

“The Department of Defense possesses unique and irreplaceable natural and cultural resources that contribute to our national heritage. We must manage and maintain these resources through comprehensive programs that consider the preservation of values that are mission supporting and result in sound and responsible stewardship.”

—Mr. Philip Grone
Deputy Under Secretary of Defense
Installations and Environment

The Department of Defense (DoD) is responsible for the protection and security of America, including her people and natural and cultural resources. Beginning with the exploration efforts and environmental studies of military officers like Meriwether Lewis, William Clark, and John Fremont during the country’s infancy, the Department has long been a key contributor to the protection and management of the environment. The military’s direct responsibility for stewardship of our natural resources began in 1872, through a Congressional charge to protect Yellowstone National Park.

Today, this responsibility extends to the nearly 30 million acres of land, air, and water where DoD serves as the environmental steward. The Department constantly examines the land, air, and water resources needed to enhance overall sustainability, protect the community, and support the military mission. By protecting, conserving, and restoring our natural and cultural resources, the Department is continuing a management strategy that supports the military mission while ensuring that future generations receive the full benefits of our resources.

DoD manages an extensive portfolio of natural and cultural resources that is supported through the implementation of programs and policies designed to protect human health and the environment. The Department is continually analyzing each program to ensure that it is performing appropriately and striving to meet identified goals. This report documents DoD’s activities over the past fiscal year across the following four environmental program areas:

- Conservation—These programs protect and enhance the natural and cultural resources under DoD stewardship by utilizing a multi-disciplinary approach to identify, protect, use, and sustain resources to provide

optimum public benefits and support the military mission.

- Restoration—The Defense Environmental Restoration Program identifies, assesses, and remediates contamination from hazardous substances, military munitions, and pollutants from previous military operations. Through the program, DoD also corrects other environmental damage that creates an imminent and substantial endangerment to the public health or to the environment.
- Compliance—These programs ensure that DoD operations meet or exceed federal, state, local, and host nation environmental requirements.
- Pollution Prevention—The goals of these programs are to promote the reduction or elimination of the amount of waste, including hazardous and toxic chemicals, that enters the environment by focusing on the source of pollution instead of the end result.

The Fiscal Year 2006 Defense Environmental Programs Annual Report to Congress addresses activities related to the Department’s environmental programs and fulfills Congressional reporting requirements under 10 U.S.C. 2706; the Comprehensive Environmental Response, Compensation, and Liability Act; the Resource Conservation and Recovery Act; and various other laws and regulations. This report summarizes DoD’s environmental activities over the past fiscal year, and includes discussions on past budget appropriations and anticipated funding requests. The organization of both the report and the appendices is predicated on the aforementioned four environmental program areas.

The Department of Defense (DoD) maintains, promotes, and restores its environmental assets at ranges and installations, both domestically and overseas, with an effective planning, programming, budgeting, and execution process that allocates financial resources where they are needed. The budget and review process ensures that the Components—Army, Navy, Air Force, and the Defense Agencies—identify and request adequate funding to meet mission, legal, and regulatory environmental requirements.

The budget cycle for each fiscal year (FY) begins years in advance, requiring DoD to anticipate and plan for future environmental activities. The Components build their environmental budgets from the installation-level up. These installation-level estimates are the basis for Component environmental budget submissions to the Secretary of Defense. The Secretary includes these requirements as part of the overall Defense budget that the President submits to Congress. Subsequently, each fiscal year, Congress authorizes DoD's activities through the National Defense Authorization Act and provides funds through the Department of Defense Appropriations Act and the Military Construction, Military Quality of Life, and Veteran's Affairs Appropriations Act (hereafter, MilCon Appropriations Act).

The bulk of the funding for the Conservation, Compliance, and Pollution Prevention Programs comes from the Operations and Maintenance appropriations included in the DoD Appropriations Act. The Components also use funds for these programs provided through the MilCon Appropriations Act to build necessary facilities, such as wastewater treatment plants. Small funding amounts are also provided under the MilCon Appropriations Act for Military Personnel and through the DoD Appropriations Act for Procurement, Research, Development, Testing and Evaluation appropriations, and the Defense Working Capital Fund.

The Compliance Program (and to a lesser degree, the Conservation and Pollution Prevention Programs) includes funding for infrastructure sustainment activities at overseas installations, including those activities necessary to comply with environmental requirements determined after a review of existing treaties, laws, and other agreements (known as the Final Governing Standards).

Restoration activities within the Defense Environmental Restoration Program (DERP) are funded from the Environmental Restoration (ER) and Base Realignment and Closure (BRAC) accounts. The ER account funds DERP environmental restoration activities at active military installations and formerly used defense sites (FUDS) within the United States (U.S.) and its territories. These funds are further divided into five Component-specific ER accounts. A separate appropriation funds environmental restoration activities at BRAC installations, which also addresses closure-related environmental cleanup and environmental planning activities. Restoration activities outside the U.S. are funded through the Compliance Program, since ER funds are restricted for use inside the U.S. and its territories.

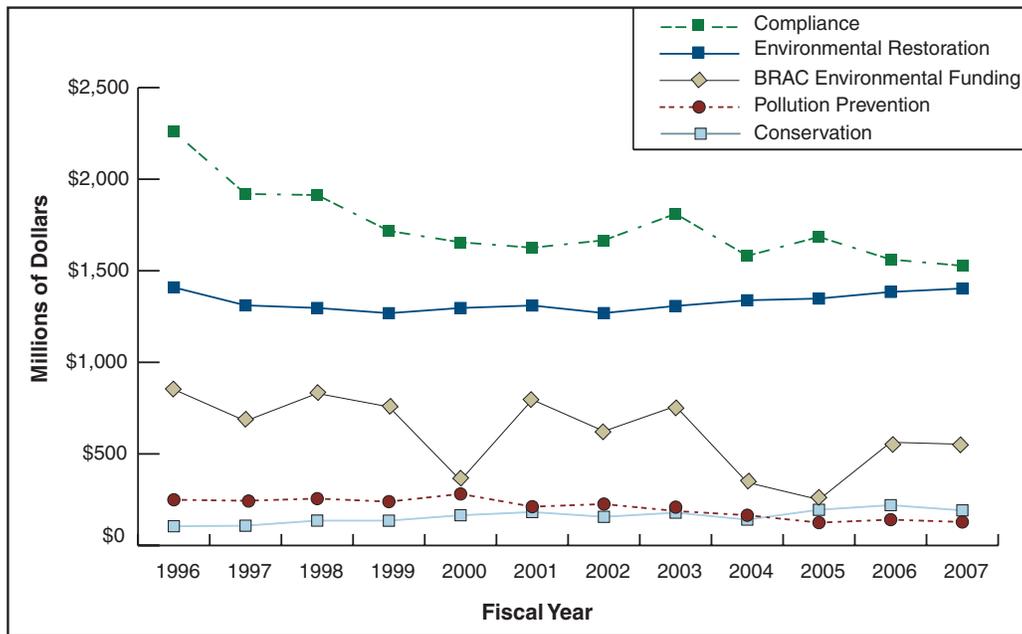
Defense Environmental Funding Trends

Over the past 10 years, DoD invested almost \$42.4 billion to ensure the success of its environmental programs. In FY2006, DoD obligated approximately \$4.1 billion for environmental activities—\$204.1 million for conservation; \$1.4 billion for ER at active installations and FUDS; \$568.2 million for BRAC environmental requirements; \$1.5 billion for compliance; \$125.2 million for pollution prevention; and \$261.3 million for environmental technology. While all of DoD's environmental programs work toward the same goal—maintaining readiness while protecting human health and the environment—each program has a unique focus, and thus different funding needs. Figure 1 illustrates how the funding priorities differ for each program.

Domestic Environmental Activities

Congress appropriates funding for DoD's Conservation, Restoration, Compliance, and Pollution Prevention Programs, as well as for environmental technology, to ensure that the Department is able to continue serving as a steward of the environment in the U.S. and its territories.

Figure 1
Defense Environmental Funding Trends



Conservation

The Department invests in protecting natural and cultural resources located on and near DoD installations through the Conservation Program. DoD provides policy and funding to manage and protect:

- Natural Resources, such as threatened and endangered flora and fauna, rivers and other waters, wetlands, land, and air
- Cultural Resources, including archeological sites, historic buildings, relics of prior civilizations, recovered artifacts, and other national historic treasures.

The Components obligated \$204.1 million in FY2006 for conservation efforts. Conservation funding from FY2006 through FY2008 reflects DoD's efforts to work with surrounding communities to reduce the impact of development that inhibits training and adversely affects mission accomplishment. Figure 2 shows actual, estimated, and requested funds for recurring and nonrecurring

Conservation Program activities. Recurring funds finance continuous conservation management activities, while nonrecurring funds pay for one-time conservation projects associated with threatened and endangered species, wetland protection, or other natural resources.

Additional information about Conservation funding by Component is located in Appendix B: Environmental Management Budget Overview and Appendix C: Conservation Budget Overview.

Restoration

In FY2006, the Components obligated approximately \$1.4 billion in ER account funding for environmental restoration activities at active installations and FUDS properties. The Components obligated an additional \$568.2 million for environmental activities at BRAC installations. Of the nearly \$2.0 billion obligated for restoration activities, \$1.6 billion funded cleanup of hazardous substances, pollutants, and contaminants from past DoD activities through the Installation Restoration Program (IRP) and \$201.9 million

Figure 2
Conservation Funding (millions)

	FY2005 Actual	FY2006 Actual	FY2007 Estimated	FY2008 Requested
Recurring	\$54.2	\$49.7	\$50.1	\$53.3
Nonrecurring	\$133.7	\$154.4	\$157.0	\$148.4
Total	\$187.9	\$204.1	\$207.1	\$201.7

funded cleanup of munitions contamination through the Military Munitions Response Program (MMRP). Figure 3 shows actual, estimated, and requested ER funding and Figure 4 shows actual, estimated, and requested BRAC funding with breakouts by IRP and MMRP program category.

ER Account Funding

The ER account funds environmental restoration activities at active installations and FUDS properties. As shown in Figure 3, of the \$1.4 billion obligated for ER activities in FY2006, \$1.2 billion funded cleanup activities under the IRP and \$172.8 million funded cleanup under the MMRP.

The Department currently invests the greatest portion of funding on its remaining high relative-risk sites, continuing its commitment to implement remedies at all of these sites by FY2007. The amount of funding required for high relative-risk sites decreases as DoD nears this goal. Funding priorities will then shift to medium relative-risk sites, to meet the Department's FY2011 goal for implementing remedies at these sites. As the Department achieves IRP goals, DoD will reallocate IRP funding to the MMRP to further investigate and prioritize MMRP sites and to implement cleanup remedies in support of MMRP goals. Funding amounts for FY2006, FY2007, and FY2008 also reflect the transfer of funds from the ER to the BRAC account to provide funding for the 2005 round of base closures. These funding shifts are permanent to remediate installations affected by BRAC 2005.

New requirements to address emerging contaminants such as perchlorate, naphthalene, and 1,4-dioxane also drive investments in cleanup. The Department will continue to adjust its plans and programs to meet these challenges and adjust total cleanup "cost-to-complete" estimates accordingly.

