



## FY 2011 Secretary of Defense Environmental Awards Fort Drum, New York Natural Resources Conservation, Large Installation



### INTRODUCTION

Fort Drum is the premier Army power projection training installation in the Northeast responsible for supporting more than 18,000 Active Duty forces, more than 17,000 Family members, approximately 5,000 civilian employees, and thousands of Reserve forces and National Guard units from 11 states.

Fort Drum's 107,265 acres are comprised of 400 acres of lakes, ponds and other open water, 91.9 miles of rivers and streams, 15,000 acres of wetlands, 58,000 acres of forests (42,000 managed forests), 14,000 acres of shrub land, 16,000 acres of grassland and 8,000 acres of development. Fort Drum has a primarily humid, climate with relatively long, cold winters and short, warm and often humid summers.

The installation mission is to: ***Provide quality installation support to our Soldiers and their Families that is equitable to their quality of service and sacrifice to our Nation.*** It is vitally important Fort Drum sustains its current training land capacity and capability to perform its training mission and readiness functions as an Army Power Projection Platform. To meet these objectives Fort Drum follows and lives by the spirit outlined in The Army Strategy for the Environment (U.S. Army 2004) whereby it is acknowledged that simply complying with environmental regulations will not be enough to ensure mission sustainability, but instead ***"We must strive to become systems thinkers if we are to benefit from the interrelationships of the triple bottom line of sustainability: mission, environment, and community."***

### BACKGROUND

The Natural Resources Conservation Branch (NR) is made up of 18 personnel in four program areas; Fish and Wildlife Management, Forest



*Fort Drum, NY is home to the 10th Mountain Division (Light Infantry), the only division-sized element of the US Army to specialize in fighting under harsh terrain and weather conditions.*

Management, Wetlands Management and the National Environmental Policy Act program. Fort Drum's Integrated Natural Resources Management Plan (INRMP) is fully integrated into its environmental management system.

Beginning in 2007, Fort Drum began revising its INRMP using only in-house personnel as a part of a Department of Defense

(DoD)-wide cooperative Legacy project aimed at creating an INRMP based on the 2006 DoD INRMP template. In the last two years, NR staff prepared a biological assessment (BA) that identified and analyzed potential impacts to the Indiana bat from activities proposed to occur on Fort Drum from Jan. 1, 2009 – Dec. 31, 2011, and initiated formal consultation with the U.S. Fish and Wildlife Service (USFWS). The resulting biological opinion from the USFWS guided the completion of Fort Drum's Endangered Species Management Component that was incorporated into the INRMP. The Installation Pest Management Plan and Bird-Aircraft Strike Hazard Plan were also revised and integrated into the INRMP, at this time. The INRMP has now been officially reviewed by other DoD services, the Army chain-of-command, internal stakeholders of Fort Drum, and external stakeholders represented by the USFWS and New York State Department of Environmental Conservation (NYSDEC). This 350+ page document serves not only as a management plan, but also as a source document for all natural resources activities and NEPA documentation. The INRMP is expected to be officially signed Spring 2011.

### PROGRAM SUMMARY

Fort Drum's NR professionals are committed to supporting the following INRMP goals:

- ***"Provide quality sustainable natural resources as a critical training asset upon which to***

***accomplish the military mission of Fort Drum.”***

NR staff sustain training lands through management, monitoring, research, and rehabilitation, as appropriate.

- ***“Comply with laws and regulations that pertain to the sustainable management of Fort Drum’s natural resources.”*** NR personnel comply with NEPA to make informed decisions and have created a program to enhance the efficiency and effectiveness of environmental project review for all laws and regulations, such as, the Sikes Act, Endangered Species Act, Clean Water Act, and Migratory Bird Treaty Act.
- ***“Professionally manage natural resources on Fort Drum to ensure sound sustainable stewardship of public lands entrusted to the care of the Army.”*** The NR team uses adaptive ecosystem management strategies to conserve and enhance native fauna and flora, and manage or eliminate invasive species. NR also monitors and manages soils, water, vegetation, and wildlife on Fort Drum with a consideration for all biological communities and human values associated with these resources, while coordinating with interested internal and external entities.
- ***“Maintain Fort Drum as an exemplary resource in the region and continue to improve the quality of life at Fort Drum and of the surrounding communities through natural resources-based recreational opportunities.”*** The NR team provides quality outdoor recreational opportunities such as hunting, fishing, trapping, wildlife viewing, camping, etc. NR staff also conducts educational outreach activities for Soldiers, their Families, Civilians and the community.

