

Michigan ARNG

Fort Custer Training Center

Natural Resources Conservation, Small Installation

INTRODUCTION

Fort Custer Training Center (FCTC) is a 7,500-acre Michigan Army National Guard (MIARNG) installation which provides trained and ready forces in support of state, local and regional emergencies and in support of the National Military Strategy. FCTC employs 150 military personnel and 74 civilians and trains approximately 160,000 Soldiers annually.

The FCTC Integrated Natural Resource Management Plan (INRMP) covers the entirety of the installation. FCTC has a number of significant natural features which lie nested in a matrix of woodlands, wetlands and remnant prairies covering approximately 7,300 acres. Significant natural features of FCTC include several rare and at-risk communities such as Prairie Fens, oak savanna, oak forests, southern wet meadows, southern hardwood swamps, dry sand prairies and mesic prairies. These communities provide habitat for threatened and endangered species and support many plant alliances.

On this page: U.S. Soldiers from the Michigan Army National Guard exit a simulated Iraqi building after clearing it during a combat training exercise. (DoD photo by Staff Sgt. Helen Miller, U.S. Army)

JUDGING CRITERIA

-  Program Management
-  Orientation to Mission
-  Technical Merit
-  Transferability
-  Stakeholder Interaction

BACKGROUND

FCTC's INRMP was completed and approved in September 2001 and was revised and approved in 2009. Objectives listed in FCTC's INRMP have either been attained or are ongoing activities.

FCTC's Environmental Office is fully staffed and supported by the greater MIARNG Environmental Office at the headquarters. The Environmental Office reports directly to the Michigan Assistant Adjutant General and is part of the command decision-level process team. This decision-level authority was allotted to the office because of its history of excellent environmental and natural resources management programs and its proven provision of a high-quality Soldier training environment.

Staff members participate on a variety of boards and committees for environmental organizations, including Michigan Prescribed Fire Council, National Guard Bureau (NGB) Education and Outreach Committee, NGB Cultural and Natural Environmental Advisory Committees, the Michigan Stewardship Network, Michigan Invasive Plant Council, National Coalition of Prescribed Fire Councils, Kalamazoo River Watershed Council and Technical Working Group, Calhoun Conservation District and the Michigan Association of Conservation Districts and Potawatomi Resource Conservation and Development Council.

ACCOMPLISHMENTS

Overall Natural Resources Conservation Management

The FCTC's Natural Resources (NR) staff is committed to maintaining balance between environmental management requirements and MIARNG mission support. The NR staff is closely integrated with FCTC's Facilities and Engineering, Range Control and Integrated Training Area Management (ITAM) Offices to best coordinate environmental activities with training priorities and construction requirements. A range complex master plan was created jointly between these offices, which meet weekly, and its implementation will help enhance each office's awareness of FCTC's environmental goals.



“I was very impressed with the way the MIARNG balanced the work of managing a diverse natural resource program with excellent coordination with their partners. I liked the emphasis on cost savings and focus on accomplishing work with the installation mission in mind. They have developed an innovative program that includes an emphasis on restoring endangered species, and preserving migratory birds, as well as reaching out to the community and providing outdoor recreation opportunities to the disabled.”

- Laura E. Henze, National Sikes Act Coordinator, USFWS

FCTC recently collaborated with the Michigan Natural Features Inventory to update the installation's planning-level survey, initiated under the first INRMP developed 14 years ago. The survey results confirm an exceptional amount of restoration and enhancement, illustrating the strength of FCTC's natural resources management program. The updated inventory demonstrates approximately 80 percent of Michigan flora and fauna species are present at FCTC, including 14 new species, and all recommendations from the original planning-level survey were fully implemented.

FCTC uses innovative and cooperative management approaches to enhance its conservation program and lower costs. The NR staff looks for ways to partner with other agencies that share the same environmental challenges, meeting these challenges at a lower cost to everyone. In collaboration with The Nature Conservancy (TNC), Southwest Michigan Land Conservancy, Kalamazoo Nature Center, Pierce Cedar Creek Institute and Western Michigan University, FCTC formed the Great Lakes Ecological Management Team to provide field crew support for invasive species control activities. The team conducts work within the partnership for much less than the cost of hiring a private contractor, making state-of-the-art invasive species management techniques available to FCTC and other organizations throughout the state.



The NR staff actively manages current and future environmental challenges. FCTC is aware there may be imminent impacts on individual species, communities and ecosystems due to climate change. To that end, NR Specialist Michele Richards serves as a Michigan Climate Policy Fellow, making climate change policy recommendations to state and local governments, businesses and other stakeholders to help mitigate anticipated effects of global climate change. She also stays current on climate change topics by participating in technical working groups for all of the endangered species for which FCTC has suitable habitat, including the Karner Blue and Mitchell's Satyr butterflies, the Eastern Massasauga Rattlesnake, the Indiana Bat and the Cerulean Warbler.

