Defense Environmental Programs Annual Report to Congress for Fiscal Year 2024

Pursuant to Title 10, United States Code, Section 2711

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Office of the Assistant Secretary of Defense
for Energy, Installations, and Environment

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TABLE OF CONTENTS

TABLES

I. INTRODUCTION

This Defense Environmental Programs Annual Report to Congress for Fiscal Year (FY) 2024 contains information on the progress of the Department of Defense's (DoD's) environmental programs, including Environmental Restoration, Environmental Planning and Conservation (EP&C), Environmental Compliance, Installation Resilience, and Installation Technology, pursuant to title 10, United States Code (U.S.C.), Section 2711. The Department's ability to conduct realistic live-fire training, weapon systems testing, and other essential operations is vital to preparing a more lethal and resilient combat force. To meet these requirements, warfighters rely on unencumbered access to high-quality, open lands and ranges that contain a variety of environments and replicate the real-world conditions in which they may operate. Each program within DoD's environmental portfolio directly supports mission readiness and warfighter lethality by strengthening operational capacity, reducing costs, and increasing installation resilience. More than two million (M) military and civilian personnel live, work, and train on DoD installations, which include extensive built and natural infrastructure. It is a national security imperative to ensure that these spaces are effective, enduring places for current and prospective warfighters, their families, and the civilian workforce.

II. ENVIRONMENTAL RESTORATION PROGRAM

The Department began its environmental restoration efforts in 1975 with the Installation Restoration Program (IRP). The IRP addresses contamination from hazardous substances, pollutants, or other contaminants at active and reserve installations, Formerly Used Defense Sites (FUDS) properties, Base Realignment and Closure (BRAC) locations, and National Guard sites in the United States. In 2001, DoD established the Military Munitions Response Program to address defense sites (e.g., closed military ranges) known or suspected to contain unexploded ordnance (UXO), discarded military munitions, or munitions constituents. These sites are referred to as munitions response sites (MRSs). Through these programs, DoD complies with the Federal cleanup law, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, also known as Superfund. These programs prioritize the health and safety of military communities and their neighbors, ensuring that Service members can focus on the mission without concerns about environmental hazards affecting themselves and their families.

The Department remains focused on continuing to improve the restoration program through minimizing overhead, adopting new technologies to reduce cost and accelerate cleanup, refining and standardizing DoD's cost estimating, and improving its relationships with State regulators and affected communities through increased dialogue. These initiatives help ensure that DoD makes the best use of its available resources to complete cleanup while supporting warfighter readiness. The Department measures cleanup progress against the Response Complete (RC) milestone, which occurs when the cleanup activities are complete (although DoD or a subsequent owner may continue to monitor the site). Of the 40,922 IRP sites and MRSs in the inventory, DoD has achieved the RC milestone at 34,379 sites (84-percent).

Additional information about the status of DoD's cleanup efforts and funding can be found on the DoD Cleanup website at https://www.denix.osd.mil/cleanup/.

IRP Site Inventory and Status

Table 1 summarizes the inventory and cleanup status of IRP sites at active installations, FUDS properties, and BRAC locations. The table presents the number of sites in the inventory, the number of sites at Remedy in Place (RIP)[1] and RC through FY 2023 and FY 2024, and the changes in RIP and RC status from FY 2023 to FY 2024.

