³Environmental Protection Agency, “Military Munitions Rule: Hazardous Waste Identification and Management; Explosives Emergencies; Manifest Exemption for Transport of Hazardous Waste on Right-of-Ways on Contiguous Properties” *Federal Register*, vol. 62, p. 6622 (Feb. 12, 1997).

extent to which units possess the required resources and training to undertake their wartime missions. DOD found, however, that these input-based assessments do not yield direct information on whether a force can actually perform an assigned mission despite potential resource shortfalls.

In the spring of 2002, DOD announced plans to create a new Defense Readiness Reporting System that would provide commanders with a comprehensive assessment of the ability of capable entities to conduct operations without the command having to research and examine numerous databases throughout DOD, such as the Global Status of Resources and Training System and the service-specific readiness reporting systems. According to DOD, this new system is expected to be able to seamlessly integrate readiness data with planning and execution tools, providing a powerful means for rapidly assessing, planning, and executing operations. This system expands the readiness reporting process from simple resource-based reporting to the use of near real-time readiness information and dynamic analysis tools to determine the capability of an organization to execute tasks and missions. Specifically, the system represents a shift from (1) resources to capabilities—inputs to outputs; (2) deficiencies to their implications; (3) units to the combined forces; and (4) frontline units to all units contributing to front line operations.

Our Prior Work

This report is a continuation of a series of reports that we have issued on matters related to training constraints as a result of encroachment factors on DOD's training ranges. The following summarizes key issues from these reports:

- In June 2002, we reported that DOD's readiness reports did not indicate the extent to which environmental requirements restricted training activities, and that these reports indicated a high level of military readiness overall.³⁴ We also noted individual instances of environmental requirements at some military installations and recommended that DOD's readiness reporting system be improved to more accurately identify problems for training that might be attributed to the need to comply with statutory environmental requirements. We found that (1) despite the loss of some capabilities, service readiness data did not indicate the extent to which encroachment has significantly affected

³⁴ [GAO-02-614](#).

reported training readiness; (2) though encroachment workarounds may affect costs, the services had not documented the overall impact of encroachment on training costs; and (3) the services faced difficulties in fully assessing the impact of training ranges on readiness because they had not fully defined their training range requirements and lacked information on the training resources available to support those requirements.

- In April 2003, we testified that environmental requirements were only one of several factors that affected DOD's ability to carry out training activities, but that DOD was still unable to broadly measure the effects of encroachment on readiness.³⁵ We found that (1) encroachment affected some training range capabilities, required workarounds, and sometimes limited training, at all stateside installations and major commands that we visited; (2) service readiness data in 2002 did not show the impact of encroachment on training readiness or costs, and though individual services were making some assessment of training requirements and limitations imposed by encroachment, comprehensive assessments had yet to be done; and (3) although some services reported higher costs because of encroachment-related workarounds for training, service data systems did not capture the costs comprehensively. We recommended a more comprehensive plan that clearly identified steps to be taken, goals and milestones to track progress, and required funding.
- In June 2005, we found that DOD continued to face various difficulties in carrying out realistic training at its ranges.³⁶ We reported that deteriorating conditions and a lack of modernization adversely affected training activities and jeopardized the safety of military personnel. We observed various degraded conditions at each training range visited, such as malfunctioning communication systems, impassable tank trails, overgrown areas, and outdated training areas and targets. DOD's limited progress in improving training range conditions was partially attributable to a lack of a comprehensive approach. We found that (1) while the services had individually taken a varying number of key management improvement actions, such as developing range sustainment policies, these actions lacked consistency across DOD or focused primarily on encroachment without including commensurate efforts on other issues, such as maintenance and modernization; (2)

³⁵ [GAO-03-621T](#).

³⁶ [GAO-05-534](#).

though the services could not precisely identify the funding required and used for their ranges, range requirements had historically been inadequately funded; and (3) although DOD policy, reports, and plans had either recommended or required specific actions, DOD had not fully implemented these actions.

Requirements to Comply with Environmental Laws Have Affected Some Training Activities, but Readiness Data Do Not Confirm that These Laws Hamper Military Readiness

The requirement to comply with environmental laws has affected some training activities and how they are conducted, but our review of DOD's readiness data does not confirm that compliance with these laws hampers overall military readiness. During our visits to training ranges, we found some instances where training activities were cancelled, postponed, or modified in order to address environmental requirements. However, DOD officials responsible for planning and facilitating training events may implement adjustments to training events, referred to as "workarounds," to ensure training requirements are still accomplished. Our discussions with officials responsible for readiness data and our review of these data did not confirm that military readiness has been hindered because of restrictions imposed by environmental laws. OSD and each of the military services are currently in the process of developing systems that will provide DOD leadership and outside stakeholders a better understanding of how external factors, such as environmental laws, affect the department's training and readiness.

Compliance with Environmental Laws Has Affected Some Training Activities and How They Are Conducted

Compliance with various environmental laws has created restrictions on how DOD manages, plans, and conducts training exercises on its installations. Military training areas are subject to environmental laws which are intended to help the survival and preservation of the natural resources located on these training lands. Many of these training areas are home to endangered species; thus, areas that could be used for training or had been used for training on DOD installations are restricted and blocked off to prevent units from disturbing or harming the habitat of the endangered species, as the following examples illustrate.

- Marine Corps Base Camp Pendleton, California Because of competing land use and various environmental restrictions, officials at the base have reported that Marine combat units can use only about 6 percent (less than 1 mile) of its 17 miles of sandy beaches along the coast of the Pacific Ocean for major amphibious landing training exercises. Two of the environmental restrictions cited were for the threatened San Diego fairy shrimp, the endangered Coastal California gnatcatcher and its habitat. Another restriction involved the nesting season for the

endangered bird called the California least tern (see fig. 1). Camp Pendleton officials said closing one beach during the nesting season introduces some artificiality into its training events because commanders would be limited in the number of landing areas available to them during offensive operational exercises.

Figure 1: California Least Tern Nesting Season Sign at Marine Corps Base Camp Pendleton, California



Source: GAO.

- Barry M. Goldwater Range, Luke Air Force Base, Arizona Training officials stated that in calendar year 2004, about 8 percent (72 cases out of 878) of the F-16 training exercises were cancelled due to the presence of the endangered Sonoran pronghorn species present on the training range impact area.
- Aberdeen Proving Ground, Maryland Installation officials told us that on eight different occasions between April 2003 and June 2006, training exercises for the Naval Special Warfare Combatant Command were cancelled unexpectedly, due to the presence of new bald eagle nests in the training area and concerns that harm to the eagle population could have legal repercussions. In order to accomplish the required training requirements, the Navy official responsible for scheduling these

exercises told us that the expeditionary force teams had to reschedule their training exercises for later dates or alternate locations, which were not as beneficial as the training area provided at Aberdeen Proving Ground.

- Naval Base Coronado, San Clemente Island, California Training officials told us that during the fire season the Navy is prohibited from firing illumination rounds on the shore bombardment area at San Clemente Island, which is used by the Navy for surface ship live-fire exercises. The exact dates for fire season vary from year to year, depending on the weather, but are generally for 8 months. According to Navy officials, some sailors do not receive this type of training until after they are deployed.
- Army National Training Center, Fort Irwin, California Installation officials said the presence of the threatened desert tortoise caused trainers and commanders to plan training activities around areas designated and blocked off for the protection of this protected species.

Some military commanders believe that compliance with environmental laws protecting the natural resources may cause them to design training programs and scenarios that differ from what units would face once deployed for wartime operations. However, we found no evidence that combat units are unable to accomplish their training requirements despite the requirement to comply with various environmental laws. Furthermore, some officials we spoke with at these installations indicated that training areas available after protected zones had been established for these endangered species are sufficient to train units.

Some OSD officials and other officials within DOD expressed the view that, although combat units can satisfy training requirements and may be deemed ready for combat deployments, compliance with environmental laws can significantly degrade the intended “realistic training” these units receive. According to those officials, when commanders and trainers are required to deviate from original training plans and procedures in order to comply with various environmental laws, combat units may not receive training experiences that mirror situations they might experience in a wartime scenario. These officials acknowledged the difficulty in measuring the impact environmental restrictions have on training, but they said constant deviation from realistic training scenarios has the potential to create an ill-prepared force and could possibly leave combat units vulnerable once deployed for combat missions.