Mission Enhancement

The FCTC's Environmental Office supports the installation and the MIARNG mission in a number of ways. The NR staff directly manages range and training land to the benefit of the Soldier through the use of prescribed fire and forest restoration and indirectly provides technical Geographic Information System (GIS) and Global Positioning System (GPS) support to Range Control and the Facilities and Engineering Office. These offices use GIS and GPS to map ranges and range features for use in future planning and to comply with installation status reporting requirements.

Prescribed fire is a critical tool used by FCTC to enhance Soldier training by increasing visibility and maneuverability in training areas. Prescribed fire also reduces the likelihood of wildfires, as well as the spread of wildfires, due to range usage and training activities. FCTC's forest restoration activities, particularly understory restoration and management, make land navigation and bivouac training exercises far more practical, increasing the success of Soldier training in these areas. FCTC also works to enhance and expand habitat on the installation, including wetlands expansion. This creates an abundance of pristine communities which could provide mitigation credit if necessary training expansion leads to environmental impacts in the future.



Land Use Management

Land management activities at FCTC intentionally improve vegetation on training lands, protect and conserve native plants, restore ecologically unique areas and reduce re-vegetation and long-term land maintenance costs.

Soil erosion and sedimentation control Best Management Practices (BMP) are aggressively implemented for construction activities, eliminating more than 90 tons of sediment deposition in installation wetlands annually. These BMPs include silt fencing, the use of geo-textile grids and fiber mats on slopes and deliberate land contouring. FCTC also uses a number of stormwater management techniques to control erosion and sedimentation, including sediment traps in individual stormwater inlets, diversion channels for roadside ditches, stormwater retention ponds and vegetated trail ditches planted with native species for soil stabilization.



The FCTC ITAM re-vegetation program maintains and improves vegetation on training and range lands using native species. FCTC's NR staff collects native plant seeds from the installation's flora and grows the collected seeds into plugs in partnership with Natural Resources Conservation Service (NRCS) - Rose Lake Plant Materials Center. Plugs grown by FCTC were planted on 170 acres of the Convoy Reaction Course training range, providing necessary erosion and dust control.



FCTC's ITAM revegetation program consists of collecting native plant seeds from installation flora to maintain vegetation genotypes native and true to the region. In partnership with the NRCS, the collected seeds are grown into plugs and then replanted on training ranges and throughout the installation to repair impact damage, control erosion and maintain native species health.

Partnering with Native Connections, FCTC also began forb seed collection and propagation. These seeds and the resulting seedlings are used to restore prairies, increase grass cover for erosion control and repair trails. The seed collection plots yield around 40 20-pound bags of grass seed each year, which represents an avoided seed purchase cost of approximately \$10,000 to \$12,000 annually. A combination of volunteer and paid labor to harvest the seed results in an additional \$2,000 to \$4,000 in savings every year.



This will provide unique and special forest areas for decades to come.

In addition to this cost savings, FCTC also received nearly \$20,000 from U.S. Fish and Wildlife Service (USFWS) to seed more than 40 acres of FCTC's Convoy Reaction Course with native species prairie flora.

Forest Management

FCTC manages forest restoration programs and maintains an extensive prescribed fire program. Restoration work includes managing the canopy density to the liking of birds that require a particular amount of cover and managing the understory to assist ground and shrub nesting birds. Managing in this way also removes thick and thorny understory growth for the benefit of the Soldier, making land navigation and bivouac training exercises far more successful and feasible.

Prescribed fire is an extremely valuable management tool benefitting the ecological health of prairies and forests on FCTC and one that the NR staff has worked diligently to master. The NR staff completed required training to conduct burns independently, which is a major cost saving initiative. Building off of the U.S. Forest Service - FireMon program, FCTC also developed its own fire monitoring program in 2008 to track fuel loads and habitat effects for forest and prairie regeneration and invasive species control. The NR staff hires members of the Great Lakes Ecological Management Team at low rates to serve as a fire team. This year, 3,700 acres were managed with fire, a record for FCTC, making it one of the top three entities in Michigan for fire management.



Each year FCTC participates in National Public Lands Day, conducting urban reforestation projects as part of the event. NR staff plant trees around barracks and buildings in the cantonment area. The trees have two major benefits, aiding in force protection by making access to the buildings by anything but foot traffic more difficult and growing to improve energy efficiency by providing the buildings with shade to the south and cover to the north.



The Army Corps of Engineers conducts timber harvesting for FCTC. However, in the past, timber harvesting operations have caused damage to the forest ecosystem. FCTC is now working to strengthen its timber harvest regulations and conducting research to help identify low-impact timber harvest techniques designed for the eastern forest types found on the installation.