Table 1: IRP Site Inventory and Status

	Total IRP Inventory (FY 2024)	RIP			RC		
		Number of IRP Sites at RIP through FY 2023	Number of IRP Sites at RIP through FY 2024	Change in RIP Status from FY 2023 to FY 2024	Number of IRP Sites at RC through FY 2023	Number of IRP Sites at RC through FY 2024	Change in RC Status from FY 2023 to FY 2024
Active Installations*							
Army	11,625	10,742	10,771	29	10,460	10,486	26
Department of the Navy (DON)**	4,274	3,623	3,592	-31+	3,442	3,421	-21+
Air Force	7,639	6,207	6,219	12	5,809	5,824	15
Defense Logistics Agency (DLA)	226	196	197	1	188	189	1
Active Total	**23,764**	**20,768**	**20,779**	**11**	**19,899**	**19,920**	**21**
FUDS Properties							
FUDS Total	**3,125**	**2,797**	**2,802**	**5**	**2,742**	**2,748**	**6**
BRAC Locations							
Army	2,120	2,018	2,019	1	1,971	1,972	1
DON**	1,151	1,106	1,097	-9**	1,012	1,012	0
Air Force	5,148	5,044	5,047	3	4,930	4,933	3
DLA	48	48	48	0	47	47	0
BRAC Total	**8,467**	**8,216**	**8,211**	**-5**	**7,960**	**7,964**	**4**
DoD Total	**35,356**	**31,781**	**31,792**	**11**	**30,601**	**30,632**	**31**

* Active installations include National Guard sites.
** DON includes Navy and U.S. Marine Corps (USMC). DON manages Navy and USMC environmental restoration activities as a combined program.
+ The number of sites at RIP and RC decreased because DON reopened these milestones to investigate per- and polyfluoroalkyl substances (PFAS) at some sites.
*** The number of sites at RIP decreased because DON reopened this milestone to investigate PFAS at some sites and due to the discovery of additional contamination at some sites.

MRS Inventory and Status

Table 2 summarizes the inventory and cleanup status of MRSs at active installations, FUDS properties, and BRAC locations. The table presents the number of MRSs in the inventory, the number of MRSs at RIP and RC through FY 2023 and FY 2024, and the changes in RIP and RC status from FY 2023 to FY 2024.

[1] The Department measures the number of sites at RIP, which occurs when cleanup systems are constructed and operational.

Table 2: MRS Inventory and Status

	Total MRS Inventory (FY 2024)	RIP			RC		
		Number of MRSs at RIP through FY 2023	Number of MRSs at RIP through FY 2024	Change in RIP Status from FY 2023 to FY 2024	Number of MRSs at RC through FY 2023	Number of MRSs at RC through FY 2024	Change in RC Status from FY 2023 to FY 2024
Active Installations*							
Army	1,404	1,221	1,241	20	1,214	1,233	19
DON**	425	226	238	12	218	231	13
Air Force	1,034	914	908	-6+	913	907	-6+
DLA	7	0	0	0	0	0	0
Active Total	**2,870**	**2,361**	**2,387**	**26**	**2,345**	**2,371**	**26**
FUDS Properties							
FUDS Total	**2,332**	**1,064**	**1,079**	**15**	**1,064**	**1,079**	**15**
BRAC Locations							
Army	179	143	145	2	142	144	2
DON**	43	22	22	0	22	22	0
Air Force	142	131	132	1	130	131	1
DLA***	0	N/A	N/A	N/A	N/A	N/A	N/A
BRAC Total	**364**	**296**	**299**	**3**	**294**	**297**	**3**
DoD Total	**5,566**	**3,721**	**3,765**	**44**	**3,703**	**3,747**	**44**

* Active installations include National Guard sites.
** DON includes Navy and USMC. DON manages Navy and USMC environmental restoration activities as a combined program.
+ The number of sites at RIP and RC decreased because the Air Force transferred 10 MRSs that had achieved these milestones to DON in FY 2024.
*** DLA does not have MRSs at BRAC locations.

Cost-to-Complete Estimate

The remaining Cost-to-Complete estimate for Defense Environmental Restoration Program (DERP) sites, as of the end of FY 2024, is $56.15 billion (B). This includes $48.68B in installation project funding allocated to individual sites and $7.46B in program management and other support costs that cannot be attributed to individual sites. The $56.15B estimate includes $10.29B to address DoD's PFAS releases.

The Department recognizes the importance of providing comprehensive information regarding the costs associated with investigating and cleaning up PFAS. To that end, Table 3 presents actual obligations for investigations and cleanup of DoD releases of PFAS through FY 2022, in FY 2023, and in FY 2024, as well as the estimated costs for investigations and cleanup of DoD releases of PFAS in FY 2025 and after FY 2025.