Further information about ER funding by Component is located in Appendix B: Environmental Management Budget Overview and Appendix D: Restoration Budget Overview.

BRAC Environmental Funding

The BRAC account provides funding for restoration, closure-related compliance, and planning activities at closing or realigned military installations in the U.S. and its territories. Unlike other appropriations, Congress provides BRAC funding according to BRAC rounds and allows it to remain available until expended, rather than setting an expiration date for the funds. Over the past 10 years, Congress has provided \$5.9 billion for environmental activities at BRAC installations. In FY2006, DoD obligated \$568.2 million for BRAC environmental activities, with \$418.9 million for the IRP, \$29.1 million for the MMRP, and \$120.2 million for support activities, including BRAC 2005 management, planning, and compliance. The FY2006, FY2007, and FY2008 funding levels reflect funding for restoration at BRAC rounds I-IV, as well as BRAC 2005 installations.

Figure 4 shows actual, estimated, and requested BRAC environmental funding broken out by environmental program category. The estimated Congressional appropriation for

Figure 3

Environmental Restoration Funding (millions)

	FY2005 Actual	FY2006 Actual	FY2007 Estimated	FY2008 Requested
IRP	\$1,196.9	\$1,203.9	\$1,200.3	\$1,236.5
MMRP	\$151.4	\$172.8	\$203.0	\$220.4
Total	\$1,348.2	\$1,376.7	\$1,403.3	\$1,456.9

Figure 4

BRAC Environmental Funding (millions)¹

	FY2005 Actual*	FY2006 Actual	FY2007 Estimated	FY2008 Requested
IRP	\$183.6	\$418.9	\$414.2	\$316.1
MMRP	\$17.5	\$29.1	\$18.2	\$25.3
Other Costs[†]	\$49.2	\$120.2	\$142.4	\$128.5
Total	\$250.3	\$568.2	\$574.7	\$469.9

¹ Department of the Air Force's BRAC IRP budget includes MMRP costs. Future reporting will separate BRAC IRP and MMRP funds.

* Includes Defense Logistics Agency prior year unobligated balance available for execution in FY2005.

[†] Other costs include BRAC 2005, planning, and compliance costs.

BRAC environmental activities in FY2007 is \$574.7 million, and DoD is requesting \$469.9 million in FY2008.

Additional information about BRAC environmental funding by Component is located in Appendix B: Environmental Management Budget Overview and Appendix D: Restoration Budget Overview.

Compliance

Congress appropriates funding each year to ensure that DoD remains in compliance with all applicable federal, state, and local environmental laws and regulations. During FY2006, DoD invested \$1.5 billion for activities under the Compliance Program.

Recurring compliance costs are those relatively constant activities that an installation must perform to maintain compliance with environmental regulations and permit requirements. These activities can include routine sampling and analysis of discharges to air and water and hazardous waste disposal. Other recurring costs include managing National Pollutant Discharge Elimination Systems, updating Clean Air Act inventories, and conducting self-assessments. Nonrecurring compliance costs address one-time events, such as projects to upgrade wastewater treatment facilities or install air pollution controls to meet current standards. Typically, DoD's largest annual nonrecurring compliance investment results from Clean Water Act (CWA) requirements for infrastructure investment in wastewater treatment plants and storm water management. Figure 5 shows actual, estimated, and requested funds for recurring and nonrecurring compliance activities.

Additional information about compliance funding by Component is located in Appendix B: Environmental Management Budget Overview and Appendix E: Compliance Budget Overview.

Pollution Prevention

The Department employs pollution prevention efforts to reduce health and safety risks to DoD personnel and nearby communities and to reduce environmental compliance, restoration, and conservation costs. The Pollution Prevention Program also promotes sustainment by minimizing the asset footprint required to manage hazardous materials used in support of the Department's mission. As a result, DoD's pollution prevention investments have the potential to reduce costs in all three areas. During FY2006, DoD invested \$125.2 million for pollution prevention activities, as shown in Figure 6.

Recurring pollution prevention investments include supplies, travel, data management, and Toxics Release Inventory and other reporting activities. Hazardous material reduction and CWA requirements are the priorities within the nonrecurring budget. These nonrecurring projects are significant drivers in reducing compliance costs.

Additional information about pollution prevention funding by Component is located in Appendix B: Environmental Management Budget Overview and Appendix F: Pollution Prevention Budget Overview.

Figure 5
Compliance Funding (millions)

	FY2005 Actual	FY2006 Actual	FY2007 Estimated	FY2008 Requested
Recurring*	\$989.1	\$951.1	\$930.7	\$952.3
Nonrecurring	\$695.9	\$591.3	\$621.6	\$753.3
Total	\$1,684.9	\$1,542.5	\$1,552.3	\$1,705.6

* Recurring compliance costs include all manpower, education, and training costs for Compliance, Pollution Prevention, and Conservation.

Figure 6
Pollution Prevention Funding (millions)

	FY2005 Actual	FY2006 Actual	FY2007 Estimated	FY2008 Requested
Recurring	\$42.0	\$55.4	\$52.9	\$56.8
Nonrecurring	\$82.7	\$69.8	\$78.1	\$72.8
Total	\$124.8	\$125.2	\$131.0	\$129.6

Environmental Technology

DoD's environmental technology programs provide new and improved methods, equipment, materials, and protocols to meet military readiness needs. For example, these programs have resulted in more efficient application of paints and metal plating and reduced the generation of hazardous waste and associated treatment costs. The DoD Environmental Technology Annual Report to Congress covers this area in more detail and fulfills Congressional reporting requirements. Environmental technology is included exclusively in the budget section of this report to ensure completeness of the environmental budget discussion.

The Office of the Secretary of Defense administers the Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP). SERDP and ESTCP focus on the highest-priority environmental technology needs that apply to more than one Component. These programs help avoid duplication of effort among the Components on similar

problems. A portion of environmental technology funding is invested in Defense Warfighter Protection (DWFP).

Environmental technology funding for FY2005 through FY2008 is shown in Figure 7.

Overseas Environmental Activities

The Department complies with environmental requirements overseas using programs similar to those that are successful domestically. Funding for remediation activities is included in the overseas compliance activities budget. These overseas investments are necessary to sustain the use of, and access to, the natural resources needed to meet the military mission and to comply with environmental requirements determined after a review of the Final Governing Standards. Overseas environmental funding is included in the Conservation, Compliance, and Pollution Prevention funding charts—Figures 2, 5, and 6 respectively—and is provided separately in Figure 8.

Figure 7
Environmental Technology Funding (millions)

	FY2005 Actual	FY2006 Actual	FY2007 Estimated	FY2008 Requested
Army	\$87.3	\$76.2	\$71.3	\$55.1
Navy	\$57.7	\$53.3	\$45.1	\$33.2
Air Force	\$10.1	\$16.6	\$15.8	\$19.1
SERDP	\$54.9	\$65.5	\$63.7	\$68.9
ESTCP	\$41.3	\$44.7	\$32.3	\$33.2
DWFP	\$4.9	\$5.0	\$5.0	\$5.0
Total	\$256.3	\$261.3	\$233.2	\$214.5

Figure 8
Overseas Environmental Funding (millions)

	FY2005 Actual	FY2006 Actual	FY2007 Estimated	FY2008 Requested
Cleanup	\$21.2	\$24.1	\$26.0	\$34.3
Compliance	\$151.0	\$110.2	\$124.0	\$135.6
Pollution Prevention	\$13.8	\$12.6	\$11.9	\$10.2
Conservation	\$14.1	\$8.3	\$8.6	\$7.4
Total	\$200.1	\$155.3	\$170.6	\$187.5

As the third-largest federal land management department in the United States (U.S.), the Department of Defense (DoD) serves as the custodian and environmental steward of nearly 30 million acres of land at more than 3,700 locations. DoD installations are rich in natural and cultural resources, which include wetlands, rare ecosystems, threatened and endangered species, archaeological sites, historic records, historic buildings and structures, cultural landscapes, archaeological collections, traditional cultural places and sacred sites. By identifying and inventorying natural and cultural resources, the Department is able to develop plans and initiatives to manage those resources. During Fiscal Year (FY) 2006, DoD's conservation efforts continued to focus on sustainable use, management, and resource protection, as well as achieving full and sustained compliance with all federal, state, and local environmental laws and regulations. In addition, DoD partnered with other federal, state, and local agencies and interested stakeholders to improve the efficiency of conservation efforts and stewardship of natural and cultural resources under the Department's jurisdiction.

During FY2006, DoD participated in the White House initiative, Preserve America. The goals of the initiative are to: develop a greater shared knowledge about the nation's past; strengthen regional identities and local pride; increase local participation in preserving the country's cultural and natural heritage resources; and raise support for the economic vitality of communities. DoD senior leadership took an active role in the initiative by leading discussions during a national summit to develop program and policy recommendations for effectively balancing security concerns with the preservation and interpretation of historic properties.

Natural Resource Management

DoD identifies and manages natural resources on its installations by analyzing natural resource inventory information to determine management needs, resource characteristics, and constraints related to military training and testing activities. By engaging in integrated planning to encourage the sustained use of these resources, the Department preserves the land, water, and airspace needed for military readiness while maximizing critical environmental protection.

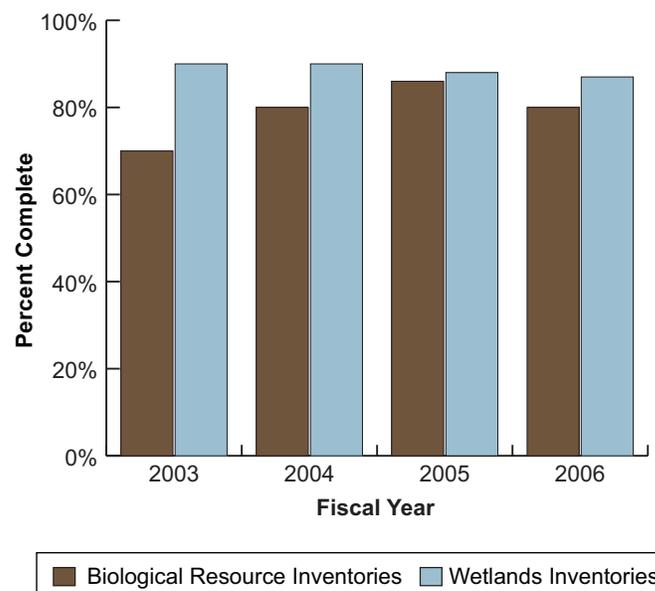
Additional information on DoD's efforts to protect natural resources can be found in Appendix G: Natural Resources.

Natural Resource Inventories

DoD conducts inventory assessments of natural resources at installations, enabling managers to develop plans to manage and protect natural assets. Figure 9 illustrates the progress DoD installations have made in maintaining up-to-date biological resources and wetlands inventories. By the end of FY2006, approximately 80 percent of DoD's biological resource inventories and nearly 87 percent of its wetlands inventories were up-to-date.

The number of installations required to perform an inventory varies from year to year due to changes in legislative requirements, regulatory status, or the condition of the facility's resources. Installations update their inventories frequently to ensure that information is current. DoD also reevaluates installation resource management methods periodically, regardless of any actual changes to existing resource inventories, to ensure that installations are providing the most appropriate management strategy.

