

Fiscal Year 2004 Secretary of Defense Environmental Awards Nomination

**NATURAL RESOURCES CONSERVATION**

**FORT DRUM, NY**



Sustain the Mission. Secure the Future.



## INTRODUCTION

Fort Drum is home to the 10th Mountain Division (Light Infantry) – the most deployed unit in the Army and a key participant in Operations Enduring Freedom and Iraqi Freedom. At Fort Drum, environmental sustainment of training ranges is integral to the success of its mission: To provide facilities and services to US Armed Forces requiring land and airspace to practice combat skills and operations on a year-round basis. This training and mobilization mission supports nearly 80,000 troops each year.

Nearly 15,000 military and 2,500 civilian personnel work at Fort Drum and up to 270 Reserve Component units train at Fort Drum annually, with peak training occurring during summer. Fort Drum also supports about 20,000 reservists from all services for weekend training and about 9,000 active Army, Marine and Canadian troops for winter training. The post is also home to 28 tenant organizations.

The installation’s 107,265 acres managed under the Installation Natural Resources Management Plan (INRMP) are divided into a 11,650-acre cantonment area (including Wheeler-Sack Army Airfield), a 20,030-acre impact area and 75,585 acres of 18 training areas and 28 ranges which accommodate weapon systems from small arms to artillery, from tanks to aircraft. Many of Fort Drum’s lands, nearly 75,000 acres, are open to the public by permit for hunting, fishing and trapping. Fort Drum’s 130 miles of streams and 11 lakes and ponds provide excellent opportunities for anglers. Figure 1 details the various types of acreage that make up Fort Drum.

Figure 1. Component Acreage	
Land use	Acres
Urban / disturbed	5,270
Upland rangeland	16,072
Upland forest	65,976
Wetland	16,500
Open water	3,447
Total	107,265

The mosaic of natural communities found on Fort Drum provides the US Armed Forces with a variety of realistic training scenarios. For example, forested areas are used for infantry training and as bivouac sites; and forest clearings serve as artillery firing



▲ Training and recreation benefit from Fort Drum’s rich natural resources.

points and helicopter landing zones. Open grass and shrub lands provide space necessary for tracked and wheeled vehicle maneuvers.

**Natural Features:** Located about 10 miles northeast of Watertown, N.Y., and 30 miles from Canada, this premier Power Projection Platform has the St. Lawrence River and Thousand Islands to the north; Lake Ontario to the west and Adirondack Mountains to the east. Most of Fort Drum is located in the St. Lawrence River Basin. Major glaciations carved out the lakes and Adirondack foothills that form the topography of Fort Drum. The installation’s landscape is a mix of northern hardwood and coniferous forests interspersed with rangelands and wetland areas. Wetlands and open water occupy a relatively large amount of acreage on Fort Drum (about 20 percent), and types found throughout the installation include forested wetlands, freshwater marshes, riparian areas, scrub-shrub wetlands and wet meadows.

These diverse lands provide varied habitats that support a rich array of faunal and floral populations. Inventories have confirmed the occurrence of 44 mammal, 216 bird, 46 fish, 11 reptile and 19 amphibian species and 993 plant species on the installation. No known federally listed threatened or endangered species (fauna or flora) reside on Fort Drum at the present time.

## BACKGROUND

Fort Drum’s Natural Resources Management Program works in close coordination with numerous federal and state agencies. The US Fish and Wildlife Service (USFWS) and New York State Department of



Environmental Conservation (NYSDEC) are signatory cooperators in implementation of Fort Drum’s 2001-2005 INRMP, which is currently being revised. As part of this revision, the installation’s Natural Resources Management Program is incorporating plans to accommodate an anticipated 50 percent increase in active duty Soldiers and heightened demands on training lands.

**Cooperative Agreements:** Fort Drum utilizes formal partnership agreements with the US Natural Resources Conservation Service for technical support in land rehabilitation activities, Colorado State University, Cornell University, Jefferson Community College, State University of New York College at Brockport and the USFWS for inventory and monitoring of natural resources.

**Organization and Staffing:** The Natural Resources Branch, Environmental Division, Directorate of Public Works is comprised of four programs: Fish & Wildlife Management, Forest Management, Wetlands Management and National Environmental Policy Act (NEPA). A staff of 14 (10 federal and four contract support personnel) provides expertise within each program area. Figure 2 provides an overview of staff titles and management organization.

