

As DoD's Executive Agent for the FUDS Program, the Army is faced with unique challenges in cleaning up properties no longer owned by DoD. Protecting human health and safety will always be our primary goal. Our strategy is to work with regulatory agencies toward common objectives, foster cooperative relationships with stakeholders, and close out sites.



Raymond J. Fatz
Deputy Assistant Secretary of the Army

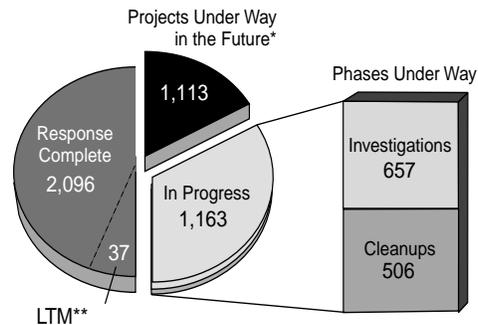
Restoration Status and Progress

FUDS project categories include —

- Hazardous, toxic, and radioactive wastes (HTRW)
- Ordnance and explosives waste (OEW)
- Containerized HTRW (CON/HTRW), such as underground storage tanks (USTs)
- Building demolition and debris (BD/DR) removal
- Potentially responsible party (PRP) actions.

DoD is responsible for cleaning up properties that it formerly owned, leased, possessed, or operated. Such properties are known as Formerly Used Defense Sites (FUDS). The Army is the executive agent for the FUDS program, and the U.S. Army Corps of Engineers (USACE) is the program's executing agent and manager. Because DoD no longer owns or uses the FUDS properties, a USACE district commander serves as each property's installation commander, executing environmental restoration projects and fulfilling associated responsibilities.

FUDS Status as of September 30, 1999



*Includes projects with future Preliminary Assessment starts planned and cleanup projects that are between phases.
**LTM is a subset of Response Complete.

The scope and magnitude of the FUDS program are significant, with 9,302 properties identified for potential inclusion in the program. Environmental restoration procedures at FUDS are similar to those at active DoD installations. Information about the origin and extent of contamination, land transfer issues, past and present property ownership, and program policies, however, must be evaluated before DoD considers a property eligible for the FUDS program.

In FY99...

- The FUDS program added 144 properties to the FUDS inventory.
- Preliminary Assessments (PAs) were completed at 660 properties.
- 2,657 properties were identified as requiring environmental response actions.
- 251 projects achieved Remedy in Place (RIP) or Response Complete (RC).



Through FY99...

- 99.1 percent, or 9,225, of the 9,302 properties had been evaluated through the PA process.
- 4,372 potential cleanup projects had been identified on the 2,657 eligible properties, and 2,096 of these projects had been completed.
- The total cost for completing the remaining 2,528 projects is estimated at \$7.34 billion (includes inflation from FY00 to FY05 only).