Figure 9
DoD Natural Resource Inventories Completed



Sikes Act Requirements and Integrated Natural Resource Management Plans

The Sikes Act requires each DoD installation to develop a plan to manage and maintain wildlife, fish, and game conservation and rehabilitation. Congress amended the Sikes Act in 1997 to require DoD to prepare and implement an Integrated Natural Resource Management Plan (INRMP) for each installation in the U.S. with significant natural resources, among other requirements. Additional information on DoD's efforts under the Sikes Act can be found in Appendix G: Natural Resources.

An INRMP provides management guidance and sets priorities for natural resource protection, improvement, and restoration. Installations use INRMPs to manage and maintain natural resources, fish and wildlife conservation, forestry, land resources, and outdoor recreation, while supporting mission needs. INRMPs are intended to:

- Integrate military operations and conservation activities
- Reflect cooperation between the U.S. Fish and Wildlife Service (FWS), the host state, and the installation
- Document budget requirements for natural resources
- Serve as a principal information source for National Environmental Policy Act documents
- Guide planners and facility managers in the use and conservation of natural resources on lands and waters under DoD control

- Balance the management of natural resources unique to each installation with mission requirements and other land use activities
- Identify and prioritize actions required to implement conservation goals and objectives.

In preparing an INRMP, each installation provides an opportunity for public comment and cooperates with the FWS, and appropriate state fish and wildlife agencies. DoD expanded the opportunities for comment to include military trainers, operators, and other stakeholders. Each plan must ensure no net loss in the capability of installation lands to support the military mission of the installation.

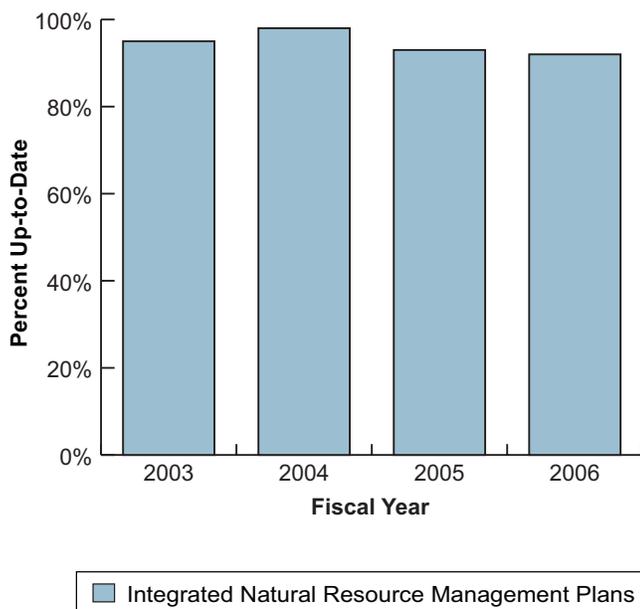
The Sikes Act requires that all INRMPs be reviewed by the installation, the FWS and the state fish and wildlife agency on a regular basis, but no less than every five years. INRMPs should be revised when there are significant changes to the military mission or affected assets. Figure 10 illustrates the percentage of up-to-date INRMPs installations have in place under the Sikes Act Amendments. By the end of FY2006, DoD completed the revision of 92 percent of its INRMPs. The remaining plans are in coordination with the FWS or state fish and wildlife officials.

Threatened and Endangered Species

Congress passed the Endangered Species Act (ESA) in 1973, to protect plant and animal species at risk of extinction. The ESA defines an endangered species as one "in danger of extinction throughout all or a significant portion of its range," while a threatened species is "likely to become endangered" within the foreseeable future. As of September 30, 2006, the FWS listed 1,311 plant and animal species as either threatened or endangered within the U.S., 319 of which inhabit DoD lands. DoD installations contain some of the finest remaining examples of rare native vegetative communities, such as old-growth forests, tallgrass prairies, and vernal pool wetlands.

DoD spends more than \$40 million each year to protect threatened and endangered species. The Department is required to conserve these species by preserving the habitat that is crucial to their survival and taking no action that would jeopardize their continued existence or adversely modify critical habitat. Under the ESA, any area that is essential to the conservation of a species can be classified as critical habitat by FWS. The FY2004 National Defense Authorization Act modified the critical habitat provision in the ESA to allow the Department of the Interior to utilize an approved INRMP in lieu of a critical habitat designation if the INRMP provides benefit to the species or if a critical habitat designation would impact national security. INRMPs

Figure 10
DoD INRMP Progress



can be more effective than the critical habitat designation because they provide a more holistic approach to species conservation and provide greater flexibility for installations to manage land and assets.

Cultural Resource Management

Cultural assets include archaeological sites, historic records, historic buildings and structures, cultural landscapes, archaeological collections, and traditional cultural places and sacred sites. Protection of the nation's heritage is an essential part of DoD's mission. DoD manages 75 National Historic Landmarks, more than 125,000 archaeological sites, and over 600 entries in the National Register of Historic Places, comprised of over 19,000 historic properties on over 200 installations nationwide. DoD uses cultural asset management to support the sustained use of and access to these valuable assets. This planning ensures that operational requirements are met, while minimizing harmful effects on these assets.

Additional information on DoD's efforts to protect cultural resources can be found in Appendix H: Cultural Resources.

Cultural Resource Inventories

Each DoD installation conducts surveys and maintains an inventory of cultural resources found on the installation. These inventories help installations manage assets and protect important national treasures. Figure 11 illustrates the percentage of up-to-date cultural resource inventories at

DoD installations. By the end of FY2006, DoD completed 59 percent of historic building/structure inventories and 52 percent of archaeological inventories.

Integrated Cultural Resource Management Plans

Installations prepare Integrated Cultural Resource Management Plans (ICRMPs) to define and implement their cultural resources management program. ICRMPs provide a valuable tool for monitoring the status of cultural resources on DoD installations and integrating preservation initiatives with ongoing mission activities. Installations often use ICRMPs in conjunction with INRMPs to effectively manage installation assets.

DoD Instruction (DoDI) 4715.3, "Environmental Conservation Program," requires each U.S. installation with significant cultural resources to prepare an ICRMP. Since 1996, DoD installations have been required to review their ICRMPs at least once annually and revise and update their plans at least every five years. By the end of FY2006, 72 percent of ICRMPs were completed, an increase of four percent from the previous year, as shown in Figure 12.

DoD uses ICRMPs to comply with laws such as the National Historic Preservation Act of 1966, the Native American Graves Protection and Repatriation Act, and the Archaeological Resources Protection Act.

Figure 11
DoD Cultural Resource Inventories Completed

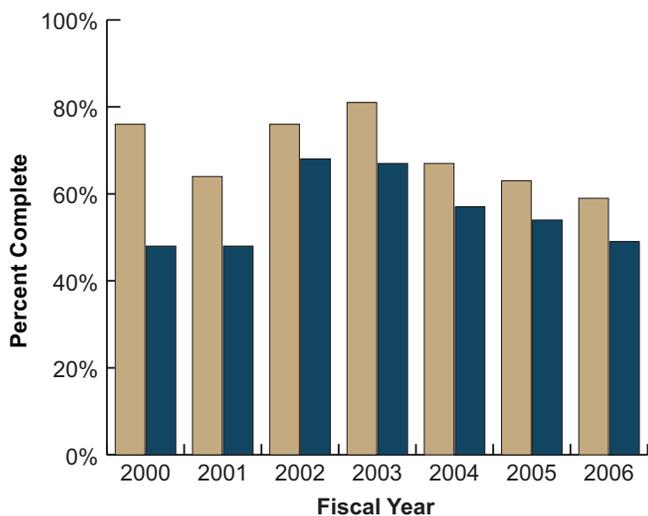
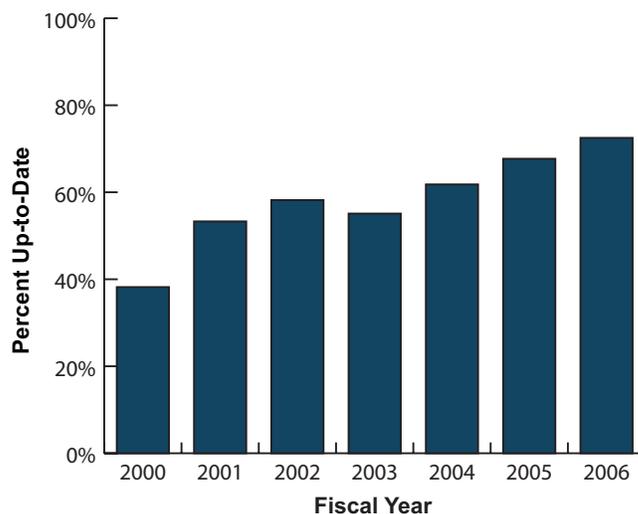


Figure 12
DoD ICRMP Progress



Legacy Resource Management Program

In recognition that military lands have significant natural and cultural resources, Congress created the Legacy Resource Management Program in 1990 to balance the use of DoD lands for military training and testing with the need to protect those resources. The Legacy Resource Management Program funds projects that emphasize leadership in exploring new ideas and implementing innovative technologies for natural and cultural resource management. DoD also works in partnership with other organizations under the program to conserve natural and cultural assets in a cost-effective and technically sound manner. The Legacy Resource Management Program facilitates partnerships with federal, state, and local agencies and private groups to cost effectively manage natural and cultural resources.

Between FY1991 and FY2006, the Legacy Resource Management Program invested more than \$278 million to fund more than 2,000 projects. In FY2006, the Legacy Resource Management Program invested \$8.3 million in a total of 71 projects. These projects focused on: readiness and range sustainment; integrated natural and cultural resources management; regional ecosystem management initiatives; invasive species control; monitoring and predicting migratory patterns of birds; national and international initiatives; historic preservation; the curation of archaeological collections, associated records, and documents; and management of archaeological sites and Native American issues.

Native Americans

DoD is proud of the progress it has made towards building collaborative relationships with Native Americans. In FY2006, DoD's major efforts included the completion of a significant policy initiative concerning federally-recognized tribal governments by signing DoDI 4710.02, entitled "DoD Interactions with Federally-Recognized Tribes." This Instruction further implements DoD's October 1998 American Indian and Alaska Native Policy and provides additional details on statutory and regulatory requirements relative to tribal governments. In addition, Congress appropriated \$10 million for the Native American Lands Environmental Mitigation Program in FY2006, of which 69 percent was provided directly to the tribes for mitigation costs through Cooperative Agreements.

Details on DoD's Native American partnerships and projects are located in Appendix I: Native Americans.

The Department of Defense (DoD) is committed to the cleanup of contaminated soils, sediment, groundwater, and surface waters resulting from past practices at military installations in the United States (U.S.) and its territories. Beginning in the 1970s, the Department began to identify, characterize, and clean up environmental contamination that had occurred when hazardous substances and wastes were managed and disposed of using standard practices later found to be detrimental to the environment. Since 1986, DoD has applied the Defense Environmental Restoration Program (DERP) to restore environmentally impacted property and pursue restoration activities at active installations, Base Realignment and Closure (BRAC) installations, and Formerly Used Defense Sites (FUDS) throughout the U.S. and its territories.