Use of Workarounds Allows DOD to Meet Training Requirements

Despite having to comply with environmental restrictions, DOD is able to meet its readiness and training requirements through adjustments or modifications to training activities, known as workarounds. Usually trainers and planners know in advance the environmental restrictions they are faced with prior to a training event and plan accordingly to ensure required training tasks are completed. For example, at Camp Pendleton, California, officials said that to protect San Diego fairy shrimp habitat and archaeological cultural sites, Marines plant flags to represent foxholes instead of digging foxholes on the beach. Marine Corps officials said this workaround allows them to meet its training requirement, but limits their ability to conduct realistic training. Similarly, to accomplish training requirements and to protect aquatic and bank-side habitat for an endangered salmon species, officials at the Yakima Training Center, Washington, said vehicle traffic is limited to the use of bridges instead of allowing units to drive through creeks which would better approximate actual battlefield conditions.

Officials acknowledged that complying with environmental laws can make it difficult at times to plan and conduct training events; however, these officials also acknowledged that military operations will always be subject to external restrictions whether units operate within the United States or abroad. For example, DOD officials said when units are deployed they may be restricted from damaging religious sites, such as churches or mosques, or may have to avoid dangerous operating areas like mine fields, so learning to deal with restrictions is standard operating procedure and the military has adapted to dealing with these requirements. In many cases, officials responsible for scheduling and facilitating training events incorporate environmental restrictions into planned training scenarios. For example, Fort Stewart, Fort Lewis, and Marine Corps Base Camp Pendleton officials said trainers instruct units to pretend restricted training areas are holy grounds, mine fields, or any other restricted area in theatre and advise them to avoid these areas. According to DOD officials, implementing these types of workarounds allows the department to accomplish its training requirements while ensuring natural resources are sustained and protected and offers an element of realism in terms of the need to avoid certain venues when units are actually deployed.

Readiness Data and Reports Did Not Confirm that Military Readiness Was Hindered

Readiness data we reviewed for active duty combat units did not confirm that military readiness was hindered because of restrictions imposed by various environmental laws. In order to determine whether combat units are capable and ready to deploy for wartime missions, DOD and the military services use their unit readiness reporting systems to, among

other things, report on whether a unit has received an adequate amount of training to perform its assigned mission prior to deployment. Two of the systems used to track unit readiness reporting are the Status of Resources and Training System, which is a DOD-wide readiness rating system, and the Army Readiness Management System. In the Status of Resources and Training System, if a unit is not adequately trained and is unable to perform its assigned mission, commanders record a less than satisfactory assessment score into the system and may include a brief summary in the “commanders comments” section within the system that explains why the unit is unable to perform its assigned mission.

Our review of these reports for fiscal year 2006 and fiscal year 2007, including a review of the written commanders comments for Army, Navy, and Marine Corps active duty combat units, revealed that when units had not received an adequate amount of training, it was for a variety of reasons, such as not having enough assigned personnel or equipment. However, environmental restrictions did not appear as reasons why units were not adequately trained. Although we did not independently review readiness data for Air Force units due to data availability and time constraints, officials responsible for managing and maintaining these data told us that environmental restrictions generally did not appear as reasons why units were not adequately trained.

DOD officials responsible for planning and facilitating DOD unit combat training at the installations we visited stated that a unit’s readiness is generally not affected by environmental restrictions imposed on the installations. According to some officials, environmental restrictions may in fact hinder a unit from receiving adequate training, but DOD’s readiness reporting system does not capture the ability of individual ranges to support training or the effects of endangered species and their habitat, wetlands, air quality, water quality, and other encroachment factors on range availability. According to one official responsible for managing data reported in the readiness system, there is no requirement to report environmental restrictions in the system, even though commanders have the option to do so. DOD officials said many commanders do not record environmental restrictions as a barrier to training because they use workarounds to ensure training tasks are accomplished, even if the environmental restriction caused them to alter or delay a training event.

OSD and Services Are Developing Systems to Measure the Effects of Encroachment

OSD and the services currently have efforts underway to develop systems to measure the effects encroachment factors, including environmental restrictions, have on an installation's ability to meet its training mission. For example, the Office of the Secretary of Defense for Personnel and Readiness has begun to develop a new functionality within its Defense Readiness Reporting System that would provide DOD leadership and outside stakeholders, such as Congress, a better understanding of how external factors, such as environmental laws, affect training activities and readiness. Additionally, over the last few years, the services have spearheaded separate initiatives to track and report the encroachment factors that are affecting training on their installations. OSD officials said they will use these systems as data feeds into the new functionality within the Defense Readiness Reporting System.³⁷

Defense Readiness Reporting System

DOD is currently working to update and improve its Defense Readiness Reporting System that will assess constraints a military range faces when facilitating training for combat units. According to DOD officials we met with who are responsible for the development, update, and implementation of the Defense Readiness Reporting System, this system is expected to soon have the capability to identify the extent to which encroachment factors affect a range's ability to support various operational capabilities, such as combat, combat support, and combat service support. Although this system is in early stages of development, DOD plans to pilot test this new functionality during calendar year 2008. According to DOD officials, there are still ongoing discussions with the services to solidify and agree on all the factors that will be measured. These officials told us they expect decisions to be finalized in the early part of fiscal year 2008, but at the time of this review OSD and the services had not come to a final agreement.

Army's Installation Status Report (Natural Infrastructure) and Encroachment Condition Module

Over the last few years, the Army has been working to introduce systems to report and track factors affecting training on its installations. The Army's Installation Status Report (Natural Infrastructure) is a new decision-support tool used by Army leadership to assess the capability of an installation's natural infrastructure to support mission requirements. In

³⁷Since 2003, we have recommended that DOD develop systems through which DOD and its outside stakeholders can determine how encroachment factors affect readiness activities at DOD training facilities. Although DOD and the services have not completed their efforts to develop and implement such systems, the results of this and our prior reviews indicate progress is being made to complete this effort. Consequently, we are not making a recommendation on this matter at this time.

addition, the Army has developed an Encroachment Condition Module that quantitatively evaluates the impact of eight encroachment factors—threatened and endangered species, critical habitat, cultural resource sites, wetlands, air quality regulations, Federal Aviation Administration regulations, noise restrictions, and frequency spectrum—in order to assess measurable impact to training and testing at the installation and range level.

Although the Army has made progress developing these systems, at the time of this review the Army was still in the process of field-testing these systems and thus had not finalized and released these systems throughout the Army. During discussions with multiple officials at the Army installations that we visited, concerns were expressed that some of the reports generated by the Installation Status Report (Natural Infrastructure) appear to exaggerate the factors affecting the installations' ability to support training requirements. In addition, these officials were also concerned that the data generated from the Encroachment Condition Module do not reflect the actual environmental restrictions placed on the installations, which appear to significantly limit the installations' ability to provide unit-level training. Some of these installation officials have also written memorandums expressing their concerns that the installation status report does not provide an accurate picture of the mission readiness of installations and suggested steps Army headquarters should take to ensure this system is more useful. On the basis of our review of summary data from the encroachment conditions module, we believe that discrepancies exist between the data on encroachment restrictions and the actual areas available for training at Fort Lewis, Washington, and Fort Stewart, Georgia. According to Army officials, at the time of our visits to these installations, the Army was in the process of working with installation officials to ensure that these data were accurate and current enough to enable decision makers to plan training events.

Navy's Encroachment Database

The Navy has an effort underway to develop a web-oriented installation and range encroachment database that will assist it in identifying how encroachment factors affect unit training on its training ranges across the United States. For example, in August 2006 the Navy completed the initial development of a Navy-wide encroachment database to include encroachment issues identified by installations, ranges, and commands throughout the Navy. The Navy intends to finalize database development and link this information to its established repositories in order to begin generating reports for Congress. The Navy expects to have a user-friendly database available for use on its installations and ranges by June 2008.

Marine Corp's Training and Range Encroachment Information System

The Marine Corp's Training and Range Encroachment Information System was developed as a part of an encroachment quantification study done at Marine Corps Base Camp Pendleton in 2003. This system is a tool intended to assess an installation's ability to support required training, rather than assess the readiness of an individual Marine or Marine unit going through the training. According to Marine Corps officials, this system represents a prototype solution for collecting and quantifying encroachment effects that has the potential to be applied to other Marine Corps ranges and bases. However, according to these officials, this system has not been fielded and implemented across the Marine Corps because of questions about the amount of resources that would be required. As a result, Marine Corps officials have stated that more work needs to be done before this system will be released.