The funding data provided in Table 3 represents the Department's estimates of the funding obligated and to be obligated for investigations and cleanup of DoD releases of PFAS as of the end of FY 2024. These cost estimates are based on information known at the time the estimates were developed and are subject to change as the ongoing investigations are completed and more information is known about the extent of the cleanup required.

DoD's PFAS cost estimates are completed on a site-specific basis and are based on factors such as the concentration and extent of the PFAS release, characteristics of the soil and groundwater flow, and potential human exposure pathways, which affect the final cleanup levels. The Department is currently conducting investigations to determine these and other factors that affect the total cost to clean up DoD's PFAS releases. These factors can vary significantly from site to site across the country and variations in any or all of these factors could change an individual site's cost estimate by an order of magnitude.

DoD expects the estimates to increase as the DoD Components complete the ongoing investigations, learning more about the extent of PFAS cleanup required. Further, the costs for cleanup will vary significantly depending on the amount and extent of PFAS at a specific location, as well as other site-specific characteristics that are determined during the remedial investigation/feasibility study phase, and the remedy that is selected. The Department cannot estimate the complete cost of cleanup until it knows this information. The Department will continue to assess new information from ongoing investigations and technological advancements to annually refine cost estimates of total fiscal exposure related to PFAS investigation and cleanup and make more informed decisions regarding resource allocation and remediation strategies. The DoD Components will plan and program for these requirements as they are defined. Additional information about DoD's efforts related to PFAS can be found at http://www.defense.gov/pfas.

Table 3: PFAS Actual and Planned Obligations

	Actual Obligations Through FY 2022 ($000)		Actual Obligations in FY 2023 ($000)		Actual Obligations in FY 2024 ($000)		Planned Obligations in FY 2025 ($000)		Planned Obligations After FY 2025 ($000)	
	Investigation	Cleanup	Investigation	Cleanup	Investigation	Cleanup	Investigation	Cleanup	Investigation	Cleanup
Active Installations*										
Army	152,307	1,051	87,750	1,721	28,408	16,790	39,504	61,382	176,813	51,857
DON**	256,027	36,821	70,008	4,925	106,808	8,267	48,108	13,666	397,578	131,851
Air Force	606,909	374,448	176,795	75,927	62,192	43,982	119,855	38,302	319,011	5,512,631
DLA	1,905	519	2,504	0	2,155	0	1,630	0	5,157	0
Active Total^	**1,017,147**	**412,839**	**337,056**	**82,573**	**199,563**	**69,039**	**209,097**	**113,350**	**898,559**	**5,696,339**
FUDS Properties										
FUDS Total	**8,016**	**565**	**2,422**	**97**	**9,263**	**413**	**6,112**	**45**	**9,839**	**15,978**
BRAC Locations										
Army	47,248	5,598	38,376	26	42,517	1,442	40,824	12,304	40,124	6,007
DON**	83,968	59,621	30,655	43,441	12,046	33,805	11,702	27,298	22,484	349,895
Air Force	159,854	195,121	60,952	20,261	41,817	44,972	2,566	56,097	103,628	2,670,815
DLA***	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BRAC Total^	**291,070**	**260,341**	**129,983**	**63,728**	**96,380**	**80,218**	**55,092**	**95,699**	**166,236**	**3,026,717**
DoD Total^	**1,316,233**	**673,744**	**469,461**	**146,397**	**305,205**	**149,670**	**270,301**	**209,094**	**1,074,634**	**8,739,034**

* Active installations include National Guard sites.
** DON includes Navy and USMC. DON manages Navy and USMC environmental restoration activities as a combined program.
^ Numbers may not add due to rounding.
*** There are no DLA BRAC locations that require an assessment of PFAS use or potential release.

BRAC Inventory and Status by Round

In response to U.S. Government Accountability Office-22-105207, "Base Realignment and Closure: DoD Should Provide Congress More Complete and Transparent Information," Table 4 summarizes the following information by BRAC round: the total number of BRAC sites, when BRAC sites are projected to achieve the site closeout (SC) milestone,[2] the number of sites that are projected to remain in the long-term management (LTM) phase in perpetuity, and the estimated cost associated with LTM of these sites in perpetuity.