**Committee Involvement:** To help ensure successful implementation, all three INRMP signatories attend a semi-annual Natural Resources Conservation Meeting chaired by the Garrison Commander; and the installation’s Environmental Quality Control Committee provides program oversight. Coordination efforts with the USFWS typically involve wetland permitting and aquatic resource sampling.

Efforts with NYSDEC typically address hunting, fishing and trapping; law enforcement, nuisance wildlife issues and permits and other fish and wildlife management issues including state-listed species (through the Natural Heritage Program). Additionally, Fort Drum coordinates with the US Forest Service in programs such as prescribed burning and forest tent caterpillar monitoring; and the US Army Corps of Engineers (USACE) and US Environmental Protection Agency (USEPA) for wetland permitting needs.

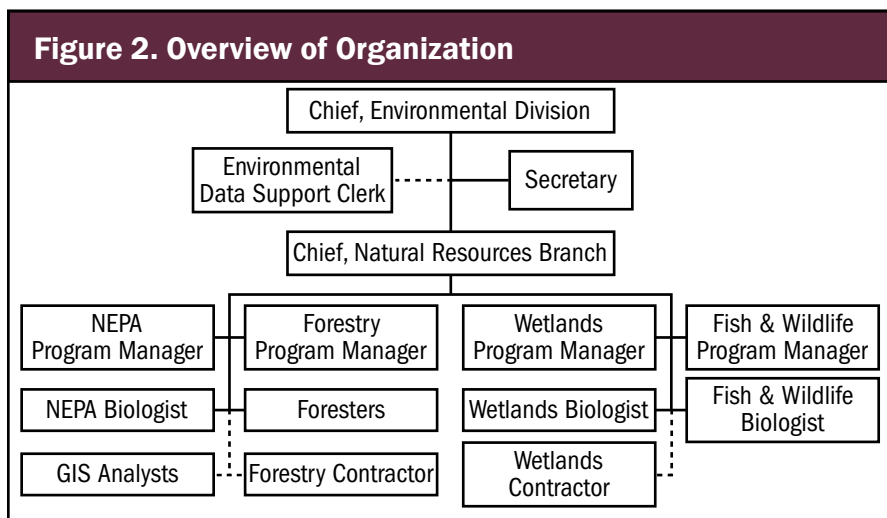
**PROGRAM SUMMARY**

During the award period, Fort Drum has advanced its Natural Resources Management Program to ensure range sustainability, mission success and sound professional stewardship. By employing pioneering technology such as the Natural Resources Management Unit (NRMU) framework and Automated Environmental Review, and streamlined management approaches such as the Wetland Mitigation Bank and Local Commercial Forestry Initiatives, the installation continues to make progress against the major goals/objectives of its INRMP, as outlined in the table on the following page.

**ACCOMPLISHMENTS**

**Overall Conservation Management: Natural Resources Management Unit Framework**

In an unprecedented effort spearheaded by the Forest Management Program, along with Fort Drum’s Geographical Information System (GIS) personnel, the installation established a unique spatial data framework called Natural Resources



“The natural resources management team at Fort Drum has been visionary in their development of a natural resource classification standard. I am especially impressed that a relatively small installation staff have single handedly developed and implemented this classification system.”

- Laura Henze, National Sikes Act coordinator, USFWS

Management Units (NRMUs) for all of its land. In terms of scale, this framework is the largest effort accomplished in the Army. In doing so, the Natural Resources Management Program created the first large-scale, land cover map of the entire installation,

and developed a means to integrate program-specific data to manage Fort Drum lands with an ecosystem approach, rather than with a micro-scale approach.

Using aerial photos, Fort Drum’s entire acreage was delineated into a land cover classification (based on the Federal Geographic Data Committee’s National Vegetation Classification Standard) and assigned an NRMU number. From 2003-2004, each accessible NRMU was field-checked and dominant vegetation data collected. Natural resources programs collected a variety of floral, faunal and management-related information for each NRMU; program-specific data for individual NRMUs is linked together in a Microsoft Access database.