Air Force's Natural Infrastructure Assessment Tool

In January 2008 the Air Force completed the development of its Natural Infrastructure Assessment Guide, which will provide Air Force leadership with a tool to manage the encroachment factors affecting its training ranges. This assessment tool will assist installation commanders in effectively managing their natural infrastructure, such as air space, through the identification of deficiencies and opportunities, correlated to affected operation, to enhance operational sustainability. This tool will also establish baseline information using a set of quantitative and qualitative measures that provide a comparison of needed resources to available resources, and will identify the incompatibilities and constraints on air, space, land, and water resources resulting from environmental encroachment pressures such as environmental restrictions.

DOD's Use of Exemptions Has Allowed Some Training Activities to Continue and Enabled Others to Avoid Potential Delays

DOD has used the exemptions from the Marine Mammal Protection Act and Migratory Bird Treaty Act to continue to conduct training activities that might otherwise have been prohibited, delayed, or canceled, and the Endangered Species Act exemptions have enabled DOD to avoid potential training delays by providing it greater autonomy in managing its training lands. The Navy has twice invoked exemptions from the Marine Mammal Protection Act to continue using mid-frequency active sonar in its training exercises that would otherwise have been prevented. DOD's exemption to the Migratory Bird Treaty Act eliminated the possibility of having to cancel military training exercises, such as Navy live-fire training exercises at the Farallon de Medinilla Target Range in the Pacific Ocean. The Endangered Species Act revisions provide that FWS consider the impact to national security when designating critical habitat on DOD lands and provide alternatives to critical habitat designation.

DOD's Marine Mammal Protection Act Exemption Has Twice Allowed the Navy to Continue Mid-Frequency Active Sonar Training Activities

Since 2006, the Navy has twice invoked its exemption from the Marine Mammal Protection Act to continue using mid-frequency active sonar technology in military training exercises, which would have otherwise been prevented by the law's protection of marine mammals, such as whales and dolphins that may be affected by the technology. In both cases, DOD granted the exemption after conferring with the Secretary of Commerce, upon a determination that the use of mid-frequency active sonar was necessary for national defense.

Mid-frequency active sonar is used by the Navy to detect hostile diesel-powered submarines used by the nation's adversaries. According to Navy officials, the use of mid-frequency active sonar is a vital component of its underwater submarine warfare training program. Without these exemptions the Navy would have been prevented from using sonar technology during its training exercises, potentially causing a readiness issue within the Navy. For example, during the 2006 multinational Rim of the Pacific training exercise, which was conducted near the Hawaiian Islands, the Navy was prohibited from using mid-frequency active sonar for 3 days because of an injunction imposed concerning the effects the sonar could have on the marine mammals. In June 2006, DOD granted the Navy a six-month exemption from the Marine Mammal Protection Act for all military readiness activities that use mid-frequency active sonar during major training exercises or within established DOD maritime ranges or operating areas. In January 2007, DOD granted a two-year exemption for these same activities. However, during both exemption periods, DOD was and is required to employ mitigation measures developed with and supported by the National Marine Fisheries Service. According to DOD officials, the two-year period provides the Navy the time needed to develop its environmental impact statements for ranges where mid-frequency sonar is used.

Although DOD granted the Navy an exemption to the Marine Mammal Protection Act to continue its training exercises, Navy officials told us that the primary reason it would have been prevented from using sonar technology was because it had not prepared an environmental impact statement for its training locations that use mid-frequency active sonar during training exercises. Under the National Environmental Policy Act of 1969 (NEPA), agencies evaluate the likely environmental effects of projects they are proposing using an environmental assessment or, if the projects likely would significantly affect the environment, a more detailed environmental impact statement. In addition, the Marine Mammal Protection Act requires consultation between DOD and the National

Marine Fisheries Service to determine the impact on marine mammals when conducting military readiness activities.

According to NRDC, an NGO that filed suit against the Navy to prevent it from using its sonar technology, the Navy failed to prepare an environmental impact statement and proper mitigation strategies in advance of using its sonar technology. NRDC is concerned that the use of mid-frequency active sonar has had a detrimental effect on marine mammals in the nation's oceans and waterways. Thus, it is the NRDC's view that until the Navy prepares the required environmental documentation and implements appropriate mitigation measures, these sonar activities should be stopped. The Navy has prepared notices of intent to prepare environmental impact statements for 12 ranges and operational areas. According to Navy officials, all 12 environmental impact statements will be completed, and the Navy is expected to be in compliance with the Marine Mammal Protection Act by the end of calendar year 2009.³⁸

³⁸ On January 3, 2008, in a lawsuit brought by NRDC against the Navy, the U.S. District Court for the Central District of California determined that the Navy's use of mid-frequency active sonar was not in compliance with CZMA or NEPA and issued an injunction against the Navy's planned training exercises. On January 10, 2008, the Secretary of the Navy sought Council on Environmental Quality approval of an exception to the procedural provisions of NEPA in light of emergency circumstances requiring the Navy to use mid-frequency active sonar during training exercises without following the normal procedures in NEPA regulations. On January 15, 2008, the Chairman of the Council on Environmental Quality approved the Navy's proposed alternative arrangements. On January 11, 2008, the Secretary of Commerce made a written request that the Navy be exempted from compliance with the Coastal Zone Management Act in its use of mid-frequency active sonar during Southern California Operating Area Composite Training Unit Exercises and Joint Task Force Exercises. On January 16, 2008, the President invoked an exemption to CZMA by determining that the Southern California Operating Area Composite Training Unit Exercises and Joint Task Force Exercises, including the use of mid-frequency active sonar in these exercises, are in the paramount interest of the United States. On February 4, 2008, the U.S. District Court for the Central District of California held the Navy is not exempted from compliance with NEPA nor from the court's injunction because the Council on Environmental Quality's approval of emergency alternative arrangements was beyond the scope of the regulation and invalid, given the court's finding that there is no emergency. The court also expressed concerns about the constitutionality of the President's exemption of the Navy from the requirements of CZMA but chose not to resolve that issue. On February 29, 2008, the U.S. Court of Appeals for the Ninth Circuit issued an opinion upholding the district court's injunction, concluding that the district court neither relied on erroneous legal premises nor abused its discretion.

DOD Used the Migratory Bird Treaty Act Exemption to Help the Navy Accomplish Live-Fire Training

DOD's exemption to the Migratory Bird Treaty Act authorizing the incidental taking of migratory birds during military readiness activities eliminated the possibility of having to delay or cancel military training exercises. In response to litigation in 2000 and 2002, DOD became concerned that environmental advocates could initiate further litigation against the department, causing delays or cancellation of future training activities. For example, in March 2002, in response to a lawsuit brought by the Center for Biological Diversity, a federal district court ruled that Navy training exercises at the Farallon de Medinilla Target Range within the Mariana Islands in the Pacific Ocean, which resulted in the incidental taking of migratory birds, violated the Migratory Bird Treaty Act.

The 2003 enactment of DOD's exemption changed the Migratory Bird Treaty Act to allow DOD to conduct military readiness exercises that may result in incidental takings of migratory birds without violating the act. DOD officials we spoke to told us that the exemption has not affected how training activities are conducted; rather, it codified and clarified how the act would be applied to military training missions, and it enabled DOD to avoid potential legal action that could have significantly affected training and readiness exercises at Farallon de Medinilla and other DOD installations. According to officials we met with during our visits to other installations with migratory bird populations, training activities at those locations generally do not affect migratory birds.

Endangered Species Act Exemption Provides DOD More Autonomy over the Management of Its Training Lands

The Endangered Species Act exemption has enabled DOD to avoid potential training delays by providing it greater autonomy in managing its training lands. The exemption, enacted in the fiscal year 2004 defense authorization act, provides DOD two means of avoiding critical habitat for threatened or endangered species designated on its lands by the FWS. One method of avoiding critical habitat designation for the endangered or threatened species found on its land is through the use of an approved integrated natural resources management plan,³⁹ which the FWS or the National Marine Fisheries Service agrees provides a benefit to the species. According to DOD officials, these management plans provide it with the flexibility needed to perform readiness activities while

³⁹The Sikes Act requires every DOD installation with significant natural resources to develop Integrated Natural Resources Management Plans to manage the natural resources located on its lands. These management plans lay out a variety of management strategies and steps installations will use to ensure that specific natural resources, such as endangered species and critical habitat, are protected and preserved on the installations.

simultaneously protecting the natural resources located on its installations. Secondly, in a case where critical habitat designation is proposed on a military installation, DOD can request the Secretary of the Interior take into consideration whether national security concerns outweigh the benefits of the designation.