[2] SC is the stage at which DoD has completed active management and monitoring at an environmental restoration site, and no additional environmental restoration funds will be expended at the site. SC occurs when environmental restoration goals have been achieved that allow unlimited use and unrestricted exposure (UU/UE) of the property (e.g., no further LTM, including land use controls, is required).

Table 4: BRAC Inventory and Status by BRAC Round

BRAC Round	Total Number of Sites	Final SC Date*	Number of Sites Projected to Remain in LTM in Perpetuity+	Estimated Cost Associated with LTM in Perpetuity ($000) **
1988	1,813	September 2083	103	230,392
1991	2,006	October 2069	247	427,623
1993	2,027	September 2083	163	214,836
1995	2,550	September 2066	399	287,711
2005	435	September 2070	60	71,123
BRAC Total	**8,831**	**September 2083**	**972**	**1,231,686**

* The final SC date is the date the last site is expected to achieve the SC milestone; it does not include sites projected to remain in LTM in perpetuity.
+ Sites that cannot achieve UU/UE will remain in the LTM phase in perpetuity.
** The estimated cost for LTM in perpetuity is based on a finite period of 30 years. Numbers may not add due to rounding.

III. ENVIRONMENTAL PLANNING AND CONSERVATION

DoD's EP&C portfolio sustains military readiness by ensuring continued access to the nearly 27M acres of military land, air, water, and infrastructure the Department requires to accomplish vital military training, testing, and operations. To prevent environmental-related impacts to DoD training lands and infrastructure, the EP&C portfolio works with the Military Services to increase efficiencies across Federal agencies by streamlining compliance and consultation processes. Further, the EP&C portfolio provides policy, guidance, oversight, and resources needed to manage the Department's natural and cultural resources. DoD also implements consultation policies to better work with Tribal Nations, especially through its Native American Lands Environmental Mitigation Program (NALEMP).

Cultural Resources

The DoD Cultural Resources Program (CRP) seeks to improve the Department's facility standards, readiness operations, and infrastructure development by implementing cultural resources management practices that optimize the flexibility and innovation of DoD's facilities, lands, and testing and training ranges. These efforts promote on-the-ground lethality and help rebuild the nation's military by minimizing impacts to important historic properties reflecting our shared heritage, thereby protecting mission flexibility. Additionally, DoD honors the country's military history and warrior ethos by efficiently protecting the Department's cultural resources.

DoD's CRP advances the military mission through policy development, streamlined implementation of the National Historic Preservation Act (NHPA), proactive identification and management of the Department's historic properties, and effective consultation with State and Tribal Historic Preservation Offices. To capitalize on regulatory efficiencies, DoD has developed 19 programmatic tools that streamline and eliminate individual Section 106 NHPA consultation responsibilities for over 33,000 facilities. The Department uses these tools to optimize military operations, testing, and training; streamline compliance with relevant laws early in the planning and development phases; and minimize impacts to missions, timelines, and historic properties.

As a result of DoD's proactive assessments, only 21-percent of the Department's historic real property facilities require individual review under Section 106 of the NHPA. DoD's other historic properties are managed through a Section 106 Program alternative to integrate and accelerate compliance and treatment. As of FY 2024, this portfolio includes:

- 11 active Program Comments.
- 4 Nationwide Programmatic Agreements, including Army Alternate Procedures.
- 42 individual National Historic Landmarks.
- Over 16,200 historic properties eligible for or listed in the National Register of Historic Places.
- More than 136,000 recorded archaeological sites.