**ACCOMPLISHMENTS****OVERALL NATURAL RESOURCES CONSERVATION MANAGEMENT**

The success of natural resources management on Fort Drum is due to an integrated team approach, cooperative working relationships with internal stakeholders and external stakeholders, and partnerships with other entities.



*Fort Drum Natural Resources staff manages areas like Bonaparte Creek, a waterway in the training lands. Places like this provide for excellent wildlife habitat and recreational opportunities unique to this area.*

With the ever-increasing demand for new facilities and housing for our Soldiers and changing training mission requirements, NR staff has creatively and effectively met the challenges of timelines, changing footprints, and federal and state legal requirements while protecting the environment and ensuring mission sustainability.

NR staff has an outstanding working relationship with our state and federal regulatory offices. Our work with endangered species is seen as a true partnership with the USFWS instead of the typical “opposite-sides-of-the-fence” regulatory relationship. Interactions with the NYSDEC for fish and wildlife management, construction permitting for stream and wetland impacts, forest management, and invasive species management are always conducted with a clear understanding and respect of each other’s organizational mission and requirements. NR staff work cooperatively with the U.S. Army Corps of Engineers (USACE) to expediently permit construction activities.

NR staff has regular formal and informal coordination meetings with the Directorate of Plans, Training, Mobilization and Security (DPTMS) - Range Division and Integrated Training Area Management (ITAM) Program to facilitate training-related projects and activities. NR staff also has regular coordination meetings with the USACE, Directorate of Public Works (DPW), and other entities to facilitate construction-related projects. All of these meetings are to effectively communicate and coordinate projects

while addressing the complex array of environmental regulations, natural resources conservation issues, construction activities and mission requirements. This team approach has also increased efficiency by sharing resources, such as equipment and data. For example, the Geographic Information System (GIS) office is run by two staff members, one funded by DPW and the other by DPTMS.

An important part of effective natural resources management at

Fort Drum is our GIS branch. The typical GIS land cover layer at most Army installations is the federally-managed National Land Cover Database 2001 (NLCD 2001). The NLCD is based on 30-meter resolution Landsat imagery with 19 land cover types derived from ancillary data using a Decision Tree algorithm. Our two-year, 107,265 acre mapping effort is based on 30 cm resolution orthoimagery (100 times better resolution compared to NLCD 2001) with 93 different land cover types derived by experienced Fort Drum NR personnel for consistency. The result is a data layer of unmatched accuracy and resolution across Army installations.



*A UH-60 Blackhawk approaches Whiteface Mountain during a training exercise to prepare pilots of 10th Combat Aviation Brigade for their future deployment to Afghanistan. Pilots will fly to Whiteface through May 15 to familiarize themselves with flying in high altitudes.  
Photo courtesy of the U.S. Army*

### **MISSION ENHANCEMENT**

NR NEPA staff coordinated the first major off-post training mission for the 10th Mountain Division. These efforts involved working with state and local government officials, private stakeholders and media to enable the 10th Combat Aviation Brigade (CAB) to conduct high-altitude helicopter flight training, critical to their Afghanistan deployment, at Whiteface Mountain, one of the highest mountains in New York State and located on public lands in the Adirondack Park. NR and NEPA coordination involved establishing training locations, dates and times to avoid a geographically unique migratory bird species, and provisions to conduct long-term monitoring of migratory birds while the CAB conducts training. This coordination involved a number of stakeholders including: NYSDEC, USACE, New York State Historic Preservation Office, Adirondack Park Agency, Atmospheric Sciences Research Center, USFWS, Adirondack Council, Wildlife Conservation Society, and the Vermont Center for Ecostudies. Tribal Government consultation and public involvement were facilitated through the NEPA process with preparation of Environmental Assessments.

In 2010, NR staff conceptualized and created in-house a new Electronic Environmental Review and

Coordination System (EERCS). This system shortens the time required for the submittal, review and approval of post projects and military training missions. EERCS allows the proponent (i.e., Soldier, project manager, and action officer) to prepare the submission at their desktop, and upload attachments needed for initial review. This system allows project information to be submitted from off-post locations through the use of the AKO portal <https://www.us.army.mil/suite/>

[page/361460](https://www.us.army.mil/suite/page/361460). This tool will be able to be exported to all installation environmental offices.

The review and approval of process ranges in time from instantaneous approval to responses requesting additional information or overall approval usually within 48 hours of submittal. EERCS is a huge time saving tool for our Soldiers and project managers reducing the previous 14 day process to 2 days for most projects.