Although FWS officials stated that these exemptions codified their practice of generally not designating critical habitat on military lands when the lands were managed under appropriate conservation plan, DOD officials believed the department needed these exemptions to avoid future designations that could restrict its training lands and cause potential delays in training while the required administrative consultations with FWS are completed. According to DOD officials, not having critical habitat designated for endangered or threatened species found on military lands gives DOD more flexibility and greater autonomy over the management of its lands used for its training activities. However, according to FWS officials, critical habitat designations would only require an additional level of consultation, which would have had very minimal, if any, effect on DOD's ability to use its lands for training purposes. DOD officials said that the increased level of consultation required between the department and outside stakeholders, such as the FWS, would take away the time and resources required to plan and execute its training activities. Furthermore, according to DOD officials, growth in endangered species populations on some installations has increased the challenges they face in completing their required training activities while simultaneously protecting the species and their habitats. In addition, some range managers and trainers at installations we visited said that they believe that designating critical habitat on military lands could require them to avoid using critical habitat areas, which would take away potentially valuable training areas. However, now that DOD has the authority to use its approved integrated natural resources management plans, which are ultimately approved by the FWS, in lieu of critical habitat designation, trainers and range managers feel less restricted from using their training ranges.

Endangered Species and Migratory Bird Act Exemptions Have Not Adversely Affected the Environment, and the Effect of the Marine Mammal Protection Act Exemption Has Not Been Determined

On the basis of meetings with officials within and outside DOD and visits to 17 training ranges, we found no instances where DOD's use of exemptions from the Endangered Species Act or Migratory Bird Treaty Act has adversely affected the environment; however, the impact of the Marine Mammal Protection Act exemption has not yet been determined. We found no instances where DOD's use of the Endangered Species Act exemption has negatively affected populations of endangered or threatened species. Moreover, the services employ a variety of measures and conservation activities to mitigate the effects of training activities on endangered species, some of which have helped to increase the populations of certain endangered species. However, NGO officials we spoke with were concerned that DOD's use of its integrated natural resources management plans in lieu of critical habitat designations may weaken oversight of endangered species found on military lands. Similarly, we found no instances where DOD's use of the Migratory Bird Treaty Act exemption has significantly affected the populations of migratory birds. However, the overall effect of the Navy's use of mid-frequency active sonar on marine mammals protected under the Marine Mammal Protection Act is unclear and is still being studied.

DOD's Use of the Endangered Species Act Exemptions Have Not Adversely Affected Species Populations

DOD, federal regulatory agency, and NGO officials, and officials at the military training ranges we visited said that there were no instances where DOD's use of the Endangered Species Act exemptions have adversely affected the populations of endangered or threatened species. Moreover, the services employ a variety of measures and conservation activities to mitigate the effects of their training activities on endangered species populations on their lands. We also found instances where DOD environmental stewardship of its natural resources have achieved some positive results with regard to increases in the population of certain endangered species. In addition, FWS officials told us that DOD has taken positive steps to manage and preserve its natural resources and provided several examples of DOD's proactive steps to manage threatened or candidate species.

Services Employ Measures to Mitigate Effects of Training on Endangered Species

The services have taken steps on their installations to minimize the effects of their training activities on their endangered species populations, as the following examples illustrate.

- At Camp Lejeune, North Carolina, nests for the threatened green sea turtle and Atlantic loggerhead turtle are relocated away from training beaches by Camp Lejeune environmental management personnel.

DOD's Stewardship of Natural Resources Has Achieved Some Positive Results

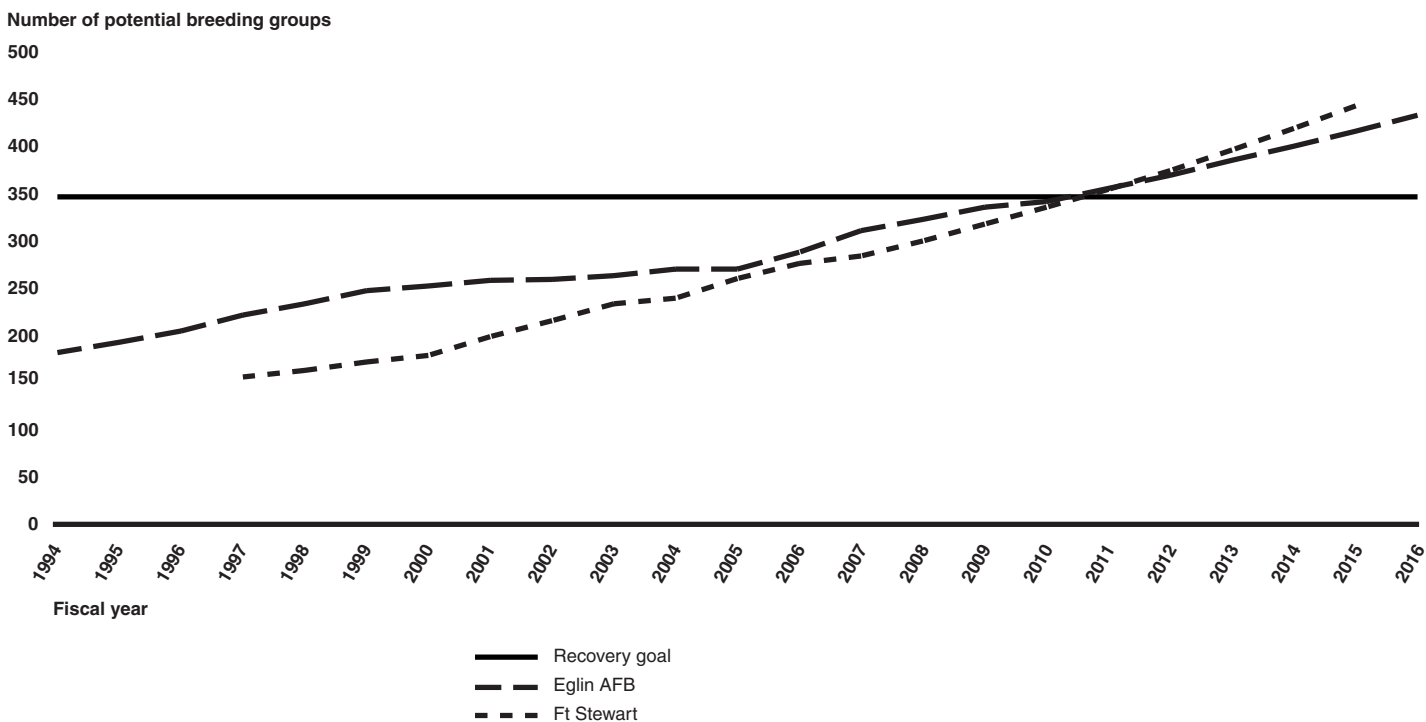
- At Yakima Training Center, Washington, endangered fish species are protected by the installation declaring aquatic and riparian habitat off limits to all but foot traffic except at hardened crossings, such as bridges.
- At the Barry M. Goldwater Range, Arizona, range officials employ spotters to ensure that resident endangered Sonoran pronghorn are not present in munitions impact areas prior to exercises.

DOD's management of its natural resources has achieved some positive results with increases in the population of certain endangered species. At five of the installations we visited, we were provided data that showed an increase in the populations of three endangered species, as the following examples illustrate.

- Red-Cockaded Woodpecker Since the mid-1990s, the red-cockaded woodpecker populations at Fort Stewart, Georgia, and Eglin Air Force Base, Florida, have increased. In addition, Fort Stewart has served as a source of red-cockaded woodpeckers for repopulation efforts on nonmilitary lands. Figure 2 shows trend data and projected increases in red-cockaded woodpecker potential breeding groups⁴⁰ from calendar year 1994 through calendar year 2016 for Fort Stewart and Eglin Air Force Base. On the basis of the data, Fort Stewart and Eglin Air Force Base are both projected to meet their recovery goals of 350 potential breeding groups by 2011.

⁴⁰ According to DOD, a breeding group consists of a monogamous breeding pair and may include up to four males.

Figure 2: Increase in Red-Cockaded Woodpecker Potential Breeding Groups at Fort Stewart and Eglin Air Force Base (1994 through 2016)



Source: GAO's analysis of Army and Air Force data.