Through the NHPA Section 110 Program, and in coordination with DoD's Legacy Resource Management Program, the CRP partners with the National Preservation Institute to strategically prioritize and fulfill priority historic property evaluation requirements pursuant to Section 110 of the NHPA, including survey and identification responsibilities. The Section 110 Survey Program bolsters mission readiness by executing cultural resources and historic property surveys of DoD real property and military lands, prioritized by mission needs and geostrategic focuses. The surveys and partnerships accomplished under this Program further advance the DoD mission by opening training lands for growth and facilitating demolition and upgrades to aging infrastructure and industrial base facilities. Key FY 2024 outcomes, from a $3M investment to conduct field surveys and analysis to meet NHPA Section 110 requirements at 9 project sites, include:

- Guam: Andersen Air Force Base completed a comprehensive architectural evaluation of all properties 48 years and older that had not been formally evaluated for historic significance. The evaluation also assessed the potential for historic districts in unevaluated areas to improve and accelerate base planning, growth, and development.
- South Carolina: Marine Corps Air Station Beaufort surveyed 436 acres for archaeological resources at Townsend Bombing Range, Georgia to open training land for expanded military mission activities.
- Georgia: Fort Benning evaluated 12 small arms ranges located near the cantonment area for historic significance to fast-track installation planning and construction projects.

Natural Resources

DoD and the Military Services require maximum flexibility and access to military installations and the surrounding built and natural infrastructure. The Department's Natural Resources Program enables continued access to nearly 27M acres of military land, water, and airspace. This continued access is vital to advancing the military combat readiness mission by providing realistic spaces for warfighter training, testing, and operational activities. DoD's Natural Resources Program facilitates mission-resilient landscapes that support threatened and endangered species and their habitats, minimize wildland fire risk, and reduce impacts from invasive species that pose risks to military missions and warfighter health and safety. These efforts advance installation resilience through improvements to the built and natural infrastructure and innovation in natural resources management and partnerships.

Pursuant to the Sikes Act (i.e., Title 16 U.S.C. Section 670 *et seq*.), military installations with significant natural resources are required to prepare, maintain, and implement Integrated Natural Resources Management Plans (INRMPs). INRMPs ensure "no net loss" of military mission capability on installation spaces, while providing for management, rehabilitation, and the sustainable multipurpose use of natural resources.

DoD manages over 550 Federally listed threatened and endangered species on its installations and ranges, of which 54 Federally listed species and 74 at-risk species exist only on DoD lands. The presence of and regulatory requirements associated with the Endangered Species Act (ESA) listed species on military installations may restrict training operations and increase costs related to species management, which may detract from military readiness. In FY 2018, DoD and the Department of the Interior (DOI) established the Recovery and Sustainment Partnership (RASP) Initiative. Through the RASP, DoD, DOI, and the U.S. Fish and Wildlife Service (USFWS) work together to support military readiness through greater flexibility for installation missions, streamlined regulatory processes, and efficient and effective resource management that enables the military mission and advances species recovery. Given the success of this partnership, the RASP Memorandum of Agreement was renewed in 2024.

Wildland Fire Management

The Department's Wildland Fire Management Program manages wildland fire to minimize impacts on DoD's mission, military installations, and communities surrounding installations, while leveraging beneficial outcomes for fire resilience and ecosystem functions. DoD's Wildland Fire Management Program advances installation resilience and facilitates mission sustainment by supporting the Department and installations with strategies, partnerships, tools, and policy to provide effective wildfire response and the use of prescribed fire across military lands. Specifically, these efforts allow the Department to reduce wildfire risk, protect natural and built infrastructure, maintain training land access, and improve or protect habitat and ecosystem diversity on and around military installations. Of the lands DoD manages, over 70-percent are characterized by burnable vegetation.

Currently, 267 military installations have an Integrated Wildland Fire Management Plan as a component of the installation's INRMP. In FY 2024, DoD's Wildland Fire Management Program recorded a total of 838,493 acres burned, including 206,943 acres due to wildfires and 631,550 acres treated with prescribed fire. Recognizing the frequency and severity of wildfire occurrences across military installations, DoD's Wildland Fire Management Program is improving its data collection and analysis to better plan for and adapt to wildland fire activities.