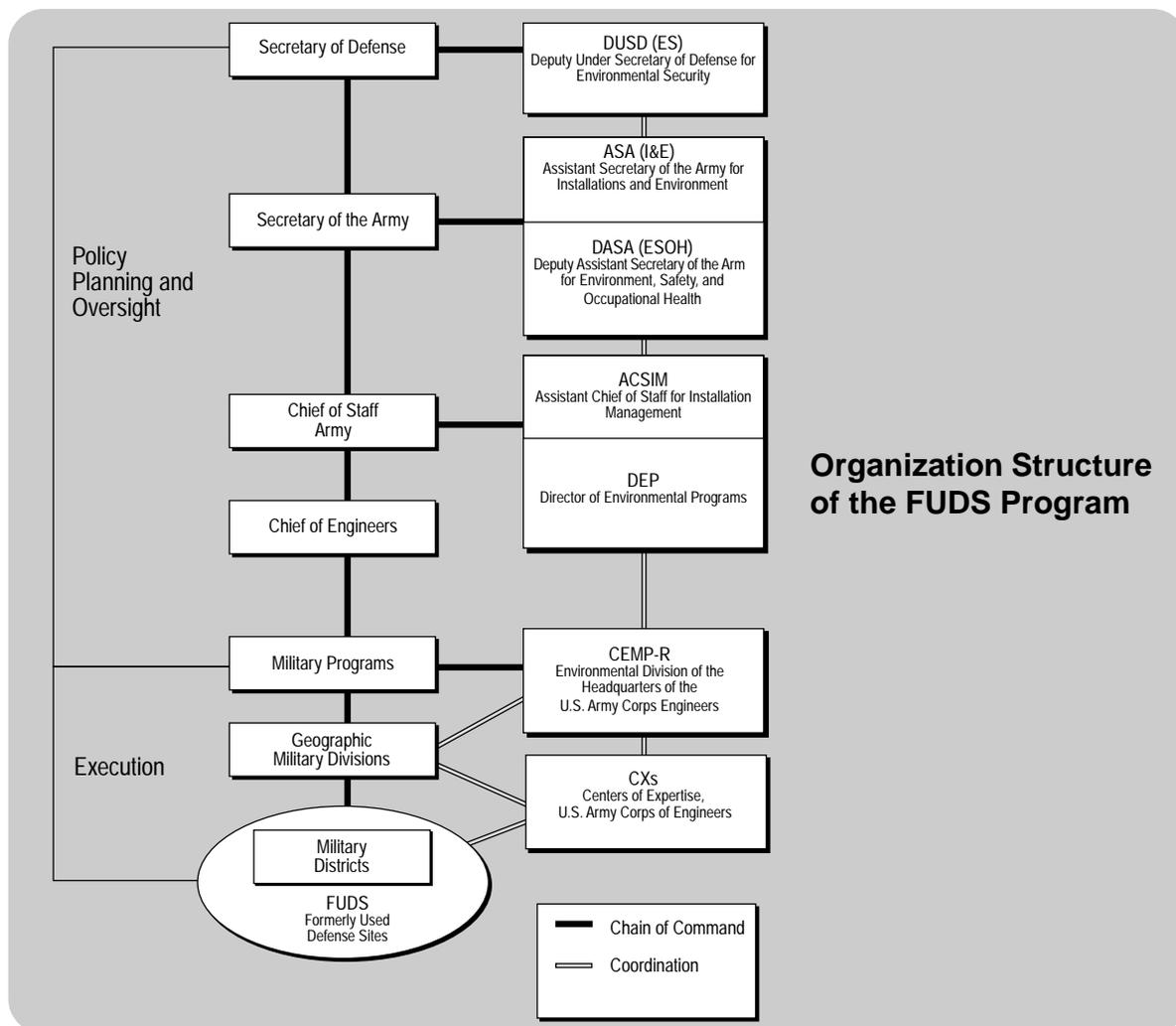
USACE conducted restoration activities at Jefferson Barracks on the bank of the Mississippi River.

Structure of Service

DoD is responsible for overall FUDS program policy and budget guidance, developing and defending the budget, and reviewing program performance. The Secretary of the Department of the Army is the FUDS program's executive agent and, through the Assistant Secretary of the Army (Installations, Logistics, and Environment) (ASA(IL&E)), supplements DoD policies and oversees the program. The Director of Environmental Programs within the Office of the Assistant Chief of Staff for Installation Management establishes general program goals and, in concert with ASA(IL&E), approves the annual work plan and program priorities. USACE headquarters is responsible for FUDS program management and execution. The FUDS mission within USACE is executed by the field organization, which consists of 7 geographic military divisions; 18 military districts, with necessary support from civil works districts; 1 HTRW center of expertise; and 1 Ordnance and Explosives (OE) center of expertise.

USACE's goals are —

- Prudent stewardship of taxpayer funds
- Responsible protection of human health and the environment.