- Loggerhead Shrike At Naval Base Coronado, San Clemente Island, California, the Navy, in partnership with FWS and the San Diego Zoo, has developed a captive breeding program that has increased the population of the Loggerhead Shrike, an endangered bird species, on San Clemente Island. This endangered bird population has increased from approximately 18 in 2000 to more than 88 in 2007 due partly to this conservation measure. According to the environmental planner for San Clemente Island, approximately 60 birds are retained for breeding purposes, while all other birds are released once it is determined that they can survive in the wild. Figure 3 shows a Loggerhead Shrike captive breeding facility.

Figure 3: The Loggerhead Shrike Captive Breeding Facility at Naval Base Coronado, San Clemente Island, California



Source: GAO.

- Sonoran Pronghorn According to data from the Arizona Game and Fish Department provided to us by Air Force officials, there were 68 Sonoran pronghorn, an endangered species, on the Barry M. Goldwater Range as of December 2006, up from an estimated 58 pronghorn in 2004. Air Force officials also provided us with information on pronghorn recovery efforts, which include a semicaptive breeding program located at the Cabeza Prieta National Wildlife Refuge. Air Force officials told us that semicaptive breeding is an important component of their recovery effort. Officials said they plan to release up to 20 captivity-bred animals annually beginning in 2008. Air Force officials told us that the creation of artificial forage enhancement plots are a key component in enhancing pronghorn survivability during periods of drought. Additionally, these officials said they locate these plots away from target areas to minimize the impact of training activities on the pronghorn population.

DOD's Proactive Management of Threatened Species and Species Being Considered for Protection

FWS officials told us that DOD has taken positive steps to manage and preserve its natural resources and has been proactive in the management of its threatened species and species being considered for protection under the Endangered Species Act, as the following examples illustrate.

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- Fort Carson, Colorado, provided a dedicated area for the threatened Greenback Cutthroat Trout that affords eggs for restoration efforts, opportunities for research, and recreational fishing opportunities for soldiers. In addition, Fort Carson participated in and funded research on American peregrine falcons (a recovered species) and threatened Mexican spotted owls that seasonally use the installation.
 - Fort Wainwright, Alaska, worked to identify areas where the installation lacked natural resource data (e.g. fish species abundance and diversity in streams and spawning areas), and with assistance from the FWS, then linked projects to achieve its goal of collecting the needed resource data.
 - The U.S. Air Force Academy, Colorado, holds most of the remaining Arkansas River drainage population of the threatened Preble's Meadow Jumping Mouse. The Academy is represented on the recovery team, has funded tasks identified in the recovery team draft plan, and has conducted and funded research on the monitoring of habitat and populations.

NGOs Have Expressed Concerns about Oversight of Endangered Species on Military Lands

Although the NGOs we spoke with varied in their opinions about the effectiveness of DOD's use of integrated natural resources management plans in lieu of critical habitat designations, all of the officials we spoke with were concerned about the extent to which the FWS would be able to exercise its regulatory authority under the Endangered Species Act, thus weakening its oversight of the management, protection, and preservation of endangered species found on military lands. Furthermore, officials from these organizations expressed concerns that the exemption could safeguard DOD from potential litigation involving critical habitat designation and lessens the public's ability to comment on how DOD plans to manage the endangered species located on its installations.

DOD installation officials responsible for developing the department's natural resources management plans acknowledged changes in the public comment process from the one traditionally used when a critical habitat designation is proposed. These officials also stated that they publicly announce the development or revision of these management plans, notify local conservation groups of the development or revision of the management plans to ensure their views are taken into consideration during the process, and take all public comments under consideration when finalizing the management plans.

Officials from various NGOs had differing opinions on DOD's use of its integrated natural resources management plans to protect and preserve endangered species on military land, and some were concerned that DOD's use of these plans in lieu of critical habitat designation may weaken the oversight FWS has under the Endangered Species Act, as the following examples illustrate.

- Officials of the Public Employees for Environmental Responsibility (PEER)—a national nonprofit alliance of federal, state, and resource employees—and the Endangered Species Coalition—a nonpartisan organization focused on endangered species issues—were generally satisfied with DOD's efforts to protect endangered species on its installations, and stated that DOD's implementation of its integrated natural resources management plans appeared to be an effective tool for managing its natural resources.
- Officials of the Center for Biological Diversity—a nonprofit organization focusing on species and habitat conservation—questioned whether allowing DOD to take the lead on endangered species management on its own lands was the best strategy. One official from the Center for Biological Diversity stated that, unlike critical habitat designation, integrated natural resources management plans would only provide a limited benefit to endangered species and implementation of these plans vary by installation. Additionally, this official stated that the formal process of designating critical habitat provides more comprehensive protection and benefit to endangered species.
- Officials of NRDC stated that DOD's management plans are not an adequate substitute for critical habitat designation because the quality of the plans varies, the successful implementation of the plan is largely dependent on an installation's leadership, and there are no quantifiable, measurable goals that can be enforced.

DOD officials told us that they view integrated natural resources management plans as a tool focused on the management of an ecosystem as opposed to a tool for managing individual species. In addition, according to DOD officials, these management plans are a more cost effective way to manage an installation's natural resources and reduce the likelihood of a significant adverse impact on species. None of the NGO officials we interviewed could provide us with data to illustrate that DOD's use of an integrated natural resources management plan has caused an endangered species population to decline or harmed their habitat.

Use of the Migratory Bird Treaty Act Exemption Has Not Significantly Affected Bird Populations

DOD, federal regulatory agencies, and NGO officials, and officials at the military training ranges we visited all said that there were no instances where DOD's use of the Migratory Bird Treaty Act exemption has significantly affected the populations of migratory birds. Since February 2007, when FWS issued the final rule authorizing incidental takings of migratory birds during military readiness activities, officials from DOD nor FWS were not able to provide instances where a military training activity was assessed and determined to have a significant adverse effect on a migratory bird population. In addition, DOD employs various measures to mitigate the potential impact of its training activities on migratory bird populations. For example, Navy officials told us that an additional zone was established in which only inert munitions may be used, which is located directly below a no bomb zone at Farallon de Medinilla Target Range within the Mariana Islands, as an additional mitigation measure for the island's migratory bird population. In addition, at Naval Air Station Fallon, Nevada, aircraft maintain a minimum altitude of 3,000 feet when flying above the Stillwater National Wildlife Refuge to avoid migratory bird populations.

Effects of Mid-Frequency Active Sonar on Marine Mammals Are Unclear and Are Still Being Studied

The effects of the Navy's use of mid-frequency active sonar on marine mammals protected under the Marine Mammal Protection Act are unclear and are still being studied. The Navy, in conjunction with external researchers, is conducting studies in an attempt to determine the effects mid-frequency active sonar has on marine mammals. According to documents provided to us by Navy officials, differing interpretations of scientific studies on behavioral changes among marine mammal populations have complicated compliance with the Marine Mammal Protection Act. Thus, additional coordination between the Navy and the National Marine Fisheries Service is required to resolve the regulatory uncertainty as to the "biological significance" of the effects of mid-frequency active sonar on marine mammals. The Navy employs mitigation measures, such as establishing marine mammal lookouts, ensuring there are no marine mammals within a certain radius of ships using sonar, and reducing the power of the ships' sonar systems to lessen the possible impact mid-frequency active sonar may have on the marine mammal populations. The Navy has also begun reporting stranded marine mammals to the National Marine Fisheries Service. National Marine Fisheries Service officials have characterized their working relationship with the Navy as collaborative and constructive in that they have the opportunity to review and comment on the effectiveness of the Navy's mitigation measures, such as the adequacy of the training that marine mammal lookouts receive. These measures are in effect during the 2-year period

beginning in January 2007 in which mid-frequency active sonar activities are exempt from the Marine Mammal Protection Act.

In its February 2008 report to Congress,⁴¹ the Navy stated that in 2007 it had completed 12 major training exercises employing mid-frequency active sonar and found no marine animals within the range of injury (10 meters) of any transmitting vessel during these exercises. The Navy requires that units participating in these major exercises report the number of marine mammals sighted while these exercises are conducted. If a marine mammal is sighted, participating ships, submarines, and aircraft are required to report the date, time, distance from unit, and action taken by the unit, if any. On the basis of the results of the after-action reports for these exercises, the Navy concluded that the various training activities did not kill or injure any marine mammals. Although the Navy acknowledges that it is not possible to account for the mammals that were not observed, it also noted that the low number of marine mammal sightings qualitatively indicates that the likelihood of an effect on the population level of any marine mammal species is further reduced.