In 1980, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that established a framework for the identification, investigation, and cleanup of hazardous substances resulting from past practices; however, CERCLA did not apply to federal government sites initially. With the passage of the

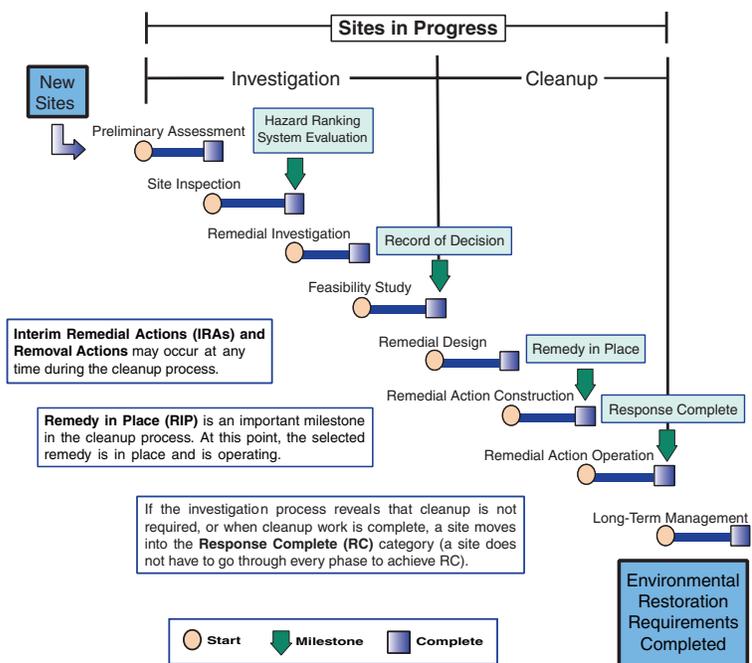
Superfund Amendments and Reauthorization Act (SARA) in 1986, Congress amended CERCLA and created the DERP. SARA codified DoD's environmental stewardship responsibilities—establishing standards in restoration for the U.S. and its territories. Since the DERP's inception, the Office of the Secretary of Defense has overseen the program and its implementation by the Components—Army, Navy, Air Force, Defense Logistics Agency, and Defense Threat Reduction Agency.

DoD applies the environmental restoration process set by CERCLA and its implementing regulation, the National Oil and Hazardous Substances Pollution Contingency Plan, to all the Department's restoration sites. The CERCLA environmental restoration process consists of several phases which are illustrated in Figure 13. While some phases may overlap or occur concurrently, environmental response activities at DoD sites are generally conducted in the order depicted.

The DERP provides for the identification, investigation, and cleanup of contamination and military munitions associated with past activities at DoD facilities to ensure that potential threats to public health and the environment are assessed and addressed as appropriate. To effectively address remediation at current and former installations, DoD organized the DERP into three distinct program categories:

Figure 13

DoD CERCLA Environmental Restoration Process Phases and Milestones



- ♦ **Installation Restoration Program (IRP)**
The IRP, established in 1985, addresses the release of hazardous substances, pollutants, or contaminants resulting from past practices that pose environmental health and safety risks. Currently, there are 27,407 IRP sites at 3,447 active and BRAC installations and FUDS properties.
- ♦ **Military Munitions Response Program (MMRP)**
The MMRP, initiated in 2001, addresses environmental and health hazards from unexploded ordnance (UXO), discarded military munitions (DMM), and munitions constituents (MC) found at locations other than operational ranges on active and BRAC installations and FUDS properties. The Department maintains an inventory of all munitions response sites (MRS) addressed under the MMRP. There are currently 3,316

sites at 1,895 current and former defense properties on the MMRP inventory.

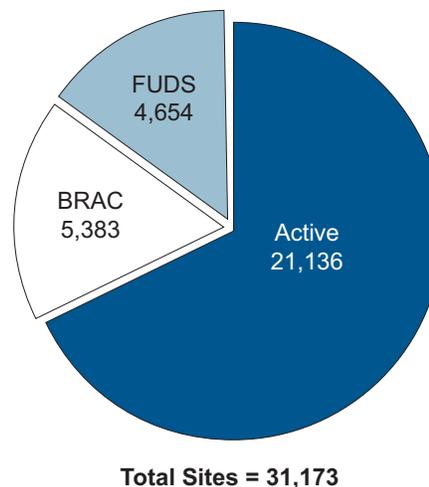
- ♦ **Building Demolition/Debris Removal (BD/DR)**
BD/DR provides for the demolition and removal of unsafe buildings or structures at facilities or sites that meet specified criteria; most BD/DR activities take place on FUDS properties. DoD conducts BD/DR activities at 450 sites on 422 active installations and FUDS properties; these sites are often included in IRP site counts.

Through Fiscal Year (FY) 2006, the Department has conducted environmental activities at 31,173 sites on 1,810 active and BRAC installations and 2,808 FUDS properties. DoD has completed all response actions at 22,895 sites (approximately 73 percent) and is making progress toward achieving its environmental restoration goals.

There are three types of property classifications under the DERP—active installations, BRAC installations, and FUDS properties—that are supported by different funding accounts. Figure 14 shows the site breakdown of property types under the DERP, which are described below.

- ♦ **Active installations** are those bases where DoD currently conducts its training and operations. Sites at these installations are funded through four environmental restoration (ER) accounts, one for each Component and DoD-wide, and are managed by their respective Military Component. Additional information on active installations is located in Appendix J: Active Installations Environmental Restoration Progress.
- ♦ **BRAC installations** are those properties that have been identified for closure or realignment under one of the five BRAC rounds (1988, 1991, 1993, 1995, and 2005). BRAC funding is appropriated by Congress just like the ER account; however, these funds are managed through a separate account structure. BRAC environmental funding solely finances environmental remediation, compliance, and closure-related requirements for BRAC installations. Additional information on BRAC installations is located in Appendix K: BRAC Installations Environmental Restoration Progress.
- ♦ **FUDS properties** are real properties that were under the jurisdiction of the Secretary of Defense and owned by, leased by, or otherwise possessed by DoD. These properties are now owned by private individuals, corporations, state and local governments, federal agencies, and tribal governments. Similar to active installation, FUDS are funded through an ER account. Additional information on FUDS properties is located

Figure 14
DERP Property Status



in Appendix L: FUDS Environmental Restoration Progress.

Prioritization

With over 31,000 sites under the DERP, DoD does not have the capability to address every site at once, and it is crucial that the Department be able to direct necessary resources to sites that pose the greatest risk. Prioritization of sites allows DoD to apply careful consideration and planning to ensure that DoD's resources are used effectively to maximize reductions in risk and progress made toward restoration goals. To reduce health and safety risks posed by historical contamination, DoD employs a risk-based management approach for the DERP comprised of three main elements: a systematic process for prioritizing sites based on risk evaluation; program goals and performance metrics to track progress and fulfill restoration requirements at sites; and an outreach program focused on regulators and stakeholder communities to identify and address concerns.

DoD uses two prioritization tools to determine the risk posed by each site relative to other sites in its inventory so that funding can be allocated to achieve the greatest risk reduction. The Relative-Risk Site Evaluation (RRSE) is used to prioritize IRP sites and the Munitions Response Site Prioritization Protocol (Protocol) is used for MMRP sites.

Relative-Risk Site Evaluation

The RRSE framework is a methodology used across DoD to evaluate the relative risk posed by a site in relation to other sites. DoD uses the framework to prioritize IRP sites into three categories—high, medium, or low relative risk—based on the nature and extent of contamination at a site, the

potential for contaminants to migrate, and the potential impacts on populations and ecosystems. Sites lacking sufficient information for the completion of an RRSE are designated as “Not Evaluated.” RRSEs are “Not Required” for sites classified as having all remedies in place (RIP), even though they may be in remedial action operation phase, or that have achieved response complete (RC), even though they may be in the long-term management (LTM) phase. The RRSE framework is intended only for IRP sites and does not extend to the sites solely under the MMRP or BD/DR program, or to potentially responsible party or compliance activities. In prioritizing sites for cleanup, the Department also considers other factors, such as installation cleanup strategy, progress toward program goals, and stakeholder concerns. At BRAC installations, DoD considers the RRSE framework when determining site prioritization; however, reuse needs and priorities, as well as property transfer and redevelopment plans, are also major factors in sequencing cleanup activity.

Munitions Response Site Prioritization Protocol

DoD developed the Protocol to assign a relative priority to each MRS, based on the potential hazards present and site conditions, in order to rank all the sites for remediation and funding. The Department promulgated the Protocol in FY2006. The risk posed by potential hazards present at an MRS is captured by three hazard modules that address: (1) the hazards of UXO and DMM; (2) the unique, acute physiological effects of chemical warfare materiel; and (3) chronic health and environmental hazards posed by MC and any incidental environmental contaminants.

DoD’s approach is to evaluate each MRS based on the greatest potential hazards posed by UXO, DMM, or MC and to consider the three module ratings together to determine an MRS’s relative priority. The relative priority assigned to each MRS will serve as the primary factor for sequencing response actions. However, DoD recognizes that other factors, such as economic, programmatic, and stakeholder concerns, may impact sequencing decisions. Components must submit the ratings of each hazard module along with the relative priority for each MRS in the inventory to DoD beginning in FY2007.

Restoration Goals and Metrics

DoD has developed comprehensive program goals and performance metrics to measure DERP progress and success under the IRP and MMRP. The Components use these goals to guide investment decisions and set restoration targets during the fiscal year. Progress in the restoration program is measured using a number of milestones, most notably RIP, meaning that the construction of the final remedy at

a site has been completed and the remedy is functioning properly and performing as designed; and RC, meaning that all the restoration objectives have been met at that site. The Department plans to achieve these goals by leveraging regulatory partnerships and by planning, managing, and budgeting to ensure sufficient funding is available to support restoration plans.

IRP Performance Goals

DoD uses performance metrics to assess progress toward IRP goals. These performance metrics include phase progress at the site level, progress toward achieving RIP/RC status at the installation level, and progress in achieving overall relative-risk reduction. When evaluating these performance metrics, DoD examines both progress-to-date and the projection of future progress. IRP performance goals focus on completing required cleanup activities at the highest risk sites first. Program performance goals include:

- Achieve RIP/RC at 100 percent of high relative-risk IRP sites at active installations and FUDS properties by the end of FY2007
- Achieve RIP/RC at 100 percent of medium relative-risk IRP sites at active installations and FUDS properties by the end of FY2011
- Achieve RIP/RC at 100 percent of low relative-risk IRP sites at active installations by the end of FY2014
- Achieve RIP/RC at 100 percent of low relative-risk IRP sites at FUDS properties by the end of FY2020.

BRAC installation goals have the added objective of preparing property to be environmentally suitable for transfer and reuse in accordance with CERCLA requirements. The Department has achieved RIP/RC status at 78 percent of BRAC installations identified during the first four BRAC rounds. DoD expects to achieve RIP/RC status at the remaining BRAC installations from the first four BRAC rounds and have them ready for transfer by FY2021. DoD is developing environmental remediation goals for IRP sites identified during the 2005 BRAC round.