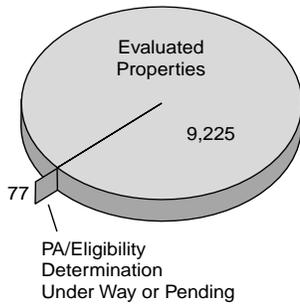


Organization Structure of the FUDS Program

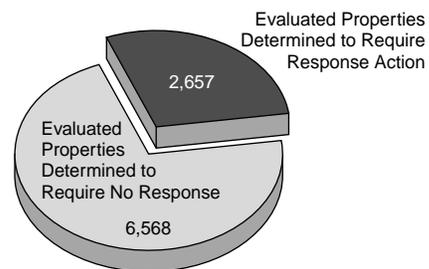
Program Execution

USACE helps the Army and DoD meet the challenge of protecting and cleaning up the environment through an organization that includes a headquarters, divisions, districts, laboratories, and centers of expertise. The divisions supervise design districts that perform studies and create designs and geographic military districts that manage projects and supervise construction. Environmental restoration activities at FUDS properties are supported by a HTRW center of expertise and an OE center of expertise (both of which are responsible for technical oversight) and by research and development laboratories.

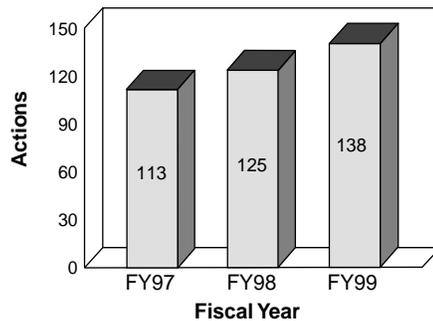
FUDS Program Eligibility Status of Potential FUDS Properties (as of September 30, 1999)



Response Action Status at Evaluated Properties (as of September 30, 1999)



Cumulative Interim Actions Completed at FUDS



Goals and Priorities

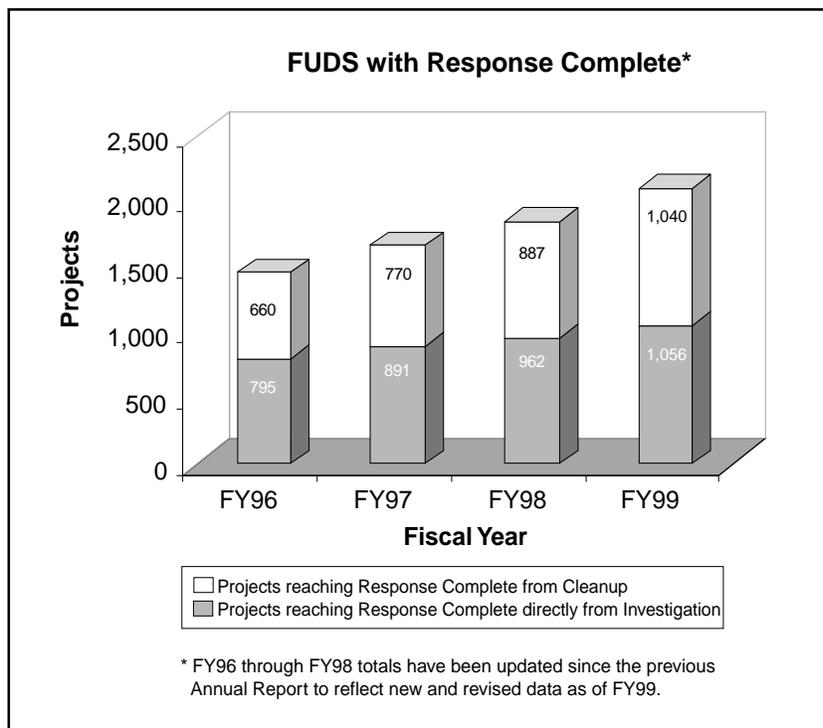
The goal of the FUDS program is to reduce, in a timely and cost-effective manner, risk to human health, human safety, and the environment resulting from past DoD activities at FUDS properties. Meeting environmental restoration goals for FUDS properties depends on —

- Strong communication
- Partnerships
- Community involvement by DoD and project stakeholders.