### **LAND USE MANAGEMENT**

NR staff aided in re-vegetation efforts by compiling and selecting native seed mixes for construction projects. The NR Wetlands Management Program (WMP) planted approximately 1,400 trees in wetland mitigation bank sites in 2009 and 2010. The WMP also harvested and stored willow cuttings for future plantings using refrigerators slated for disposal. These plantings facilitate wetland mitigation bank requirements being met in order to release wetland credits for construction. The WMP manages bank sites both on and off post. Utilizing this bank for wetland mitigation saves over \$150,000 an acre in installation project construction costs.

In early 2010 WMP, working with DPTMS-Range Division, conducted an updated and improved wetland and stream planning level survey to establish a Wetlands/Range Management Plan for training needs. The new planning tool is called Assessment, Inventory, and Mapping (AIM) of

Fort Drum's streams and wetlands. The AIM project formulated a wetland and stream assessment tool, using existing and proven classification and assessment systems, and adapting them for Fort Drum.

The NR Forest Management Program's (FMP) commitment to water quality and best management practices (BMPs) led them to purchase portable steel bridges for contractors to utilize during timber harvests. Typical timber industry stream crossing techniques like log crossings, fords, and culverts are preferred by contractors because of the relatively low cost, but these methods frequently involve the use of large quantities of fill resulting in excessive erosion and stream sedimentation. Requiring contractors to use these portable bridges during timber harvesting protects water quality and preserves healthy ecosystems.

FMP created and implemented an installation-wide forest inventory program covering approximately 58,000 acres of forest. This inventory allows the NR team to react quickly to sudden issues as well as plan for construction activities, changing mission requirements, and ecosystem/habitat rehabilitation and enhancement. The inventory process was recently briefed at the 2009 DoD reimbursable program meeting. Other installations were encouraged to use this program to meet their inventory requirement efficiently and effectively utilizing only in-house resources at significant cost savings.

### **FOREST MANAGEMENT**

During 2009 and 2010, the FMP created and implemented an Urban Tree Inventory (UTI) within the cantonment area, to ensure urban forest/green space on Fort Drum is an enjoyable outdoor environment, increases energy savings and aids in force protection, by creating natural barriers inaccessible except by foot traffic. The UTI is also utilized in a joint effort between NR and DPW-Engineering to prioritize tree plantings, resulting in



*In March NR provides proof to Fort Drum's new residents that winter's blowing cold and deep snow is about to end, that spring will indeed come. In 2010, over 500 visitors attended the Maple Days event, learned how to make syrup from trees in their backyard and most of all, and enjoyed the sweet taste.*

a massive reforestation effort (over 2,200 mature trees) to provide green space for new Soldier barracks and facilities.

Fort Drum's FMP is the only established maple syrup processor within the DoD. Maple syrup processing allows for the sustainable management of an alternative forest product without tree removal, providing crucial wildlife habitat and aesthetic value, especially in the cantonment area where our Soldiers and their Families live and work. Maple syrup

processing increases revenue five times that of traditional saw log sales, projected at \$20,000-\$40,000 per year.

The FMP developed a Standard Operating Procedure (SOP) for hazard tree identification, created standards for assessing hazard potential, and established a risk rating system. Working with installation partners, NR staff developed protocols and evaluation forms for tree assessments, to ensure the safe and proper identification of hazard trees. This protocol ensures there is no unnecessary tree cutting and a safe urban forest. Currently, Picatinny Arsenal, NJ, with support from Fort Drum FMP, is adopting this SOP.

The FMP also developed a standing firewood sale program that provides no-cost timber stand improvements for mission scape and wildlife habitat while providing revenue of \$5,000-\$10,000 per year to the forestry reimbursable account. This program avoids about \$50,000 in DPTMS expenses per year for mechanical land clearing.

A similar program is the firewood salvage permit system which saves \$20,000 per year in operations and maintenance by cleaning downed woody material and providing \$3,000-\$6,000 in revenue per year. The firewood salvage permit allows for sustainability and historic land use to Fort Drum and their communities by providing inexpensive

firewood used by many in northern New York as a primary heat source.

### **FISH AND WILDLIFE**

Much of the effort of the past two years by Fort Drum's Fish and Wildlife Management Program (FWMP) has been devoted to endangered species management of the federally listed Indiana bat (*Myotis sodalis*).