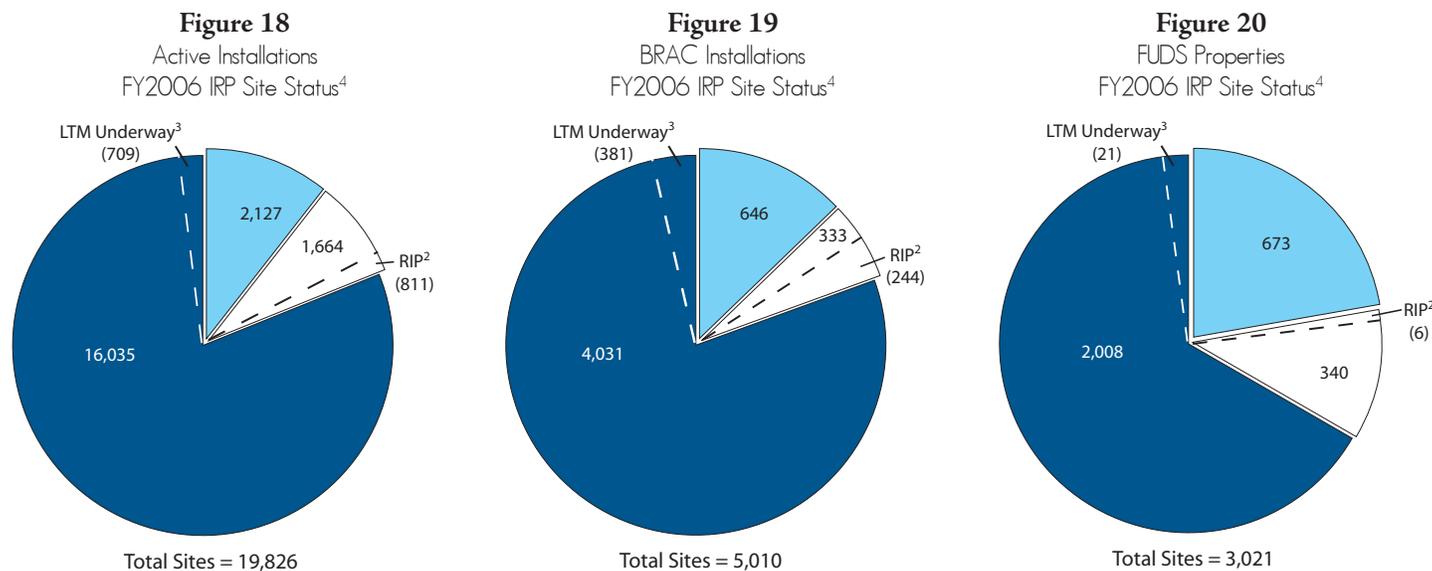
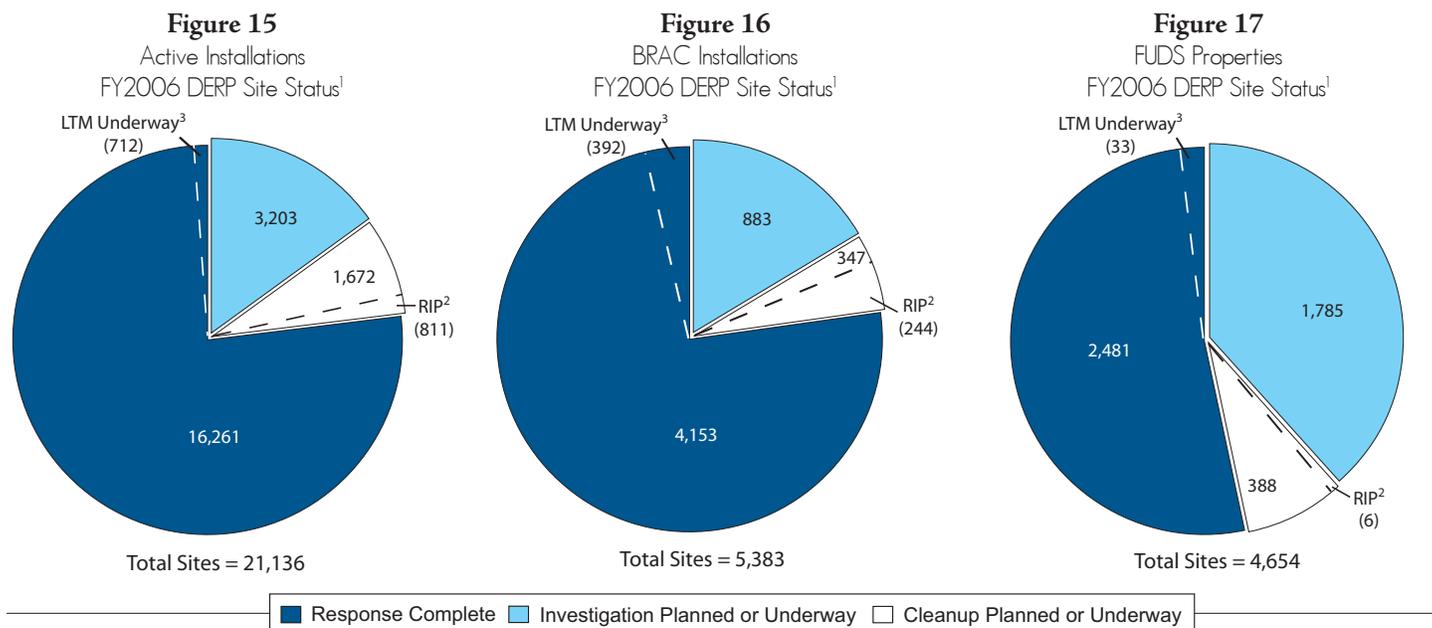
MMRP Performance Goals

DoD is working to develop and implement program goals and performance metrics to measure MMRP progress. Similar to the IRP, DoD has developed goals for the MMRP to address the sites with greatest risk first and to facilitate advancement through the phases of the program. Risk-based goals are addressed based on the prioritization of sites under the Protocol. Program progress or performance goals include:

- Complete preliminary assessments for all MRSs at active installations, excluding operational ranges, and FUDS properties by the end of FY2007
- Complete site inspections for all MRSs at active installations, excluding operational ranges, and FUDS properties by the end of FY2010
- Achieve RIP/RC at all MRSs identified in the first four BRAC rounds by the end of FY2009.

Restoration Progress

The Department tracks DERP progress by environmental restoration phase (e.g., investigation, cleanup, and RC) and risk category. DoD demonstrates program progress as sites move from investigation through the cleanup phases to completion of all restoration requirements. Figures 15, 16, and 17 illustrate overall DERP site status at active and BRAC installations, and FUDS properties. Through FY2006, DoD has achieved RIP/RC at 77 percent of all DERP sites, which includes all IRP, MMRP, and BD/DR sites. Only 19 percent of DERP sites are in the investigation phases and eight percent are in the cleanup phases.



¹ Includes IRP, MMRP, and BD/BR sites as of September 30, 2006.

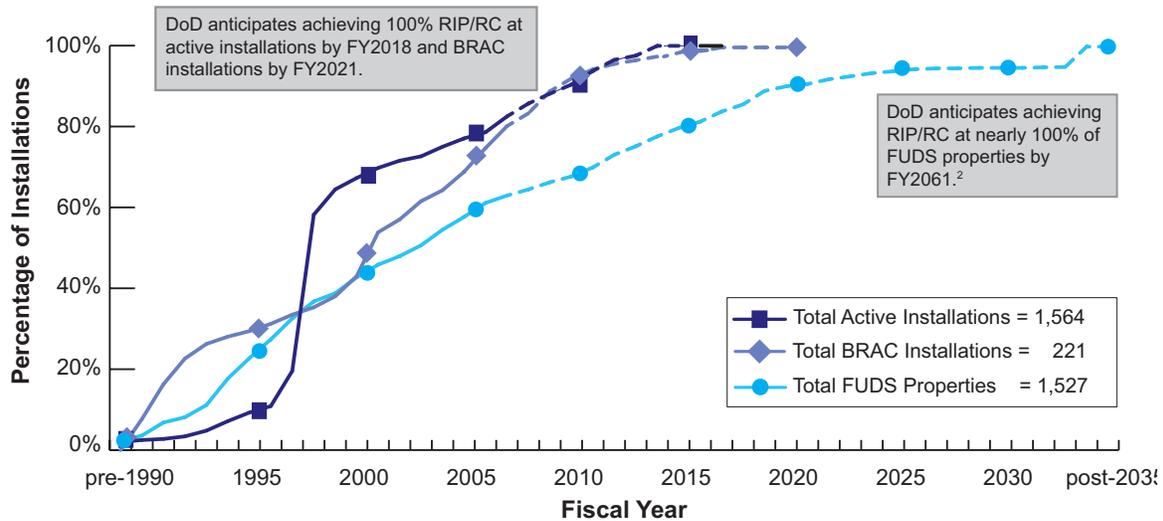
² RIP is a subset of Cleanup Planned or Underway.

³ Long-term management (LTM) is a subset of Response Complete.

⁴ Also includes incidental munitions work (i.e., non-MMRP) and BD/BR sites as of September 30, 2006.

Figure 21

Installations and FUDS Achieving Final RIP/RC at All IRP Sites^{1,2}
(Cumulative and projected, Pre-FY1990 through completion)



¹ Does not include MMRP or BD/DR sites.

² Excludes locations without environmental restoration sites and locations with only MMRP contamination.

³ This graph does not show FUDS properties reaching 100 percent RIP/RC because completion dates have not been determined for some properties. This graph does not include MMRP, BD/DR, PRP, or No DoD Action Indicated properties or projects.

IRP Site Status and Progress

DoD evaluates progress toward IRP goals by reviewing both progress-to-date and the anticipated future progress. By evaluating these performance metrics, DoD is able to identify and address programmatic areas for improvements.

IRP Site Progress by Phase

DoD has advanced the majority of its sites in the IRP from the investigation and study phases toward completing response actions. DoD has achieved RIP/RC status at 83 percent of all IRP sites. Figures 18, 19, and 20 show the status of IRP sites at active and BRAC installations and FUDS properties as of the end of FY2006. These figures show that DoD has achieved RIP/RC status at 85 percent of active IRP sites, 85 percent of all BRAC IRP sites, and 67 percent of FUDS properties, including those identified during BRAC 2005, and indicate that the Department is moving forward in its commitment to complete restoration actions.

IRP Installation Progress

Another performance measure DoD uses to gauge progress is the achievement of RIP/RC status at the installation and project level, which is reached when all sites at an installation or project have achieved RIP/RC status. By the end of FY2006, DoD achieved RIP/RC status at 70 percent of its current and former defense properties. This represents 79 percent of active installations, 75 percent of BRAC

installations, and 61 percent of FUDS properties. Figure 21 shows DoD's expected RIP/RC status completion trends for active and BRAC installations and FUDS properties. DoD anticipates achieving RIP/RC at active installations by FY2018, BRAC installations by FY2021, and FUDS properties by FY2061.