However, NGO officials have told us they believe that the Navy's mitigation measures are insufficient, and they do not believe that the Navy has adequately quantified the impact of prohibitions on sonar on its ability to train. Additionally, according to NRDC representatives, a report completed in 2004 by a scientific committee of leading whale biologists established by the International Whaling Commission, has convincing and overwhelming results linking mid-frequency active sonar with the deaths of beaked whales. These officials are also uncertain whether the Navy would be in compliance with the Marine Mammal Protection Act when the exemption expires in January 2009. Further, these NGO representatives acknowledged that the nature of certain marine mammal populations creates difficulties in establishing a scientific basis for the effects of mid-frequency active sonar on marine mammals. DOD acknowledges that, under certain circumstances and conditions, exposure to mid-frequency active sonar may have an effect upon certain species, but the causal connection between whale strandings and exposure to mid-frequency active sonar is not known.

⁴¹Department of the Navy, *Activities Taken Under the Authority of the National Defense Exemption Under the Marine Mammal Protection Act Issued on 23 January 2007* (Washington, D.C.: February 2008).

DOD Has Not Presented a Sound Business Case for the Three Proposed Exemptions

DOD has not presented a sound business case demonstrating a need for the proposed exemptions from the Clean Air Act, RCRA, and CERCLA to help achieve its training and readiness requirements. DOD has outlined some anticipated benefits of the proposed exemptions and has provided Congress with a description of the features and scope of its Readiness and Range Preservation Initiative, but the department has not made a sound business case testing these assertions or provided any specific instances in which the movement of forces or equipment, training on an operational range, or its use of munitions on an operational range has been hindered by the requirements of the Clean Air Act, RCRA, or CERCLA, respectively. Therefore, Congress lacks a sound basis for assessing the need to enact the three remaining proposed exemptions.

DOD Has Presented Some Elements of a Business Case but Has Not Demonstrated a Need for the Remaining Exemptions

DOD has not presented a sound business case demonstrating a need for the remaining three exemptions proposed in its Readiness and Range Preservation Initiative. In order to advise decision makers on a proposed project, policy or program, best practices and our prior work recommend that agencies develop a business case whereby they can assess and demonstrate the viability of proposed initiatives. A business case is a substantiated argument that includes, among other things, the problem or situation addressed by the proposal, the features and scope of the proposed initiative, the anticipated outcomes and benefits, the options considered and the rationale for choosing the solution proposed, the expected costs, and the expected risks associated with the proposal's implementation. DOD presented the features and scope of the three remaining Readiness and Range Preservation Initiative provisions in proposed language for the fiscal year 2008 defense authorization bill.⁴² DOD officials also outlined some possible benefits of the proposed exemptions. For example, in its 2006 annual sustainable ranges report,⁴³ DOD stated that without these additional exemptions the department was vulnerable to legal challenges that could threaten its ability to use operational ranges for readiness training and testing. DOD officials also stated that some possible benefits of the proposed exemptions include

⁴²The Senate Armed Services Committee considered the three exemption provisions for inclusion in the Senate version of the fiscal year 2008 defense authorization bill but did not include the provisions in the final version of the bill voted on by the Senate. S. 567, 110th Cong. § § 314-316 (2007).

⁴³Department of Defense, Office of the Under Secretary of Defense for Personnel and Readiness, *Report to Congress on Sustainable Ranges* (Washington, D.C.: February 2006).

Proposed Clean Air Act Exemption

facilitating (1) the movement of forces and equipment, (2) training on an operational range, and (3) the use of munitions on an operational range. However, DOD has not provided any of the other elements of a sound business case.

According to DOD officials, the proposed exemption from requirements of the Clean Air Act would provide the department flexibility in replacing or realigning forces and equipment in nonattainment areas,⁴⁴ which do not meet certain EPA air quality standards, but they have not provided evidence to support the need for the exemption. Moreover, DOD could not cite any case where Clean Air Act requirements prohibited the movement of troops or equipment into nonattainment areas. OSD's Office of General Counsel officials told us that the Clean Air Act provision grew out of the 1995 base realignment and closure round, when the movement of aircraft into these areas became a problem. For the 2005 base closure round, OSD asked the services if moving activities into nonattainment areas would be an issue, and the answer was that it would not be. In its 2006 report on sustainable ranges, DOD stated that, while the Clean Air Act's general conformity requirement had the potential to threaten the deployment of new weapon systems, the requirement had not yet prevented any military readiness activities.

Officials of state and local agencies, and NGOs, such as the Center for Public Environmental Oversight (CPEO),⁴⁵ NRDC, and PEER, have expressed concern that the proposed exemptions could increase air pollution and potentially result in greater contamination, higher cleanup costs, and a threat to human health. Opponents of DOD's proposed exemptions from the Clean Air Act include state and local air pollution control program officials, state environmental commissioners, state attorneys general, county and municipal governments, and environmental advocates. They contended that granting the exemption could increase air pollution, posing a threat to human health. Opponents also claimed that the proposed exemption is unnecessary as the Clean Air Act already contains a provision that would allow DOD to request a case-by-case

⁴⁴ A nonattainment area is defined as a locality where air pollution levels persistently exceed national air quality standards.

⁴⁵ CPEO promotes and facilitates public participation in the oversight of environmental activities at federal facilities and private Superfund sites. The Center also educates public stakeholders on both the process and technologies for cleanup and environmental protection.

exemption if necessary, which DOD has never invoked. In addition, an EPA official we spoke with expressed similar concerns about the proposed Clean Air Act exemption. He also stated that because DOD has an extensive planning process, and readiness activities are generally planned ahead, DOD should have time to mitigate the emissions, or work with the states to establish a budget within the states' implementation plans so that an exemption to the Clean Air Act would not be needed.

Proposed RCRA Exemption

According to DOD's 2006 sustainable ranges report, existing ambiguity over whether the RCRA definition of "solid waste" is applicable to military munitions located on operational ranges had generated litigation by private plaintiffs seeking to curtail or terminate munitions-related training at operational ranges. The report also asserted that future litigation of this nature, if successful, could force remediation at operational ranges, effectively precluding live-fire training. However, DOD was not able to provide any examples of where a private citizen's RCRA lawsuit had affected training on an operational range. Although live-fire training restrictions have been imposed at the Eagle River Flats Impact Area at Fort Richardson, Alaska, the restrictions were not the result of any litigation. The Army imposed the firing restrictions in 1991 following completion of an environmental assessment that established a link between firing munitions containing white phosphorus and waterfowl mortality at Eagle River Flats. We discussed DOD's concerns about RCRA and the definition of "solid waste" with officials of EPA's Office of Federal Facilities Enforcement and Office of Federal Facilities and Restoration. These officials told us that, to address DOD's concerns, EPA developed the 1997 Military Munitions Rule, which states that military munitions are not considered to be solid waste when they are used for their intended purpose on an operational range. The EPA officials also said that to date they have never required DOD to clean up an operational range, unless contamination is migrating off the range, which could occur through polluted groundwater.

With regard to the proposed exemption from RCRA, opponents have included state attorneys general and NGOs such as CPEO, NRDC, and PEER. They have asserted that granting DOD the exemptions could weaken federal and state oversight. Specifically, in written comments to the Office of Management and Budget on DOD's 2004 legislative proposals for the National Defense Authorization Act, EPA stated that it was concerned that the exemptions would result in states' oversight agencies having to wait for human health and environmental effects to occur beyond the boundaries of the operational range before taking action. This delay could increase the costs and time to respond. Other organizations

expressed similar concerns about the exemptions preempting federal or state authority. The opponents also noted that the exemptions were not needed, as RCRA contains national security provisions allowing the President to exempt DOD facilities from any statutory or regulatory authority on a case-by-case basis. However, DOD has not invoked this case-by-case exemption for training or readiness-related activities.⁴⁶

Proposed CERCLA Exemption

DOD officials said the department is concerned that the firing of munitions on operational ranges could be considered a “release” under CERCLA, which could then trigger CERCLA requirements that would require removal or remedial actions on operational ranges. However, DOD officials could not provide any examples of when this had actually occurred. On the contrary, DOD officials told us that EPA and the states generally do not seek to regulate the use of munitions on operational ranges under RCRA or CERCLA. Cognizant EPA officials also told us that EPA generally did not impose regulatory requirements on operational ranges. Further, EPA, in written comments to the Office of Management and Budget on DOD’s 2004 legislative proposals for the National Defense Authorization Act, stated that it had been judicious in the use of the various authorities it has over operational ranges.