A crucial component in the successful Endangered Species Act Section 7 consultation with the USFWS was the well coordinated BA, which included the creation of a 2,200 acre Bat Conservation Area (BCA). The BCA was created in such a way to conserve known bat habitat as well as allow connectivity along stream corridors. At the same time it minimizes the amount of land restricted for development by overlapping areas that were already protected due to wetlands and cultural resources, and still allow for other uses such as military training and recreation. The FMP inventoried forest stands in the BCA concentrating on known Indiana bat maternity colonies. This data will be used to determine forest types selected by the bat and to develop predictive models for potential bat habitat use in the Northeastern U.S. FWMP staff also developed lighting minimization measures for inclusion in construction contracts. This not only benefits endangered species but also leads to increased energy efficiency and decreased light pollution.

Fort Drum has been an important focal area for bat community research in recent years, including efforts involving White-Nose Syndrome (WNS). The Fish and Wildlife Program at Fort Drum are integral partners in ongoing research on WNS, an unprecedented wildlife health crisis that has killed over one million hibernating bats in the Northeast.. In conjunction with the NYSDEC, USFWS, USFS and the USACE Engineer and Research Development Center (USACE-ERDC), the FWMP has worked to understand how bats are affected by WNS. Research at Fort Drum has clearly



*Fort Drum Wildlife Biologist, Chris Dobony, is seen here inspecting a Little brown bat, captured during a mist net survey.*

demonstrated the enormous impact WNS has on bat communities, and subsequently on the ecological integrity of military installations. FWMP staff is involved in national research efforts to examine potential impacts from WNS and the potential persistence and transmission of the disease in summer maternity colonies. Research at Fort Drum demonstrated there is a small probability individual bats can heal from WNS infection and survive multiple infection cycles, offering some hope against the devastation of WNS.

FWMP staff conducts installation-wide planning level bat survey and monitoring efforts for the federally endangered Indiana bat. These efforts include acoustical surveys using Anabat II echolocation detectors. This remote survey method does not influence bat behavior and data was analyzed through cooperative efforts with the USACE-ERDC, the U.S. Forest Service (USFS) and universities. This data shows the difference in bats before and after WNS. Fort Drum continues the effort to refine acoustical surveys for the detection of bats which can be used by other installations.

An ongoing relationship with DPTMS, DPW-Roads and Grounds and the NR staff resulted in an effective beaver management policy that helps deal with flooding issues which affect valuable training land. FWMP staff oversee all beaver management to reduce their impact and ensure compliance with NYSDEC permits. A part of this program is to oversee volunteer nuisance trappers who are given access to otherwise restricted areas.

NR staff are dedicated to protecting migratory birds and enhancing their habitat. Fort Drum was as an Important Bird Area by Audubon New York primarily because of the installation's grassland bird populations. A new mowing/prescribed burn regiment was developed with DPTMS-ITAM, to manage Fort Drum's open grassland communities. These maintenance activities are timed to avoid the

core nesting season. Other survey efforts focus on species of primary concern in the region, such as grassland birds (e.g., Henslow's sparrow, Sedge Wren), nightjars (e.g., whip-poor-will), red-headed woodpeckers, and golden-winged and blue-winged warblers. In most cases, Fort Drum has more of these species in a given area than anywhere else in the northeast. For the past two years, a Migratory Bird Management Plan, has been in development and will address all 249 species on Fort Drum.

### **FISH AND WILDLIFE RECREATION**

More than 3,000 visitors use Fort Drum annually for hunting, fishing, trapping, camping, bird watching, hiking, biking, snowshoeing, skiing, dog training and berry picking. Approximately 69,000 acres are available for recreation.

Beginning in 2010, all fees for Recreation Permits on Fort Drum were waived. Recreation Permits and Access Passes are still required for access and safety considerations. New York State licenses are required to hunt, trap, and fish on Fort Drum. These fee waivers will promote outdoor recreational activities while supporting Soldiers, Families and the North Country community.

The FWMP coordinates with NYSDEC to stock approximately 4,500 trout annually in Fort Drum streams, at no cost.

Fort Drum offers special hunting opportunities for Soldiers assigned to a Warrior Transition Unit, persons possessing a New York State Non-Ambulatory Hunter Permit, or persons with a life-threatening illness participating through a non-profit organization. These areas were established in locations that were otherwise closed to recreational access.

The FWMP provides in-house created brochures highlighting small game hunting, wildlife viewing, birding, and other animal identification guides. A new web site, created in 2010, with up-to-date recreation information can be found at: <http://FortDrum.isportsman.net>.