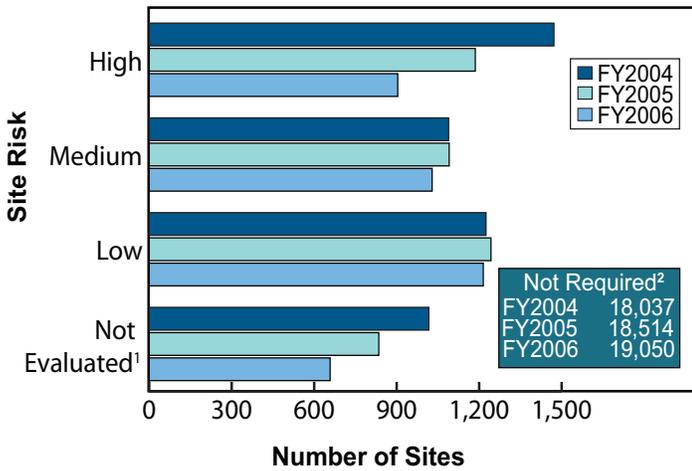
IRP Relative-Risk Reduction

DoD also reviews the number of sites in each relative risk category to evaluate progress towards DoD's goals for active installations and FUDS. The Department exceeded its FY2002 goal of achieving RIP/RC status at 50 percent of high-risk sites and continues this progress in reducing the number of sites in each relative risk category, particularly the high-risk category, as illustrated in Figure 22. As of FY2006, DoD has achieved RIP/RC status at 72 percent of high relative-risk sites, indicating that DoD is making progress toward its FY2007 goal of achieving RIP/RC at all high relative-risk sites.

In addition, DoD has been successful in reducing the number of medium and low relative-risk sites. Figure 22 shows that DoD has reduced the number of medium relative-risk sites from 1,091 in FY2005 to 1,029 in FY2006. DoD is on track to achieve RIP/RC status at all medium relative-risk sites by FY2011 and at all remaining relative-risk sites at active installations by FY2014.

Figure 22

Active Installations and FUDS Property RRSE Progress



¹ The "Not Evaluated" category includes a large number of FUDS projects that are exclusively associated with aboveground and underground storage tanks; sites requiring RRSE will be determined after tank removal.

² The "Not Required" category includes sites that have already achieved RIP/RC, as well as IRP sites requiring BD/DR or PRP actions. MMRP sites are excluded from the chart.

MMRP Site Status and Progress

DoD continues to build the MMRP and is making progress on all the key program elements, including setting program progress goals. The MRS inventory is updated annually and is released in conjunction with the Defense Environmental Programs Annual Report to Congress. Since the initial reconciliation between lists maintained by DoD and other

government agencies, changes in the inventory do not necessarily reflect newly discovered MRSs, but rather a division of large munitions response areas into multiple discrete MRSs. The current inventory is publicly available at <http://deparc.egovservices.net/deparc/do/mmrp>.

MMRP Site Progress by Phase

By the end of FY2006, DoD had identified 3,316 MRSs, an increase of seven sites from FY2005. Similar to IRP sites, MRSs are categorized according to phase status in the response process. Figures 23, 24, and 25 show the status of MRSs at active and BRAC installations and FUDS properties. Munitions response actions have been a part of the DERP for several years, primarily at BRAC installations and FUDS properties, providing DoD with solid experience in addressing the environmental and safety hazards associated with the past use of military munitions. As a result, DoD has achieved RC status at 122 MRSs at BRAC installations and 473 MRSs at FUDS properties.

While proposed performance goals are being finalized, DoD has already begun completing response actions at MRSs and has achieved RC status at:

- + Seventeen percent of sites at active installations
- + Thirty-three percent of sites at BRAC installations
- + Twenty-nine percent of sites at FUDS properties.

Figure 23

Active Installations
FY2006 MMRP Site Status

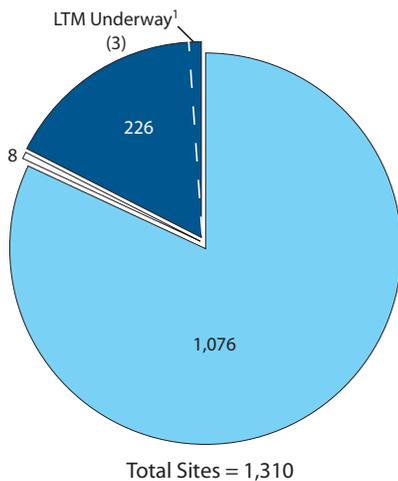


Figure 24

BRAC Installations
FY2006 MMRP Site Status

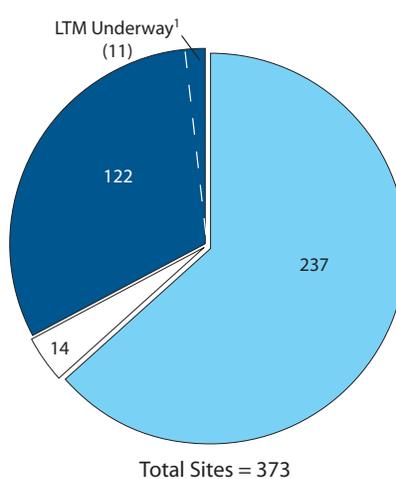
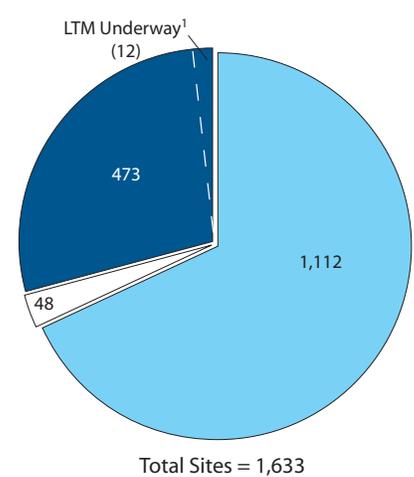


Figure 25

FUDS Properties
FY2006 MMRP Site Status



■ Response Complete ■ Investigation Planned or Underway □ Cleanup Planned or Underway

¹ LTM is a subset of Response Complete.

To support military operations, the Department of Defense (DoD) must protect and sustain environmental resources needed to support the mission. DoD's Compliance Program requires the Department to manage environmental protection through compliance with environmental regulations, including those for the protection of air and water resources and waste disposal. The program is designed so that DoD facilities meet federal, state, and local environmental laws and regulations while continually improving stewardship of natural and cultural resources found on lands and water bodies used by DoD. The Department provides the Components with guidance and procedures for meeting regulatory standards and hosts periodic reviews to measure DoD's progress toward meeting compliance requirements.

DoD's compliance activities encompass planning, programming, and budgeting to achieve, maintain, and monitor compliance with applicable environmental requirements. The Department actively develops plans and programs for enhancing environmental quality and uses commercially proven or innovative solutions to meet and exceed compliance requirements. DoD conducts internal and external compliance self-assessments at installations; reports all information required by applicable statutes, regulations, permits, orders, and agreements; promptly corrects any environmental violations discovered; and appropriately remedies any harm done. The Department also uses supplemental environmental projects to improve compliance and strives to reduce compliance costs through pollution prevention activities.

DoD's performance metrics for Clean Air Act (CAA), Clean Water Act (CWA), and Safe Drinking Water Act (SDWA) requirements, as well as enforcement actions and any associated fines and penalties, are further detailed in this section.

Air Quality

DoD manages air pollutant emissions to protect public health, meet national clean air standards, and maximize operational flexibility. The Department's air pollution

compliance programs are designed based on requirements established in the Clean Air Act and its amendments.

Additional information on DoD's effort to protect air quality is located in Appendix S: Air Quality.

Clean Air Act Requirements

Air pollutants that are generated from normal DoD operations can cause injury to human health, harm the environment, and cause property damage. The CAA regulates emissions of these air pollutants from area, stationary, and mobile sources. DoD Instruction (DoDI) 4715.6, "Environmental Compliance," establishes a framework for measuring DoD's compliance with the CAA.

DoD's Compliance Program helps the Department manage air pollutant emissions, make appropriate investments to promote the attainment of National Ambient Air Quality Standards (NAAQS), and enhance training and operational flexibility by maximizing the use of air resources, while leveraging energy conservation opportunities. DoD tracks emissions for both criteria air pollutants and total hazardous air pollutants (HAPs). Criteria air pollutants are the six principal pollutants that have NAAQS and include: ozone (O₃), nitrogen oxides (NO_x), inhalable coarse and fine particulate matter (PM₁₀ and PM_{2.5}, respectively), sulfur dioxide (SO₂), carbon monoxide (CO), and lead (Pb). DoD reports volatile organic compounds (VOCs) with the criteria pollutants because VOCs and NO_x are precursors to O₃, which is not directly reported. Congress identified nearly 200 HAPs known to have harmful health effects under the CAA. Most of the HAPs are organic compounds, such as benzene, although some are toxic metals and their compounds. Figure 26 details the Department's CAA emissions in Calendar Year (CY) 2005.

The Department reports annually on metrics designed to ensure DoD activities remain protective of air resources. To minimize impacts on air resources, DoD collects information on the quantity of regulated air pollutant emissions identified in the laws and regulations of the U.S. or host nation, which are known as Final Governing Standards; reduces energy use; and manages the cost of air pollution.

Water Quality

The success of DoD's mission and the quality of life for DoD personnel, their families, and nearby communities relies directly on protecting and preserving the natural resources surrounding installations and those affected by military operations. To protect water assets, DoD strives to comply with U.S. Environmental Protection Agency (EPA) and state water quality and drinking water standards at all of its facilities. These standards describe allowable uses for bodies of water and establish protective water quality criteria.

Additional information on DoD's efforts to protect water quality is located in Appendix T: Water Quality.

Clean Water Act Requirements

The CWA requires all facilities that discharge wastewater in the nation, including federal facilities, to have permits that establish pollution limits and specify monitoring and reporting requirements. National Pollutant Discharge Elimination System (NPDES) permits, issued by either EPA or by a state with permitting authority from the EPA, regulate pollutants discharged into surface waters by industrial, municipal, and other facilities. DoDI 4715.6, "Environmental Compliance," establishes a framework for measuring DoD's compliance with its NPDES permits in accordance with the CWA.

DoD effectively manages domestic and industrial wastewater and stormwater to: protect public health; meet clean water standards; maximize operational flexibility; protect watersheds and ensure availability of discharge capacity to support the mission; and leverage water conservation opportunities. To measure success, DoD collects information on the number of water pollution control permits and the number of permits that are in compliance.

DoD currently holds 1,764 NPDES permits, encompassing discharges to domestic and industrial wastewater treatment facilities, publicly owned treatment works, and stormwater systems. DoD's compliance rate has increased over the last few years, with 96 percent of DoD's NPDES permitted facilities in compliance for the first half of CY2006, as reported in Figure 27. EPA measures only the compliance of DoD's major NPDES permitted facilities, while DoD measures the compliance of all DoD NPDES permits. Because of this, the compliance rate reported here may differ from EPA's report of DoD's compliance rate.