USACE sets priorities for the FUDS program on the basis of an evaluation of relative risk and such other factors as legal agreements, stakeholder concerns, and economic considerations.

Program Accomplishments

USACE continues to emphasize executing projects, cleaning up FUDS properties, and ensuring that the public is an active participant in the environmental restoration process. Project execution figures for FY99 demonstrate that the FUDS program is making significant progress. As of September 30, 1999, 2,096 FUDS projects had reached the Response Complete milestone.



Management Initiatives and Improvements

USACE continues to conduct initiatives to improve its efficiency and effectiveness in the use of its personnel and financial resources, administrative processing of resource documents, functional consolidation of resource responsibilities, and contracting. USACE continually searches for opportunities to enhance management and execution, using the best management practices, innovative contracting methods, and technologies.

In FY99, USACE management and support costs for the FUDS program were approximately 8.8 percent of total program costs, meaning that 91.2 percent of the environmental program's dollars went directly toward project execution at USACE districts.

Propelling FUDS to Higher Levels — New Initiatives

The *FUDS Program Manual* has recently been revised, after coordination within USACE and between USACE, U.S. EPA, and state regulators, to provide updated policy guidance in accordance with regulatory and program requirements.

USACE also further enhanced the FUDS Management Information System (FU DSMIS) to make it a more user-friendly, Web-based system. Appropriate procedures are in place that require USACE divisions and districts to maintain accurate information in FU DSMIS to support FUDS program planning, programming, budgeting, execution, and reporting.

In FY99, USACE modified the Remedial Action Cost Engineering and Requirements (RACER) system for the FUDS program. This system estimates the cost of HTRW, CON/HTRW, and BD/DR projects. The RACER system will be further modified for FUDS in FY00 to include OE W modules. The program continually monitors and evaluates all significant changes between projected and actual contract dollars, on a project-by-project basis.

USACE completed development of a FUDS business plan, an effective planning tool that focuses on funding investment strategies for cleanup and closeout of contaminated FUDS properties. The primary purpose of the FUDS business plan is to assist the leadership of the Army and the Office of the Secretary of Defense in developing FUDS-specific Defense Planning Guidance goals and fiscal guidance. The plan portrays a clear picture of future cost savings when additional annual funding investments are applied.

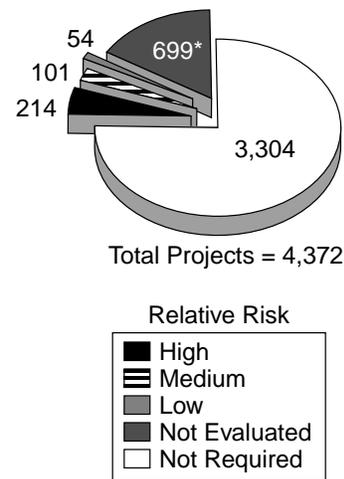
Relative-Risk Implementation

New projects are continually being added to the FUDS program. USACE strives to evaluate as many projects as possible for relative risk to human health and the environment. At the end of FY99, 39 percent of the 961 eligible HTRW projects no longer required relative-risk evaluation because they had achieved either RC or RIP status. Another 37 percent of the eligible HTRW projects had relative-risk ratings. The remaining 24 percent of these projects, which are ready for site inspection, require future funding for data collection and relative-risk evaluation. For CON/HTRW projects, removal of abandoned USTs, transformers, and 55-gallon drums has proved to be the most appropriate and cost-effective response. Thus, when funding becomes available, USACE will pursue removal responses at these FUDS properties instead of conducting expensive field sampling for relative-risk evaluation. USACE has completed response actions for 62 percent of the 1,249 eligible CON/HTRW projects. The remaining 38 percent of CON/HTRW projects have removal responses under way or require future funding for necessary removal responses.