In FY 2024, the Wildland Fire Management Program's achievements included:

- Increasing interagency coordination on augmented wildfire response capabilities.
- Participating on the newly formed Interagency Post-Fire Integration Council.
- Participating in the Wildland Fire Leadership Council, National Wildfire Coordinating Group, and National Interagency Prescribed Fire Training Center.
- Securing access to the Incident Qualification and Certification System, allowing for validated and centralized credentialling and records management.

- Collaborating with the U.S. Forest Service (USFS) and USFWS on the Eastern Innovation Landscape Network to provide expedited technology transfer between the agencies (e.g., next generation fire and smoke models, virtual training, Light Detection and Ranging-based fuel surveys).

Native American Affairs

DoD recognizes Tribal Nations, their sovereignty, its Federal trust responsibilities to American Indian and Alaska Native Tribes, and obligations to Native Hawaiians Organizations (NHOs), as outlined in Federal law and regulations. DoD's Native American Affairs Program oversees consultations with Federally recognized Tribes and interactions with NHOs; administers the NALEMP; and facilitates consultation courses (CCs). In FY 2024, the Native American Affairs Program:

- Delivered a three-day American Indian CC at the National Museum of the American Indian in Washington, DC for 56 Military Department (MILDEP) staff.
- Hosted a three-part webinar series on Native Hawaiian history, culture, and effective consultation strategies for military staff working with Native Hawaiian communities.
- Delivered a two and half-day Native Hawaiian CC at Joint Base Pearl Harbor-Hickam, Hawaii for 92 Action Officers and Executives in partnership with the Indo-Pacific Command.
- Continued participation on the White House Council on Native American Affairs, enhancing interagency coordination to address Tribal concerns and improve consultation efforts.
- Began planning for the FY 2025 Alaska Native CC, in partnership with the Ted Stevens Center for Arctic Security Studies and the Alaskan Command.
- Continued updating two DoD Instructions (DoDIs), DoDI 4710.02, "DoD Interactions with Federally Recognized Tribes," and DoDI 4710.03, "Consultation with Native Hawaiian Organizations (NHOs)."

Native American Lands Environmental Mitigation Program

NALEMP addresses environmental effects of past DoD actions on Indian lands and on other locations where the Department, an Indian tribe, and the current landowner agree that mitigation is appropriate. NALEMP-eligible sites are screened to determine priority for cleanup action based on health, safety, and environmental criteria. The program addresses environmental impacts such as hazardous materials, munitions debris, underground fuel storage tanks, unsafe buildings, lead-based paint and asbestos, and abandoned equipment on NALEMP-eligible sites. NALEMP has fully abated over 112 sites in the lower 48 states and Alaska. In FY 2024, NALEMP:

- Executed 13 Cooperative Agreements (CAs) with Indian tribes, valued at $7M.
- Completed cleanup at 1 site, previously executed under an FY 2023 CA.
- Completed Step I or III Site Assessment Reports for 18 reported potential impacts with 6 tribes.

- Developed 15 pre-proposals for the FY 2025 NALEMP Short List of projects and budgets.

Legacy Resource Management Program

The DoD Legacy Resource Management Program (Legacy Program) works to avoid regulatory limitations and reduce natural hazard risks to mission-critical activities through strategic investments in natural and cultural resources management. The Legacy Program invests funds in cooperation with the Military Services to improve resource management through conservation, policy innovations, and partnerships. Projects funded by the Legacy Program develop and advance modern and innovative strategies for installations and ranges to efficiently manage and protect the Department's irreplaceable testing and training ranges, operational areas, and other mission-critical natural and cultural resources. Pursuant to its authorizing legislation (i.e., 1991 Defense Appropriations Act, Public Law 101-511, Section 8120 (as amended)), the Legacy Program works with the Military Services to establish partner projects with other Federal and State agencies, non-governmental organizations, and academia.