Figure 26
CY2005 CAA Air Emissions

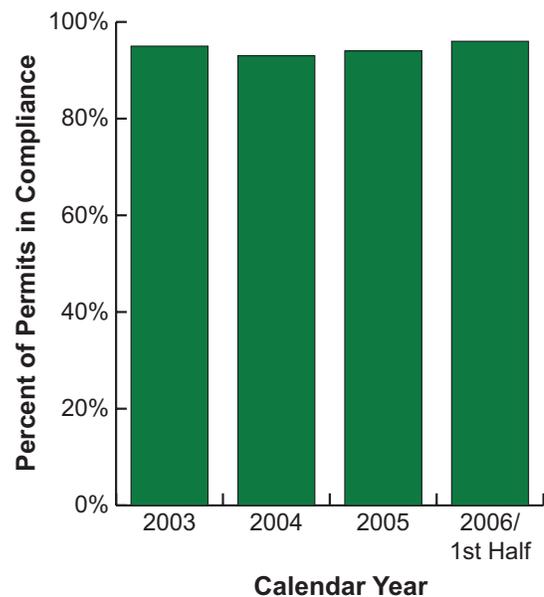
	DoD Totals (tons/year)
Total HAPs	2,428.52
Criteria Air Pollutants	
VOCs	9,583.88
NO _x	17,673.78
PM ₁₀	44,614.54
PM _{2.5}	280.61
SO ₂	18,028.08
CO	56,884.13
Pb	21.92

Safe Drinking Water Act Requirements

To protect against both naturally occurring and man-made contaminants that may be found in drinking water, the SDWA authorizes EPA to set health-based standards for drinking water and monitor the quality of the nation's drinking water supply to protect public health. These drinking water standards apply to all public water systems (PWSs), including DoD's drinking water systems.

DoD strives to consistently provide safe drinking water to protect the health of people living and working on DoD installations; protect, restore, and sustain water resources to ensure long-term capability at installations; and support readiness by conserving resources through efficient

Figure 27
CWA Compliance Rate



management of drinking water assets. To ensure these goals are met, the Department annually collects information on the percentage of the DoD population served by DoD PWSs that meet established drinking water requirements and the annual cost of managing drinking water.

During the first half of CY2006, DoD provided drinking water to more than 3.5 million people. Approximately 97 percent of this population received drinking water that met all established drinking water requirements. DoD frequently tests all supplied water, and if a PWS does not meet standards, DoD notifies its customers. Only 3 percent of this population received at least one public notification of a drinking water violation in the first half of CY2006, as shown in Figure 28. In all instances, DoD continued to make active efforts to correct any exceedance.

Enforcement Actions and Fines

DoD manages all compliance activities to ensure full and sustained compliance with U.S. environmental laws and overseas environmental obligations; maintain robust self-audit and corrective action programs; and identify and correct noncompliance in a timely manner. Despite best efforts, occasional instances of noncompliance arise and, as a result, DoD is subject to enforcement actions and the associated fines and penalties. DoD makes a concerted effort to reduce enforcement actions because they negatively impact human health, the environment, and the mission by diverting resources away from other activities.

Additional information on Fiscal Year (FY) 2006 enforcement actions is located in Appendix U: Enforcement and Fines.

Enforcement Actions

Since FY2000, open enforcement actions against DoD have declined 34 percent. Once open, legal issues, such as whether the federal government has waived its sovereign immunity and can pay penalties to state or local regulators, make enforcement actions difficult to close. Despite the difficulties, the number of open enforcement actions decreased from 169 in FY2005 to 163 in FY2006, indicating DoD's success at closing 4 percent of open enforcement actions, as seen in Figure 29. Of the remaining open enforcement actions, 83 percent are administrative actions rather than project-related actions. Administrative actions represent minimal impact to human health and the environment.

DoD strives to minimize the number of new enforcement actions accrued by performing periodic assessments and audits to identify and correct areas of possible noncompliance before regulatory inspections occur. Since FY2000, new enforcement actions have declined by 18 percent, as seen in Figure 29. The number of new enforcement actions in FY2006 decreased by four percent to 272 actions.

Fines and Penalties

DoD facilities may be subject to fines and penalties if they are found to be in noncompliance with federal, state, or local environmental laws and regulations. This can result in fines

Figure 28
SDWA Compliance Rate

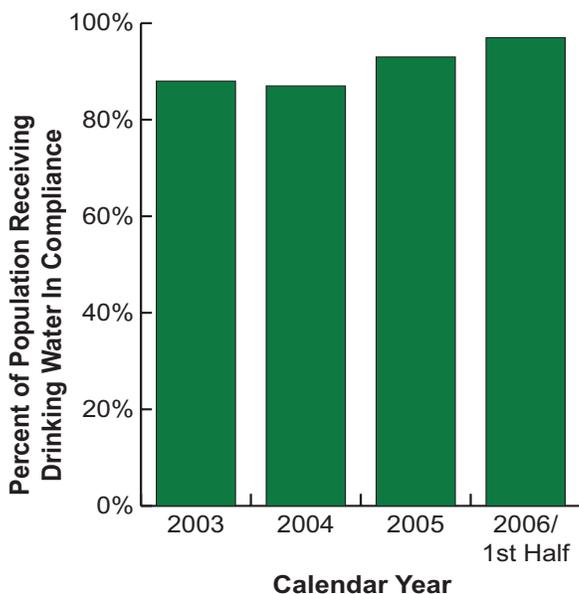
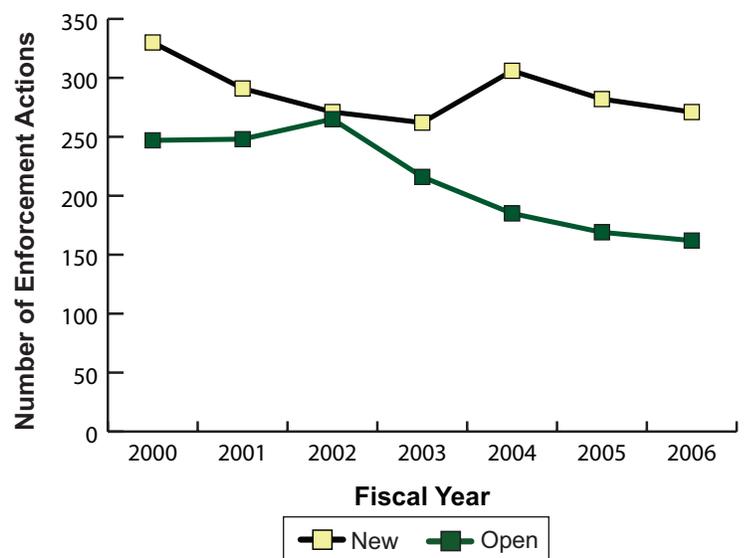


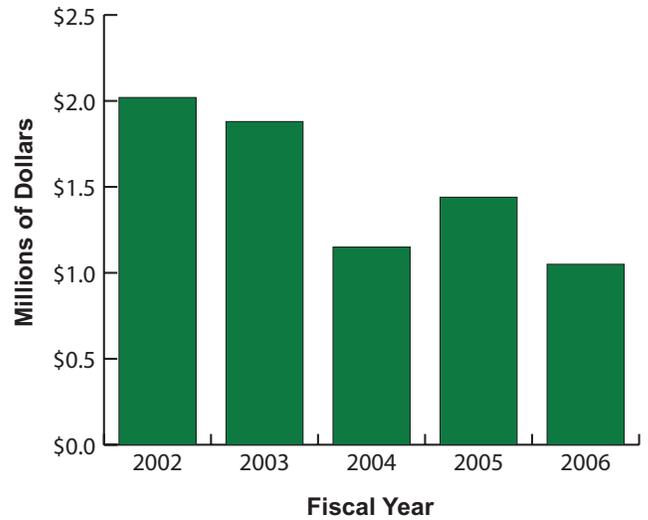
Figure 29
Compliance Enforcement Actions



and penalties that may have a negative impact on DoD's mission by limiting the ability to test new equipment and train personnel or by preventing the use of noncompliant facilities and equipment.

Figure 30 shows the trends in fines and penalties assessed from FY2002 through FY2006. Since FY2002, the amount DoD has been assessed for noncompliance has decreased 49 percent. The amount of fines assessed during FY2006 totaled nearly \$1.2 million, approximately \$300,000 less than FY2005.

Figure 30
Fines and Penalties Assessed



Pollution can adversely affect the Department of Defense's (DoD's) mission by harming DoD personnel and surrounding communities, property DoD holds in public trust, and the facilities that support military readiness. DoD employs pollution prevention as its preferred approach to environmental management because it can be integrated into day-to-day mission activities. DoD's approach through the Pollution Prevention Program includes recycling; reducing the use of hazardous materials and developing safer alternatives; purchasing environmentally preferable products; reducing toxic chemical releases; eliminating the use of ozone-depleting substances (ODSs); and ensuring that the Department's activities do not adversely impact the nation's air, water, and land resources.

In Fiscal Year (FY) 2006, DoD continued to meet and surpass its pollution prevention goals and objectives. DoD sponsored a Department-wide biobased products event at the Pentagon in support of the Department's Green Procurement Program (GPP), as well as other federally mandated requirements. In addition, DoD exceeded its 40 percent diversion rate goal for non-hazardous solid waste and in FY2006 had an overall diversion rate of 60 percent. DoD installations also continued to employ strategies to decrease toxic chemical releases and manage the use of ODSs.

Solid and Hazardous Waste Management

DoD employs integrated solutions to prevent solid and hazardous wastes from entering disposal facilities, focusing on reducing waste generation and diverting solid waste materials from the waste stream through recycling whenever feasible and cost effective. In 1998, Executive Order (E.O.) 13101, entitled "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition," established a goal for solid waste diversion. In response to this requirement, the Department set a diversion rate goal of 40 percent or greater by the end of Calendar Year (CY) 2005. To track the Department's progress, DoD established a total solid waste diversion rate metric in 1998 to calculate the rate at which installations divert non-hazardous solid waste from

entering a disposal facility. Total generation of solid waste includes construction and demolition (C&D) debris and non-hazardous municipal solid waste. This goal was met in FY2001, when DoD diverted 45 percent of its solid waste, as illustrated in Figure 31. In FY2005, DoD revised the solid waste metric to differentiate between C&D debris and municipal solid waste diversion.

In FY2006, DoD generated a total of 6.3 million tons of solid waste, consisting of 3.6 million tons of C&D debris and 2.7 million tons of non-hazardous municipal solid waste. In FY2006, the generation of municipal solid waste equated to 3.8 pounds per person per day. The Department's overall FY2006 diversion rate was 60 percent, which includes a 75 percent C&D debris diversion rate and a 40 percent non-hazardous municipal solid waste diversion rate. Figure 32 shows the quantities of solid waste generated and diverted and percent diverted by Component. In FY2006, the solid waste program produced cost savings of over \$160 million through integrated solid waste management practices, including reducing the amount of solid waste and C&D debris received by a landfill or incinerator, and the associated costs.