Fort Drum now has access to a landscape-level snapshot of 15,000 individual NRMUs, each of which encompasses forest, fish/wildlife and wetlands management data and goes one step further by integrating this data with training activities. The NRMU database will act as a driving force in determining initial management actions; a means to continually monitor the quantity and quality of the various land cover types that exist on post; and a feedback tool to evaluate the effect of recently implemented actions and to determine future management actions. For example, the Forest Management Program can determine which areas should be salvaged first to support training actions by linking areas in need of salvage with training frequency data. Planners and trainers can enhance Cross-Country Maneuver Modeling (shows how variables – vegetation, soils, topography, etc. – affect speed and mobility of HMMWVs) to determine which areas would benefit the most from vegetation management options used to create maneuver lanes, firing points and landing zones. The Natural Resources Management Program is using the NRMU database to expand its coordination with programs across the installation to further mission sustainability.

NRMU implementation would be beneficial to any large landholder (30,000+ acres) with the desire to proactively conserve and/or enhance the environment and increase sustainability.

<i>Major INRMP Goals/Objectives</i>	<i>Degree of Attainment</i>
Provide quality natural resources as a critical training asset upon which to accomplish the military mission of Fort Drum.	Fort Drum continues to work closely with the training community to provide realistic and sustainable training landscapes, who have started to embrace the NRMU framework as another critical tool to facilitate sustainable management of Fort Drum’s natural resources.
Comply with laws and regulations that pertain to management of Fort Drum natural resources.	Fort Drum is compliant with all 27 laws, regulations and Executive Orders governing natural resources. The installation is proud of its longstanding and exceptional relationship with all affected regulatory agencies and personnel. Fort Drum has never received a Notice of Violation regarding natural resources management activities.
Manage natural resources on Fort Drum to ensure good stewardship of public lands entrusted to the care of the Army.	Fort Drum maintains active relationships with NYSDEC and USFWS. NYSDEC has mentioned Fort Drum’s outstanding stewardship role in press releases and presentations at professional conferences. Fort Drum is routinely invited to make formal presentations to various conservation groups regarding their proactive stewardship programs.
Improve the quality of life of the Fort Drum and surrounding communities through quality natural resources-based recreation opportunities.	Fort Drum annually issues approximately 2,800 recreational use permits. The installation regularly receives positive feedback regarding outdoor recreation opportunities and the overall quality of life at Fort Drum.

Fort Drum has responded to many inquiries from other military installations about NRMU database development and in August 2004, briefed the NRMU Framework project at the Department of Defense (DoD) Conservation Conference, where it was extremely well received.

**Ecosystem Management: Wetlands**

Fort Drum established a Wetland Mitigation Bank by constructing, enhancing and preserving wetlands and associated uplands to provide wetland “credits” for non-Military Construction Army (MCA) projects that require wetland mitigation. This is a significant benefit to the mission of Fort Drum, as many of these smaller projects would otherwise be cancelled or delayed due to legal requirements to replace impacted wetlands with compensatory wetlands elsewhere on the installation. The Mitigation Bank is currently built to provide a maximum of 24 credits upon achievement of all wetland success criteria, and includes 14.96 acres of newly established wetland, 12.47 acres of enhanced wetland, and 17.3 acres of protected wetland. Overall, the Mitigation Bank contains more than 130 acres of preserved lands providing many benefits, including wildlife habitat. It is only the second of its kind within the Army and several Army installations have requested documentation to use the bank as a model. As part of the development process, a Mitigation Bank Review Team was formed with Fort Drum’s Directorate of Public Works, the USACE, USEPA, USFWS and NYSDEC. Each agency acted as a signatory to the official guidance document for the bank. The total cost is favorable when compared to the typical per acre cost for compensatory mitigation on a project-by-project basis.

**Forest Management: Commercial Forestry Benefits Training Areas**

From FY 2003 to FY 2004, Fort Drum raised \$425,000 in timber sales, approximately \$99,000 of which was derived from local sales, representing the largest amount of local sales in the DoD. A successful firewood program is the largest of its kind and provides low-cost wood to community members and assists the Forest Management Program by removing dead and downed trees. The Forest Management Program uses the NRMU system to coordinate timber sales to maximize benefits to the training community by targeting



▲ A man-made, compensatory wetland at Fort Drum.

harvests in areas most frequently utilized for training, which enhances maneuverability and provides overhead cover for concealment. Prescribed burning is utilized to remove competing vegetation and to aid in the regeneration of certain desirable tree species.