Since 1991, the Legacy Program has funded over 3,400 projects, totaling $405M and benefitting over 300 military installations worldwide. The Legacy Program prioritizes and invests in projects that support the military mission by:

- Providing warfighters the highest quality, realistic landscapes on which to train through proven ecosystem management strategies and techniques.
- Avoiding regulatory entanglements by funding cooperative efforts with partners, including the USFWS, to streamline processes and focus on conservation of the species with the highest potential to impact the DoD mission.
- Developing innovative approaches to ecosystem stewardship through the application of the innovative data analysis techniques (e.g., artificial intelligence, machine learning).
- Increasing installation and range resilience and minimizing threats to their missions through improved wildland fire management and risk reduction.
- Restoring trust in the military's mission and presence by improving consultation and coordination with Indian Tribal Governments, Tribal Nations, and NHOs.

By developing these projects with partners, DoD is able to efficiently and cost-effectively maintain the testing and training capabilities directly supporting military readiness. In FY 2024, the Legacy Program accomplished the following in support of the DoD mission:

- Executed, managed, and provided oversight to an $18.2M budget.
- Funded 14 projects valued at $4.5M via Military Interdepartmental Purchase Requests to the U.S. Army, U.S. Navy, and U.S. Air Force; 7 projects valued at $4.6M via CAs; and 9 projects valued at $4.1M via Interagency Agreements.
- Executed funding for 30 projects at $13.2M, including 29 natural resources projects at $10.2M and 1 cultural resources project at $3M.
- Oversaw and technically supported more than 20 ongoing, multi-year projects.
- Provided $1.6M in funding to 3 DoD technical initiatives, DoD Partners in Fight, DoD Partners in Amphibian and Reptile Conservation, and the Avian Knowledge Network.

The Program also provided additional technical oversight and support to the DoD Partners in Preservation and the DoD Small Mammal Initiative.

- Executed 4 DoD installation-targeted, regional-, or national-level projects and partnerships, totaling $2.4M under the DoD and USFS-International Programs Cooperation on Monarch Butterfly Conservation Interagency Agreement.

IV. ENVIRONMENTAL COMPLIANCE

The Department provides resources through its Compliance Program to comply with applicable requirements, such as Federal, State, and local environmental laws, regulations, and ordinances, for installations located in the United States. In addition, the Compliance Program includes applicable environmental compliance, remediation, and planning requirements for installations located outside of the United States.

Under the Compliance Program, DoD samples and analyzes pollutant discharges to air and water, maintains environmental permits for regulated activities, provides safe drinking water, and disposes of regulated waste. The program also includes projects to upgrade drinking water systems and wastewater treatment facilities and install air pollution controls to meet new regulatory standards. In addition, the Compliance-related Cleanup Program includes the remediation of contaminated DoD lands that are not eligible for DERP funding.

DoD is committed to maintaining compliance with all applicable environmental laws and regulations. In FY 2024, the total value of fines and penalties assessed decreased by 33-percent year-over-year and has decreased by more than 90-percent since FY 2020. The Department continues to provide quality drinking water to over 2M customers worldwide. In FY 2024, the Department reached a 3-year high with over 96-percent of customers serviced by regulated public drinking water systems meeting all applicable health-based drinking water standards. In addition, DoD installations saw an over 10-percent decrease in the generation of hazardous waste for the reporting year, bringing total generation to a 3-year low.

V. INSTALLATION RESILIENCE

The Office of the Under Secretary of Defense for Acquisition and Sustainment has the primary responsibility for sustaining DoD's installation resilience. The Office of the Assistant Secretary of Defense for Energy, Installations, and Environment (OASD(EI&E)) is responsible for providing robust tools that ensure safe and resilient installations; enable the warfighter to execute missions, train, maintain installations resources; and support service member families. The Office the Deputy Assistant Secretary of Defense for Energy Resilience and Optimization (ODASD(ER&O)) ensures installation resilience through enhancing installations' ability to quickly recover from disruptions, through data-driven and scalable tools, policies, and programs. In FY 2024, ODASD(ER&O):