Opponents from states and NGOs such as CPEO, NRDC, and PEER, have similar concerns with DOD’s proposed exemption from CERCLA as they do with the RCRA exemption discussed previously. They contend that granting DOD the exemptions could weaken federal and state oversight and may delay any remediation action. They also note that the proposed exemption is not needed, as CERCLA contains a case-by-case exemption, which has not been invoked by DOD. In addition, similar concerns were expressed by EPA in its written comments to the Office of Management and Budget on DOD’s 2004 legislative proposals for the National Defense Authorization Act.

⁴⁶In 1995, DOD was granted a national security exemption to RCRA to exempt the Air Force’s operating location near Groom Lake, Nevada, from any provision respecting control and abatement of solid or hazardous waste that would require the disclosure of classified information to any unauthorized person. This exemption was renewed annually during its lifetime. The last exemption expired September 12, 2004, and has not been renewed since that time.

Congress Lacks a Sound Basis for Assessing the Need to Enact the Three Proposed Exemptions

Because DOD has not provided any specific examples to support assertions that its training activities have been hindered by the requirements of the Clean Air Act, RCRA, or CERCLA, Congress lacks a sound basis for assessing the need to enact these three remaining exemptions. Also, DOD has not demonstrated that it considered any other options that could provide the benefits it desires. Nor has the department provided any data related to the expected costs and risks—financial, environmental, or otherwise—of the proposed exemptions. Similarly, DOD has not demonstrated the cost of any workarounds necessitated by the need to comply with the Clean Air Act, RCRA, or CERCLA, and it has thus far not been able to show any risks to military readiness or national security if the exemptions are not granted. Until DOD develops a substantiated argument in support of its proposed exemptions from the Clean Air Act, RCRA, and CERCLA, it will have little on which to base these requests.

Conclusions

DOD's commitment to being a good neighbor to the communities where many servicemembers and their families live, the desire to avoid litigation, and the need to maintain its training areas in good condition provide DOD with incentives to be a good environmental steward. In addition, there is little evidence to suggest that the exemptions to environmental laws that DOD has already been granted have had adverse consequences for animal species or their habitat on military installations. Nevertheless, there is also little evidence to support the position that providing DOD additional environmental exemptions, such as those that have been proposed from provisions of the Clean Air Act, RCRA, and CERCLA, would benefit DOD training activities or improve military readiness. Without a sound business case that demonstrates the benefits and adverse effects on training and readiness, costs, and risk associated with the proposed exemptions, DOD will have little on which to base any further requests, and Congress will have difficulty determining whether additional exemptions from environmental laws are warranted.

Recommendation for Executive Action

Should DOD plan to pursue exemptions from the Clean Air Act, RCRA, CERCLA, or other environmental laws in the future, we recommend that the Secretary of Defense direct the Deputy Under Secretary of Defense for Installations and Environment and the Deputy Under Secretary of Defense for Readiness to jointly develop a sound business case that includes detailed qualitative and quantitative analyses assessing the associated benefits, costs, and risks of the proposed exemptions from environmental laws.

Agency Comments and Our Evaluation

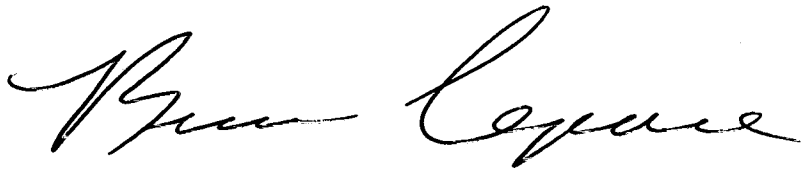
In written comments on a draft of this report, the Principal Deputy within the Office of the Under Secretary of Defense for Personnel and Readiness partially concurred with our recommendation, agreeing that a sound business case with good qualitative and quantitative analysis should be developed in association with future environmental provisions. However, DOD believes that past provisions involving clarifications to environmental laws were largely supported with the rationale and supporting information necessary to constitute a sound business case and does not accept the premise that the readiness and training imperatives or associated risks were not conveyed to the extent feasible for the Clean Air Act, RCRA, and CERCLA provisions. As our report clearly stated, DOD has not provided any specific examples to support its assertions that its training activities have been hindered by the requirements of the Clean Air Act, RCRA, or CERCLA. Also, DOD has not demonstrated that it considered any other options that could provide the benefits it desires. Nor has the department provided any data related to the expected costs and risks—financial, environmental, or otherwise—of the proposed exemptions. Our report does not discuss the rationale and information used to support past provisions. We continue to believe that DOD has not provided adequate support for its assertion that its training activities have been hindered by the requirements of the Clean Air Act, RCRA, and CERCLA. We stand by our recommendation that DOD needs to present a sound business case, including associated benefits, costs, and risks should it pursue future exemptions from these or other environmental laws.

DOD strongly disagreed with our use of the term “exemptions” as applied to its Readiness and Range Preservation Initiative, which it believes unnecessarily reinforces the perception that DOD has sought to avoid its environmental stewardship responsibilities. First, the term “exemption” is not defined in the body of environmental law relevant to this report. Our intent is to use a single term throughout the report for consistency and readability, although we recognize that each of the Readiness and Range Preservation Initiative provisions affect change by various means in various environmental laws. We describe each of those provisions on pages 2 and 3, pages 13 through 17, and in footnotes 6 through 12. Second, our report acknowledges that DOD’s environmental stewardship of its natural resources has achieved positive results and that it has been proactive in its management of endangered and threatened species.

DOD’s comments are reprinted in appendix II. DOD also provided technical comments, which we have incorporated into the report as appropriate.

We are sending copies of this report to the appropriate congressional committees. We are also sending copies to the Secretaries of Defense, Commerce, and the Interior; the Administrator of the Environmental Protection Agency; the Secretaries of the Army, the Navy, and the Air Force; the Commandant of the Marine Corps; and the Director, Office of Management and Budget. Copies will be made available to others upon request. In addition, this report will be available at no charge on our Web site at <http://www.gao.gov>.

If you or your staff have any questions regarding this report, please contact me at (202) 512-4523 or leporeb@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix III.

A handwritten signature in black ink, reading "Brian Lepore". The signature is fluid and cursive, with the first name "Brian" and last name "Lepore" clearly distinguishable.

Brian J. Lepore, Director
Defense Capabilities and Management

Appendix I: Scope and Methodology

To determine the effects, if any, of environmental laws and the Department of Defense's (DOD) use of exemptions to the Migratory Bird Treaty Act,¹ the Marine Mammal Protection Act,² and the Endangered Species Act³ on training activities and military readiness, we judgmentally selected and visited 17 military training locations throughout the continental United States, which included training sites from each military service component, to directly observe the effects of environmental laws and DOD's use of exemptions on training activities, military readiness, and the environment. These locations included Aberdeen Proving Ground, Maryland; Fort Lewis, Washington; Fort Stewart, Georgia; Naval Station Norfolk, Naval Air Station Oceana, and Dam Neck Annex, Virginia; Naval Air Station Fallon, Nevada; Fort Irwin, Naval Base Coronado, Naval Air Station North Island, Naval Auxiliary Landing Field San Clemente Island, and Marine Corps Base Camp Pendleton, California; Marine Corps Base Camp Lejeune, North Carolina; Avon Park Air Force Range and Eglin Air Force Base, Florida; and Luke Air Force Base and Barry M. Goldwater Range, Arizona. These installations were identified and selected based on our previous work involving some installations experiencing encroachment and sustainable training range issues. DOD concurred that the installations we selected continue to have problems in this area and stated that these locations would provide an important perspective of some of the challenges DOD faces to comply with environmental laws. Because the installations were judgmentally selected, the specific challenges faced at these selected locations can not be generalized across all of DOD. We obtained documents and reports describing the effects of environmental laws and exemptions on training and readiness and the need for workarounds to meet training requirements from DOD officials responsible for managing military training. We compared and contrasted data on training requirements with actual training activities to identify examples—in terms of the number of training days, types of training activities, unit readiness ratings, and costs—where training was affected by environmental requirements and DOD's use of environmental exemptions. We also met with service officials responsible for managing readiness data for each service. These officials provided us with unit readiness data for fiscal years 2006 and 2007, which included some commander comment summaries describing, when applicable, why a unit

¹16 U.S.C. § 703.

²16 U.S.C. §§ 1362, 1371.