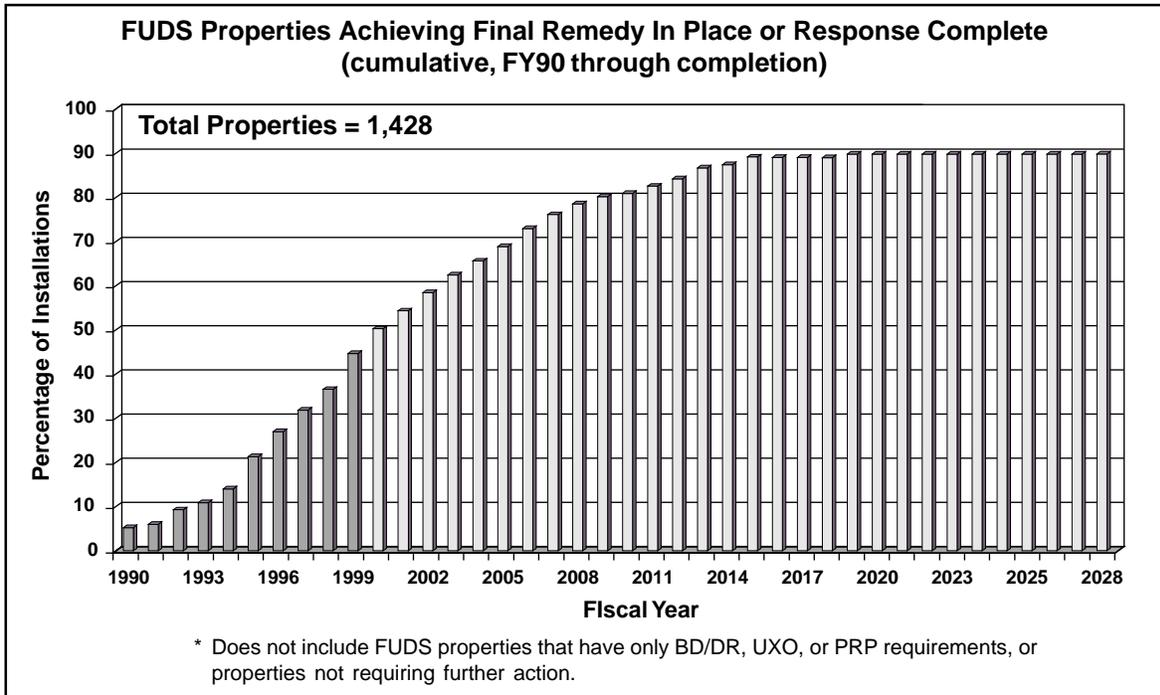
USACE also must evaluate OEW projects for relative risk to human safety. OEW risk assessment consists of hazard severity assessment and hazard probability assessment. Both are based on the best available information from record searches, reports of explosive ordnance disposal teams, field observations, interviews, and actual measurements. Of the 1,473 eligible OEW projects in the FUDS program, 593 have reached RC status and therefore no longer require relative-risk assessment. Relative-risk assessment codes have been assigned for the remaining 880 OEW projects to indicate their potential impact on human safety.

USACE uses ratings of relative risk to human health, human safety, and the environment for HTRW and OEW projects, along with other management factors, such as stakeholder concerns, to aid in sequencing work during FUDS planning, programming, budgeting, and project execution.

Relative-Risk Ranking for FUDS in Progress



*Of 699 Not Evaluated projects, 466 are CON/HTRW projects and their needs for relative risk evaluation will be determined after tank removal, as required.



Information and Technology Transfer

USACE works closely with the Army and other federal agencies to transfer information on, and extend use of, innovative technologies within the environmental community. Innovative technology advocates (ITAs) have been established across the nation to promote such innovative technology transfer and use. The USACE ITAs participate actively in the Interstate Technology and Regulatory Cooperation (ITRC) Work Group, which assists state regulators and federal agencies in use of innovative technologies, technical protocols, and regulatory information. USACE also is a primary member of the Web site development subgroup of the Federal Remediation Technologies Roundtable. The Roundtable's Web site has more than 140 completed case studies, including information on media and contaminant types and technologies used. It also provides links to other federal Web sites for environmental guidance and policy and provides a matrix of field sampling and analysis technologies. USACE has completed 20 cost and performance studies of technologies for site investigation and remediation. It is now developing an engineering regulation to support the successful USACE program using innovative technologies and remediation activities. To reduce the cost of environmental restoration on more than 300 projects, including those at FUDS, USACE also uses innovative technologies in the field. One noteworthy innovative technology used is Meandering Path Geophysical Investigation, a 1999 Government Technology Leadership Award Winner!