Figure 31
DoD Solid Waste Diversion

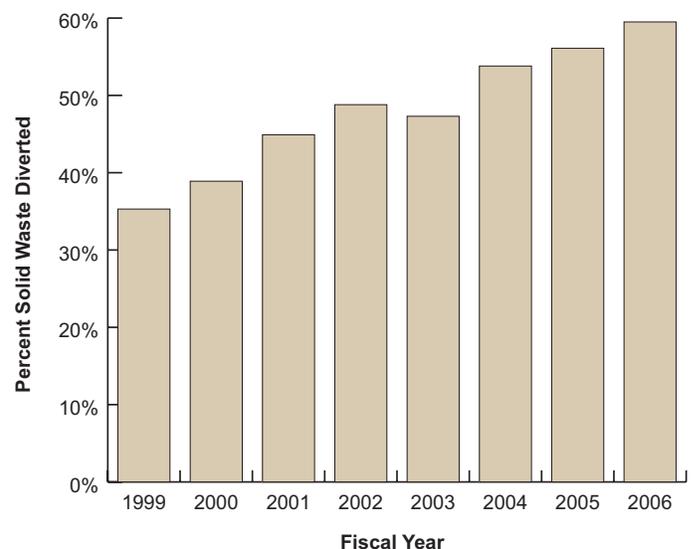


Figure 32
FY2006 Solid Waste Diversion

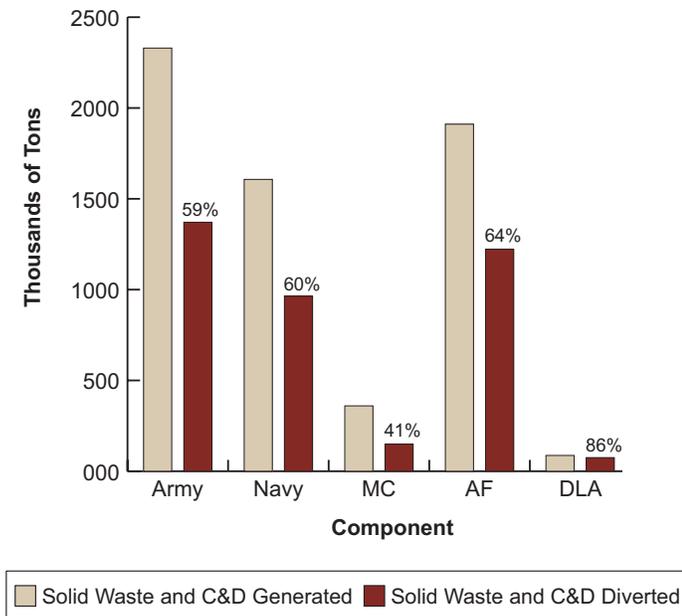
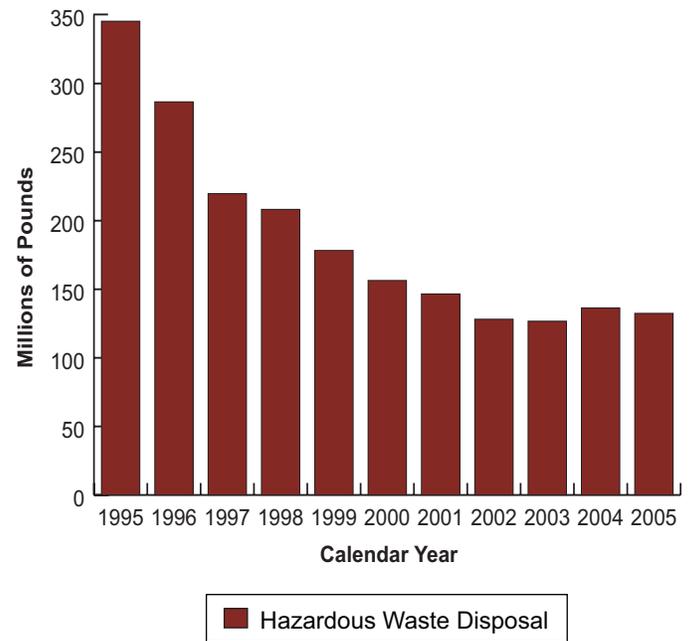


Figure 33
DoD Hazardous Waste Disposal



From CY1995 to CY2005, the total amount of hazardous waste disposed of declined by 62 percent as seen in Figure 33. In addition, in CY2005, DoD's hazardous waste efforts prevented over 132 million pounds of hazardous waste from being disposed of into the environment. This reduction is due to DoD personnel identifying opportunities to reduce hazardous waste generation.

Additional information on solid and hazardous waste management is located in Appendix V: Solid and Hazardous Waste.

Green Procurement Program

DoD is a leader within the federal government in promoting the procurement and use of environmentally preferable products and services. The Department jointly manages a formal procurement program, established in FY2004, to assist the Components with purchasing environmentally friendly products. The program's purpose is to enhance and sustain mission readiness through cost-effective acquisition that reduces resource consumption and solid and hazardous waste generation, while enabling the Department to remain in compliance with federal laws and regulations. The GPP applies to all acquisitions, from major systems programs to individual unit supply and service requisitions, and considers several factors, including energy use, conservation of resources, price, and safety.

To expand the GPP, DoD works with other federal partners. In FY2005, DoD was one of 12 federal agencies

to sign a Federal Electronics Challenge Memorandum of Understanding promoting the implementation of environmentally preferable, energy efficient, and cost-effective practices when buying, using, and managing the life cycle of electronic assets. In February 2006, DoD and 20 other federal agencies participated in the 2nd Annual Federal Electronics Stewardship Conference, which brought agencies together to exchange ideas about best practices in the acquisition, operations, and end-of-life management of electronics.

In August 2006, DoD issued a memorandum supporting U.S. Department of Agriculture efforts to promote the use of biobased products. The memorandum encourages and reemphasizes the importance of using biobased products in DoD operations and applications wherever feasible. As the largest federal buyer of goods and services, DoD is setting a national example by buying biobased products and encouraging other federal agencies to follow suit.

Many biobased products replace non-renewable fossil energy-based products derived from imported oil and natural gas, and therefore support the President's initiative of reducing dependence on foreign sources of energy. In FY2006, the Department hosted a biobased products showcase and educational event to facilitate information sharing among the biobased product industry and those in the Department who specify, buy, and use commercial or industrial products in DoD operations.

Additional information on DoD's GPP is located in Appendix W: Green Procurement.

Toxics Release Inventory

DoD continues to work to reduce the Department's Toxics Release Inventory (TRI) releases. In FY2000, E.O. 13148, entitled "Greening the Government Through Leadership in Environmental Management," required that federal agencies reduce reported TRI releases and offsite transfers of toxic chemicals for treatment and disposal by 10 percent annually or 40 percent overall by December 31, 2006. Based on a 2001 baseline year, this 40 percent reduction goal is in addition to the 50 percent reduction DoD had already achieved between 1994 and 1999.

A large portion of TRI-reported releases occur as by-products of critical DoD manufacturing and utilities processes, and DoD cannot easily reduce these releases (e.g., nitrate compounds from wastewater treatment and hydrochloric acid from coal-fired heating plants). For DoD to make further TRI reductions requires significant resource investment and the development of new technologies, while maintaining mission capability. Because of these challenges, DoD is not likely to meet the goal of a 40 percent reduction in TRI releases from a 2001 baseline by the end of CY2006. TRI-reported release data are available through CY2005, as the data are not reported to the U.S. Environmental Protection Agency until July the following year (i.e., CY2006 data are reported in July 2007).

Additional information on TRI is located in Appendix X: Toxics Release Inventory for Calendar Year 2005.

Ozone-Depleting Substances

E.O. 13148 also established a requirement for federal agencies to reduce and manage the use of ODSs at federal facilities. Specifically, E.O. 13148 required the

development of a plan to phase out acquisition of Class I ODSs by December 31, 2010. While there are two types of ODSs, this requirement focuses on Class I ODSs, since they have a higher ozone-depleting potential. The Class I category includes: chlorofluorocarbons (CFCs), halons, carbon tetrachloride, methyl chloroform, and hydrobromofluorocarbons. Military uses for the ODSs include shipboard and submarine refrigeration; onboard aircraft, carrier deck, and flight line fire protection; and armored vehicle explosion suppression.

Each DoD Component has taken its own approach to reducing ODSs based on specific mission requirements. For example, the Army instituted an aggressive ODS elimination policy emphasizing the elimination of ODSs from legacy weapon systems. The Navy developed a comprehensive four-pronged approach to eliminate the use of Class I ODSs at facilities and in mission-critical weapon systems. The Marine Corps has completed implementation of ODS elimination initiatives at the installation level with the exception of two facilities. The Corps is also implementing a transition plan to upgrade fire suppression systems for the Light Armored Vehicle to non-ODS technology. The Air Force adopted a centralized ODS management program to ensure appropriate emphasis on the elimination of ODS usage as technically and economically feasible alternatives became available. The Defense Logistics Agency supports war-fighting readiness and preparedness through the management of the DoD ODS Reserve, the only available source within DoD of Class I ODSs.

Additional information on ODSs is located in Appendix Y: Ozone-Depleting Substances.

The Department of Defense (DoD) prides itself on a record of sound environmental management. Through the Conservation, Restoration, Compliance, and Pollution Prevention Programs, DoD preserves, restores, and manages its abundant land, air, and water resources. To sustain these resources, DoD is continually improving its environmental management programs and strategies to protect human health and the environment, while supporting the military mission to ensure America's security.

To continue to train and test military capabilities, DoD must maintain the resources upon which it depends. DoD installations contain some of the finest remaining examples of rare native vegetative communities, such as old-growth forests, tallgrass prairies, and vernal pool wetlands, and conservation efforts ensure that the Department's vast natural and cultural resources are managed for long-term use. DoD developed the Sustainable Ranges Initiative (SRI) to respond to encroachment concerns to preserve DoD's capability to train and test on its land and sea ranges, operating areas, and airspace. In the coming year, DoD hopes to continue SRI efforts by investing in partnerships through DoD's Readiness and Environmental Protection Initiative.

DoD uses the Defense Environmental Restoration Program to restore property on current and former defense properties that are environmentally impacted by past defense activities. At Base Realignment and Closure (BRAC) installations, DoD ensures that transferred property is safe for reuse, providing DoD with the ability to realign and deal effectively with military transformation. In November 2005, Congress authorized the latest round of BRAC closures and realignments. Many of the installations identified under this BRAC round already have mature environmental programs and have undergone at least some environmental restoration work. This head start to the cleanup process, coupled with the available tools and techniques for expedited transfer and redevelopment, should enable the Components to complete cleanup and transfer in significantly shorter time frames than previously seen.

DoD remains committed to preserving natural and cultural resources by achieving full and sustained compliance with all federal, state, and local environmental laws and regulations. To maintain efficient and effective compliance, DoD provides the Components with guidance and procedures for meeting regulatory requirements and conducts self-assessments to measure progress toward meeting compliance requirements. DoD also complies with periodic requests for additional information related to both emerging environmental issues and contamination from past activities. Currently, DoD is researching available records related to the number, size, and probable locations of sites where the military disposed of military munitions in coastal waters.

In addition to addressing cleanup of contamination from past activities, the Department uses the Pollution Prevention Program to reduce the impact current DoD activities have on human health and the environment. Pollution prevention is defined as a proactive approach to environmental management that aims to reduce the negative impacts of all DoD operations. In 2004, DoD implemented the Green Procurement Program (GPP) to encourage reducing resource consumption and solid and hazardous waste generation. As part of the GPP strategy, all DoD activities are directed to purchase and use biobased products and to initiate projects that demonstrate the utility of biobased materials in DoD operations whenever possible.

In the years ahead, DoD will continue to address environmental management through both restoration of legacy environmental hazards and proactive approaches to managing current environmental assets. Cleaning up contamination from past activities protects both military personnel and the public from environmental health and safety hazards and preserves the ability of United States forces to train effectively. Sustainment, of the environment, human health, and military readiness, is the foundation of DoD's environmental strategy—a strategy that will help DoD continue as an environmental leader.