³16 U.S.C. § 1533.

had not met its unit training requirements. Our review of these data allowed us to assess whether environmental restrictions imposed on DOD installations had an impact on unit readiness. Furthermore, we conducted literature searches, and reviewed studies completed by other audit agencies and research companies such as the Congressional Research Service, the Center for Naval Analysis, and the RAND Corporation, to review previous findings and conclusions of how environmental laws may have affected military training and readiness. In addition, we met with officials responsible for planning, managing, and executing unit training to gain an understanding of how these officials assisted military units to meet training requirements while addressing environmental laws. We also met with officials from the Office of the Secretary of Defense (OSD) and headquarters officials from each of the military services to obtain their perspectives on the effects of environmental laws and the use of environmental exemptions on military training activities and readiness.

To determine the effects, if any, of DOD's use of exemptions from the Migratory Bird Treaty Act, the Marine Mammal Protection Act, and the Endangered Species Act on the environment, we visited the 17 installations mentioned, reviewed related reports and studies, and examined some installations' integrated natural resources management plans to determine how natural resources, such as migratory birds, marine mammals, and endangered species and their habitats are protected on DOD lands during military training exercises. We also met with officials from other federal regulatory agencies, such as the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the U.S. Environmental Protection Agency (EPA), to determine how these regulatory agencies were overseeing and managing natural resource conservation activities conducted on military training areas and to obtain their perspective of how well DOD is doing in protecting its natural resources. We also met with officials from OSD and service offices, such as officials from the Office of the Under Secretary of Defense for Personnel and Readiness; the Office of the Deputy Under Secretary of Defense for Installations and Environment; the Office of the General Counsel for Environment and Installations, OSD; the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health; the Office of the Assistant Secretary of the Navy for Installations and Environment; the Operational Environmental Readiness and Planning Branch and the Training Ranges and Fleet Readiness Branch, Chief of Naval Operations; the Environmental Management Program Office, Headquarters U.S. Marine Corps; the Deputy Assistant Secretary of the Air Force for Environment, Safety, and Occupational Health; the Air Force Center for Engineering and the Environment; and the Ranges and Air Space Division, Headquarters U.S.

Air Force. During these meetings, we discussed the statutory environmental requirements DOD must follow when conducting military training activities at its installations and training areas. To obtain a balanced perspective on the progress DOD has achieved in managing natural resources on its lands, we met with officials from nongovernmental organizations, such as the Natural Resources Defense Council (NRDC), Public Employees for Environmental Responsibility (PEER), the Center for Biological Diversity, the Center for Public Environmental Oversight, the Endangered Species Coalition, and the RAND Corporation. These officials provided us with their perspective on how well DOD has done in protecting the natural resources, such as endangered species and their habitat located on DOD lands, migratory birds, and marine mammals.

To assess the extent to which DOD has demonstrated that proposed statutory exemptions from the Clean Air Act;⁴ Resource Conservation and Recovery Act;⁵ and the Comprehensive Environmental Response, Compensation, and Liability Act⁶ would help the department to achieve its training and readiness goals, we reviewed the department's most recent annual sustainable range reports, its Readiness and Range Preservation Initiative, and other documents for elements of a sound business case. In addition, we reviewed documents that provided the perspective of federal and state regulatory agencies, such as EPA, state and local air pollution control program officials, state environmental commissioners, state attorneys general, county and municipal governments, and nongovernmental organizations, such as the Center for Public Environmental Oversight, NRDC, and PEER, on the potential impact to the environment if these exemptions were granted. We also discussed the topic with officials from OSD, the military services, and EPA. During these meetings, we discussed the potential benefits and problems associated with the proposed statutory exemptions. During our visits to the military installations identified previously, we also obtained military service officials' perspectives on the potential effects of using the proposed statutory exemptions on training activities, military readiness, and the environment. Additionally, we compared the elements of a sound business

⁴42 U.S.C. § 7506(c).

⁵42 U.S.C. § 6901 et seq.

⁶42 U.S.C. § 9601 et seq.

case and what DOD provided to Congress to assess whether DOD had demonstrated a need for the three remaining exemptions.

On the basis of information obtained from the military services on the reliability of their unit readiness data, our discussions with DOD, military service, and NGO officials, and our review and analysis of documents and reports describing the effects of environmental requirements and statutory exemptions on training activities, military readiness, and the environment, we believe that the data used in this report are sufficiently reliable for our purposes. The time periods encompassed by the data used in this report vary for each of our objectives depending on the date ranges for which each type of data was available. We conducted this performance audit from June 2007 through March 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Comments from the Department of Defense



PERSONNEL AND
READINESS

OFFICE OF THE UNDER SECRETARY OF DEFENSE
4000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-4000



Mr. Brian J. Lepore
Director, Defense Capabilities and Management
U.S. Government Accountability Office
Washington, D.C. 20548

MAR 5 2008

Dear Mr. Lepore:

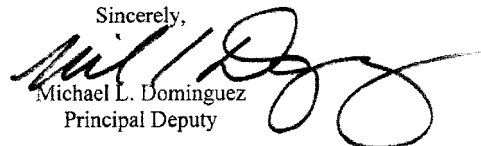
This is the Department of Defense (DoD) response to the Government Accountability Office Draft Report, "MILITARY TRAINING: Compliance with Environmental Laws Affects Some Training Activities but DoD Has Not Made a Sound Business Case for Additional Environmental Exemptions," dated February 8, 2008 (GAO Code 351050; GAO-08-407).

The Department appreciates the opportunity to comment on the draft report. We also applaud the GAO's balanced approach to analyzing and reporting on this complex issue. The GAO's recommendation that a sound business case is a prerequisite when asking Congress for clarifications of environmental or other law is valid, though we disagree with the premise a case has not already been made for most past provisions. Other technical comments have been provided separately.

We do take exception to the GAO's overly broad use of the term "exemptions" throughout this report. While appropriate to describe explicit National Security exemptions found in many environmental laws, the GAO also applies the term much more broadly to the very specific legislative provisions enacted by Congress as part of DoD's Readiness and Range Preservation Initiative (RRPI), which DoD believes are clearly not exemptions. By using "exemptions" broadly as an over-simplified term of convenience, the GAO mischaracterizes Congress's action and intent, and unnecessarily reinforces the perception that DoD has sought to avoid its environmental stewardship responsibilities.

We look forward to continuing to work with Congress and the GAO on comprehensive solutions that sustain our military training ranges to meet the readiness challenges of the future.

Sincerely,


Michael L. Dominguez
Principal Deputy



**GAO DRAFT REPORT - DATED FEBRUARY 8, 2008
GAO CODE 351050/GAO-08-407**

**“MILITARY TRAINING: Compliance with Environmental Laws
Affects Some Training Activities, but DoD Has Not made a Sound
Business Case for Additional Environmental Exemptions”**

**DEPARTMENT OF DEFENSE COMMENTS
TO THE RECOMMENDATIONS**

RECOMMENDATION 1: The GAO recommends that the Secretary of Defense direct the Deputy Under Secretary of Defense for Installations and Environment and the Deputy Under Secretary of Defense for ~~Personnel~~ and Readiness to jointly develop a sound business case that includes detailed qualitative and quantitative analyses assessing the associated benefits, costs, and risks of the proposed exemptions from environmental laws. (pg. 47/GAO Draft Report)

DOD RESPONSE: DoD partially concurs. We agree with the GAO's general observation that a sound business case with qualitative and quantitative analysis regarding the benefits, costs and risks of proposed clarifications to environmental laws is desirable and should be developed in association with future environmental provisions. If and when DoD again submits/resubmits provisions of this nature, we expect to supply associated justification in support of any request. However, DoD believes that past provisions involving clarifications to environmental law were in fact largely supported with the rationale and supporting information necessary to constitute a "sound business case." While Congress has not enacted the previously submitted Clean Air, RCRA and CERCLA provisions for various reasons, DoD does not accept the premise that the readiness and training imperatives or associated risks were not conveyed to the extent feasible.

DoD also disagrees strongly with the GAO's use of the term exemptions as applied to DoD-requested environmental provisions in general, except where the term specifically applies to a true "national security exemption provision," such as MMPA Section 1371.

NOTE: Correct office for action in the recommendation should be the Deputy Under Secretary of Defense for Readiness.

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

Brain J. Lepore, (202) 512-4523 or leporeb@gao.gov

Acknowledgments

In addition to the contact named above, Mark A. Little, Assistant Director; Vijaykumar Barnabas; Susan Ditto; Jason Jackson; Arthur James; Richard Johnson; Oscar Mardis; Patricia McClure; Jacqueline Snead McColl; Anthony Paras; Charles Perdue; and Karen Thornton made major contributions to this report.

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