Locating and Evaluating UXO-Contaminated Areas

A major question for FUDS program managers is, “How can we efficiently locate and evaluate UXO-contaminated areas?”

Traditional sampling methods for UXO rely on geometric grids that must be cleared of vegetation before investigation can begin. This clearing absorbs up to one-third of total investigation dollars. After clearing vegetation, site investigators have had to scan the cleared grids with detection instruments, marking anomalies by hand with flags.

USACE, Huntsville Center, has improved on this costly, labor-intensive method by combining Global Positioning System (GPS) technology and statistical sampling procedures. Huntsville calls its new technique Meandering Path Geophysical Investigation. Meandering Path does not depend on the geometric grid, and therefore does not require the cutting of vegetation before sampling data are collected. It therefore both preserves the natural environment, leaving trees and shrubs uncut and wildlife undisturbed, and saves significant amounts of money.

Huntsville’s development of this new method was predicated on advances in GPS software, which enabled satellite locks to be maintained to centimeter accuracy through heavier foliage. These advances allowed recording of anomaly locations under tree cover, eliminating the need to remove vegetation before collection of sampling data. Use of GPS also eliminated the need for flags, since GPS data generate maps that pinpoint the location of each anomaly and become a permanent record.

Instead of the rigid 100-foot-by-100-foot geometric grids used in traditional UXO sampling, Meandering Path uses a fluid, serpentine grid. To gather data, a two-person team, consisting of a safety escort and a geophysicist, follows a loosely planned path designed to reduce distances between sample areas and to cover areas suspected of containing UXO. The two-person team surveys for anomalies by walking a sensor over an area equivalent to a geometric grid. If the investigators come upon a tree or a briar patch, they simply go around it, detecting as they go. The change in direction does not affect the randomness of the sampling, since an ordnance item is as likely to be on one side of a briar patch as on another.

The technical advantages of Meandering Path include more efficient sector analysis and better visual representation. Program advantages include minimization of ecological damage and improved cost-effectiveness. Saving funds also allows the FUDS program to extend its available UXO cleanup dollars to other projects.

Outreach

Public involvement is vital to the FUDS program's success. In FY99, USACE continued to expand its community relations efforts, ensuring that the public was made aware of the FUDS program and of opportunities to participate in the environmental restoration process.

USACE also is making every effort to establish restoration advisory boards (RABs) at FUDS properties where there is sustained community interest (although the Corps recognizes that not all properties or projects lend themselves to RAB establishment).