*Eagle Scout William Pogue and volunteers plant native pollinator gardens.*

An eight-page color newsletter, *Fort Drum Outdoors*, is published bi-yearly and distributed to all Fort Drum Recreation Permit holders and on-post housing residents, highlighting the many outdoor recreational opportunities available.

### **OTHER NATURAL RESOURCES**

In 2009, the NR staff, with support from a National Public Lands Grant, assisted an Eagle Scout project planting pollinator gardens throughout the cantonment area. The Eagle Scout successfully developed native pollinator gardens in heavily managed landscapes to increase awareness of the decline in pollinators and increase pollen diversity to help bolster pollinators resistance to disease, pesticides and other stresses. Additional benefits from these gardens are the reduced cost of lawn mowing and the outdoor recreational enjoyment for Soldiers and their Families as these gardens prosper.

In another novel arrangement, FMP extended an apiary lease for five years at ten various locations on the installation. This agricultural lease benefits small farm producers in the North Country as well as providing additional pollinators for Fort Drum's native habitat.

### **INVASIVE SPECIES CONTROL AND PEST MANAGEMENT**

By establishing a baseline survey for invasive species, recognized as one of the most severe environmental problem for training, land managers have the ability to prevent the future spread or introduction of such species on Fort Drum. To perfect invasive species tracking and management efforts, the GIS office partnered with DPTMS-Range and ITAM to develop appropriate survey and data collection methods to track and analyze parameters which help to predict the susceptibility of areas to invasion, understand the biological dynamics which influence spread, and develop and implement management plans to detect and rapidly respond to new infestations. After only one field season of implementation, more than 951,000 square meters (235 acres) of

training land has been inventoried, finding 15 different types of invasive species.

Through the cooperation of the APHIS-Plant Protection Quarantine, bio-control agents were released for three invasive plant species on Fort Drum. This was an effort to control purple loosestrife, spotted knapweed, and leafy spurge with no direct cost to the installation, while also reducing the need for pesticides; now that these insectaries are established, they are self-maintaining.



*NR staff together with volunteers from MWR- Child & Youth Services, planted more than 300 trees near newly constructed Soldier barracks, at no cost to the installation. The NR team regularly supports MWR- Child & Youth Services with activities like: summer camps, wild-life education, making maple syrup and creating bird*

NR staff is working with the USFS and the New York State Department of Agriculture and Markets to monitor invasive forests pests, such as the Sirex wood wasp. The FMP deployed and monitored insect traps as part of the effort to study the wasp and other invasive pests like the Emerald Ash Borer and the Asian Gypsy Moth. Data collected here is crucial for the health of forests in the entire Northeastern U.S.

### **CONSERVATION EDUCATION**

With the generous support of the NYSDEC Saratoga Tree Nursery, the NR staff, over the last two years have planted more than 5,000 trees at no cost to the installation and given away more than 1,000 trees on Earth Day.

Fort Drum NR staff coordinate, plan and execute several popular yearly public outreach events like, Annual Youth Fishing Derby, Earth Day, Arbor Day, International Migratory Bird Day, and Maple Days. NR staff also attend Super Science Saturday at Jefferson Community College, story time at the Post library, Earth Day events held by NYSDEC, Lowville County Fair, Installation Safety Day, Outdoor Expo, school science fairs, school presentations, MWR Child and Youth and School Services summer camp programs and other similar events and activities.

### **COMMUNITY RELATIONS**

Public awareness and education of environmental laws and restrictions is the key to enforcement. The NR staff continues to be DoD leaders in creating an environmentally-conscious community for Fort Drum and the surrounding areas. NR staff served as wetlands experts on panels at the Sustainable Range Program Conference in 2009, presented at the Annual DoD Forestry Conference in 2008 and 2009, presented at the National

Military Fish and Wildlife Association annual meeting, published in scientific journals (to include *Northeastern Naturalist*), environmental textbooks as participant authors, DoD Legacy newsletters and local news outlets.

FMWP held its first town-hall meeting in April 2010. FWMP presented a background of responsibilities, history, and future proposals. The floor was opened to audience questions, comments and suggestions. Forty-three people were in attendance as well as NYSDEC staff, and law enforcement.

Students and special interest groups travel to Fort Drum throughout the year to learn about the leading edge environmental technology and studies that are being used to protect and manage the environment. NR staff-lead guest lectures at local colleges and universities provide silvicultural and forest tours to the NYS Ranger School, State University of New York Environmental Science Forestry classes, migratory bird lectures for the Seaway Trail Association and the New York State Land Owner's Association annually.