- Published the DoD Heat Resilience Plan, which identifies current impacts to the warfighter, infrastructure, and operations as a result of extreme heat and provides a framework to reduce these impacts.[3]
- Expanded installation resilience analytics to 58 additional sites in the DoD Extreme Conditions Assessment Tool (DECAT), bringing the total to 2,443 sites globally.[4]
- Refined DECAT's coastal and riverine flood maps, creating a more accurate and efficient capability to evaluate resilience across installations.
- Developed and deployed the water resilience tool within DECAT, centralizing DoD water resilience data to facilitate easy access, highlight trends, and address water resilience risks to mission and warfighter capabilities.
- Expanded the DoD Resilience Portal, in collaboration with the Office of the Under Secretary of Defense for Personnel and Readiness. The Portal supports installation resilience and warfighters by providing credible, authoritative, and actionable resources and information.
- Developed and published DoDI 4715.28, "Military Installation Resilience," which provides guidance on creating and maintaining installation resilience in support of title 10 U.S.C. Section 2864.
- Completed Water Management and Security Assessments, per the FY 2021 National Defense Authorization Act (NDAA) Section 2827, at 105 installations. Began assessments at 88 additional installations.
- Developed and implemented guidance, defining water resilience, formally establishing the Water Resilience Working Group, and centralizing and standardizing water rights information to ensure DoD has consistent access to water for mission assurance.

VI. INSTALLATION TECHNOLOGY PROGRAM

The Office of the Secretary of Defense oversees the MILDEPs' and Defense-wide installation technology programs. Each DoD Component invests in technologies that support their unique Military Service requirements, while complementing other Defense-wide initiatives. OASD(EI&E) manages the Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP). SERDP, ESTCP, and the DoD Components coordinate and leverage their investments to develop and demonstrate innovative, scalable technologies that enhance military readiness, improve warfighter capabilities, and strengthen defense infrastructure. SERDP invests in basic and applied research to secure and support military installations. ESTCP demonstrates and validates novel technologies at military installations, supplying Military Services with cost and performance data needed to implement new technologies. In FY 2024, SERDP and ESTCP:

- Demonstrated cleanup capabilities of over 20 PFAS treatment and destruction technologies at military installations or at off-site locations, creating a viable path to PFAS remediation at over 500 installations impacted by PFAS. Use of the successfully demonstrated technologies is expected to result in significant remediation cost savings.

[3] ODASD(ER&O), in coordination with the MILDEPs and Defense Agencies, developed the Plan in response to the FY 2023 NDAA, Section 324, Analysis and Plan for Addressing Heat Island Effect on Military Installation.
[4] DECAT is an internal tool for DoD-use only that provides hazards data and information, allowing installations to prepare for changing environmental conditions.

- Demonstrated efficient and cost-reducing UXO detection and classification technologies at over 10 underwater sites, with a focus on 4 MRSs. These efforts have the ultimate goal of providing improved access to approximately 10M acres of DoD waterways impacted by underwater UXO.
- Coordinated innovative efforts with the U.S. Geological Survey, U.S. Army Corps of Engineers, and Fort Wainwright to address security concerns regarding permafrost thaw, wildfire, and other natural hazards on military installations.
- Launched a DoD-wide database specific to surface engineering applications, facilitating the transition from using chemicals with supply chain issues to alternatives with more stable sourcing. These efforts improved DoD's ability to support warfighter health and maintain chemical resilience amid regulatory changes.
- Developed and demonstrated improved coatings for DoD assets as part of an accelerated effort to reduce hexavalent chromium use by 90-pecent across the Department. This effort ensures continued access to innovative coatings that protect assets from corrosion, supports mission requirements, and protects military personnel.
- Advanced wildland fire modeling tools focused on fuel dynamics, fire behavior analysis, and smoke forecasting. These efforts reduce the time and resources spent on firefighting and fortify the Department's training and operations.
- Developed an autonomous acoustic monitoring system that uses artificial intelligence to monitor mission-impacting wildlife on training lands. Reporting species detections in real time allows DoD's land managers to efficiently implement remediation and alternative planning efforts.
- Developed a new biochip, enabling labs to conduct polymerase chain reaction tests and screen for over 60 rare and invasive species simultaneously. This technology accelerates the Department's ability to identify species on DoD lands.
- Enhanced and implemented microgrid operations across DoD installations, resulting in a 15 to 20-percent reduction in energy coverage failures.