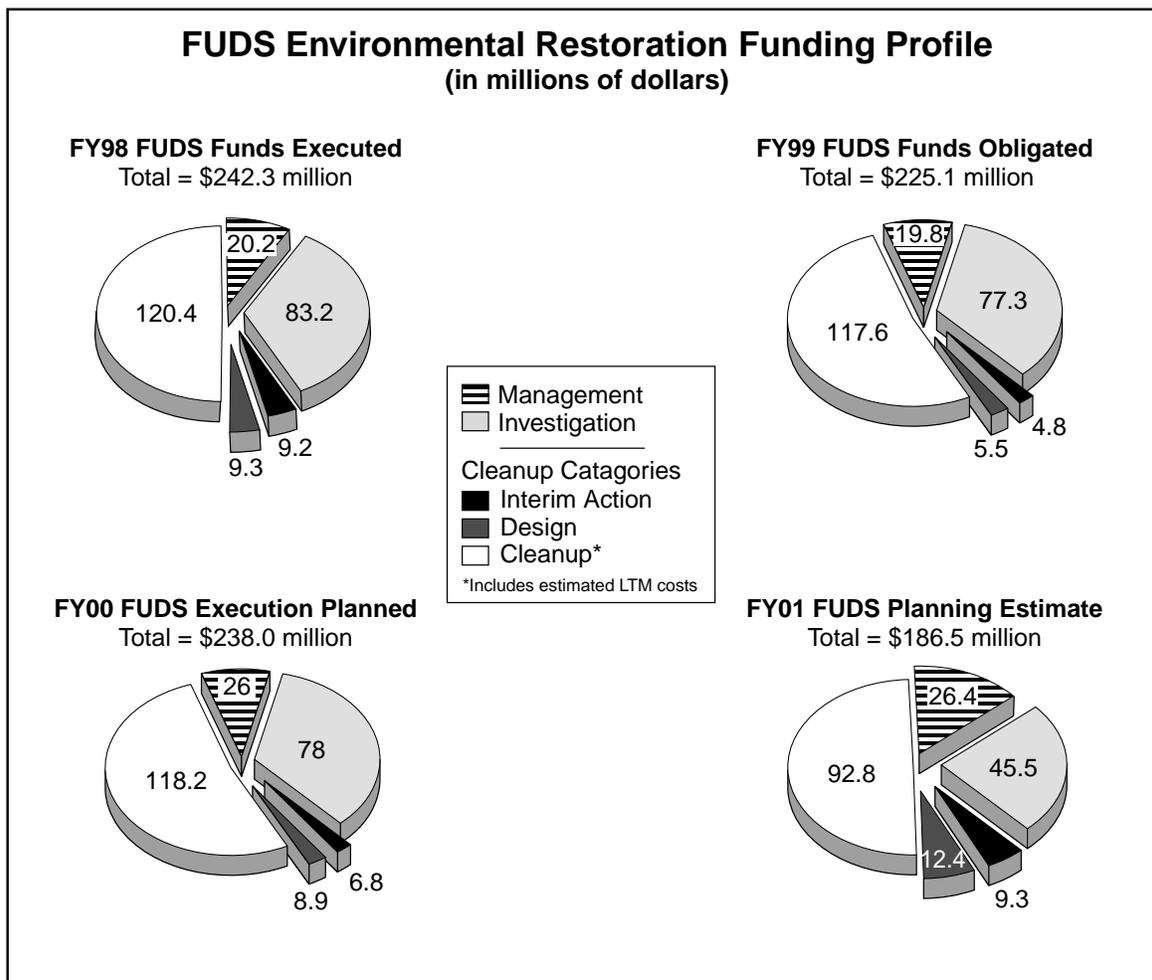
The FUDS program now has 33 active RABs. No RABs were disbanded in FY99. Five RABs were established, although a few of these had existed as technical review committees before their conversion to RABs. A Technical Assistance for Public Participation grant was awarded to the Buckley Field RAB for nearly \$25,000.

Former Kincheloe Air Force Base – A RAB Success Story

During FY99, the RAB for the former Kincheloe Air Force Base near Sault St. Marie, Michigan, formed and began meeting. This base's project team followed guidance and lessons learned from other RABs, such as the importance of extensive advertisement, involvement of the local government, and the hiring of a professional facilitator. As a result, the RAB has been extremely successful. Nearly a dozen RAB members attend meetings regularly and actively support the Army's activities at the site. The RAB has been an outstanding conduit for transmitting information to the community. The RAB is so successful now that participants have agreed there is no longer a need for the professional facilitator.

Funding

Since the devolvement of the Defense Environmental Restoration Account, funds for DoD's environmental restoration program have been distributed into five separate accounts, including one for FUDS. In FY99, USACE obligated \$225.1 million for environmental restoration activities at FUDS properties. FUDS environmental restoration funding increased to \$238.0 million in FY00 and is expected to decrease to \$186.5 million in FY01.



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