**Fish and Wildlife Enhancement: Lake Liming and Brook Trout Restoration**

In response to NYSDEC requests for assistance, the Fish & Wildlife Management Program coordinated efforts with the state and four military units to restore two lakes in a designated wilderness area located in the nearby Adirondack Park that were long ago devastated by acid rain. Forty-five tons of agricultural lime were added to the lakes to raise pH levels and create healthier aquatic habitats. The process of air lifting the lime over the surface of the frozen lakes served as a slingload training exercise in extreme cold weather for the military units involved. The environmental result: two lakes considered “dead” for more than 50 years are returned to life; fish populations including one state listed endangered species are thriving; recreational opportunities for the community are improved; and loons are now successfully reproducing on one lake.

**Other Natural Resources: Outdoor Recreation**

For years, the general public has considered Fort Drum a prime area for hunting, trapping and fishing; the general public comprises 50 percent of recreation permit holders on Fort Drum. In the aftermath of Sept. 11, 2001, Fort Drum was closed to the public prompting concern from the community. In response, the Fish & Wildlife Management Program spearheaded a successful effort to re-open Fort Drum training areas for recreational use by the general public in





▲ A fisheries expert with USFWS, Kofi Fynn-Aikins, said of the Lake Liming project shown above, "Our relationship with them has been really good and they really care about the environment. The natural resources staff have been really good partners."

FY 2003. A new permit office was established, a computerized photo identification permit card system helped address security concerns, and new regulations were implemented. On average, 2,800 recreationists utilize Fort Drum lands annually with revenues from permit sales averaging \$26,000. The outdoor recreation program further bolsters the positive relationship between Fort Drum and local communities, and provides additional quality of life opportunities to Soldiers and their families.

### **Conservation Education and Community Relations**

Fort Drum's excellent environmental record and outreach program have solidified a positive community relationship. As a result, no major conflicts have arisen regarding natural resources management on the installation. The program educates military personnel, their families and local community members about Fort Drum's natural resources and promotes environmentally-responsible training and recreation to minimize impacts to Fort Drum lands. As part of the program, natural resources personnel have: conducted 112 Environmental Awareness training briefings to approximately 2,240 military personnel; presented a natural resources management briefing in all on post Environmental Compliance Officer (ECO) training sessions; sponsored an annual Arbor Day tree-planting activity; co-sponsored an annual free fishing day & fishing derby; exhibited at on-post events including the annual Earth Day fair and Safety Day; presented to local K-12 schools and

scouting organizations; and supported five successful Eagle Scout projects. The Natural Resources Branch also produces two free brochures and a bi-annual newsletter designed to inform and educate recreationists about outdoor sporting opportunities on post. In FY 2003, the installation mailed the newsletter to all 4,272 Fort Drum housing residents (on/off post) and all current permit holders.

### **Automated Environmental Review**

Full National Environmental Policy Act (NEPA) compliance is essential to maintaining maximum training capacity, and the installation processes nearly 600 NEPA Records of Environmental Consideration (REC) a year in support of range activities. To streamline submittal, review and approval, Fort Drum's NEPA Program developed an electronic REC process that uses Microsoft Outlook forms capabilities in conjunction with a Microsoft Access database. This automation reduced processing time by 15 hours per week for natural resources staff, and entry and paper copies (supporting the Paper Reduction Act). It also reduced the time spent by Soldiers hand-carrying RECs for review, minimizing their time away from the mission and reducing their personal vehicle use with associated fuel costs. In addition, automation enabled NEPA information to be readily linked with the NRMU database and GIS for spatial analysis and monitoring of cumulative impacts. Fort Drum's automated REC review process is highly applicable to and could benefit any military or federal NEPA Program.

### **CONCLUSION**

At Fort Drum, excellence in natural resources stewardship is essential to sustaining full use of one of the US Military's most valuable assets. The initiative and professionalism exhibited by Fort Drum's Natural Resources Management Program have been integral to sustaining the ever-changing and expanding military mission, conserving natural resources, and maintaining positive community relations and quality of life for all. Their noteworthy success relies on employing unique management approaches, expanding the use of innovative technologies, and fostering improved communication and coordination with other installation staff to conserve natural resources, ensure sound land use management and promote the conservation ethic.