Fish and Wildlife

FCTC's restoration programs, especially wetlands and prairie restoration, provide habitat for a number of ecologically important species, including the Indiana Bat, the Cerulean and Hooded Warblers, and the Eastern Box Turtle. FCTC restored the natural hydrology of a 45-acre wetland site in partnership with Ducks Unlimited, USFWS, Potowatomi Resource Conservation and Development Council, and Kellogg Biological Station. This additional wetland area offers a reserve of wetland acreage if other wetlands on the installation are ever impacted due to training requirements. Expanding the wetlands also creates additional habitat for the Mitchell's Satyr Butterfly.



Ecosystem management using prescribed fire not only improves habitat quality, but also improves training land viability and accessibility for Soldiers. 2009 was a record year for FCTC, in which a total of 3,700 acres were managed with fire and a new fire training program was implemented.

Prescribed fire is used to restore vegetation in Prairie Fen communities at FCTC. The Prairie Fen is a unique ecological community and a globally vulnerable community. The prairie community provides food and habitat for the Federally Endangered Species Mitchell's Satyr Butterfly and the federal candidate species Eastern Massasauga Rattlesnake. Because of the high-quality habitat restoration and maintenance and the large swath of ideal habitat in a low-disturbance area, FCTC is one of two top sites being considered for reintroduction of the Mitchell's Satyr Butterfly from a captive rearing program. FCTC is also being considered for reintroductions of the Eastern Massasauga Rattlesnake and the Karner Blue Butterfly.



FCTC serves as a major flyway and nesting site for a wide variety of migratory bird species. FCTC's NR staff and local experts manage an ongoing migratory bird monitoring program in which nest success, predation and point count data have been collected over the past decade. In a display of adaptive and effective management, FCTC and the Kalamazoo Nature Center adopted an updated monitoring methodology called Mapping Avian Productivity and Survivorship, which will allow FCTC to capture a better, broader picture of migratory bird health.

The NR staff at FCTC has an excellent relationship with USFWS and the Michigan Department of Natural Resources and Environment. Representatives from these organizations attend FCTC's annual INRMP working group meetings, and the NR staff attends USFWS species-specific meetings for every species present at FCTC.

FCTC manages spring and fall hunting seasons for military personnel, the general public, disabled hunters and youth hunters. Formal standard operating procedures (SOP) have been approved for all hunting activities, and there is a standardized application fee of \$5. FCTC recently expanded its hunting program to include turkey, deer and raccoon seasons, and dedicated days for bow, firearm and black powder hunting. Fishing is also available for active military personnel and Family members as well as retirees.

Other Natural Resources

The NR staff at FCTC consistently looks for ways to

directly engage and educate the greater community, and FCTC sees about 1,500 recreational visitors to the installation annually. In coordination with sponsors such as the National Wild Turkey



Federation, Whittails Unlimited and Michigan Paralyzed Veterans of America, FCTC organizes an annual two-day deer hunt for disabled veterans and wheelchair-bound individuals: the Freedom Hunt. FCTC provides a 950-acre site which has been carefully selected to maximize hunting opportunities for the disabled, equipped with wheelchair-accessible blinds and heaters. Volunteers are teamed with each hunter to assist them throughout the weekend, and all meals, lodging and deer processing are provided to participants free of charge.



FCTC hosts an annual Freedom Hunt for disabled veterans and wheelchair-bound individuals, providing food, lodging and volunteer aids at no cost to participating hunters. Pictured above is a member of the Grand Rapids Home for Veterans, transported to FCTC through MIARNG assets and provided with an all-terrain vehicle by Outbound Mobility.

There is no overnight camping at FCTC due to security issues, but the public can engage in daytime bird-watching and nature walks, which are guided so as not to interfere with military training. To protect its natural resources from unnecessary damage, FCTC does not allow off-road vehicle use, and the staff works proactively with range control and facilities engineering to prevent natural resource damage when heavy equipment training occurs.

The adjacent state park hosts bee farmers, and FCTC's restoration and conservation efforts promote the establishment of habitat for native pollinators, thereby increasing these pollinator populations and their viability.

FCTC conducts research and validation programs, often in partnership with academic institutions, such as a current garlic mustard bio-control research project with Michigan State University (MSU) and

long-term monitoring of Yellow Fumewort, a state-listed plant species, in partnership with the Michigan Department of Natural Resources and Environment (MDNRE). The NR staff conferred with MDNRE to develop a Yellow Fumewort monitoring protocol as a mitigation measure for construction of an armory in the species' habitat, thereby providing MDNRE with information to aid the species in recovery.

Invasive Species Control and Pest Management

FCTC supports integrated pest management through its participation in the Purple Loosestrife beetle project. FCTC partners with Kalamazoo Nature Center in an effort to use biological insect control instead of traditional chemical pesticides, and the partnership further engages a local high school to participate by raising beetles in their greenhouse. The students get an unparalleled, hands-on educational opportunity as they propagate beetles and work with FCTC to release them in affected areas. At an annual cost of only \$1,000, FCTC obtains 5,000 to 6,000 beetles for the installation, while tens of thousands of other beetles are raised and released regionally through this program. The area of Purple Loosestrife eradication continues to grow, with 30 acres currently managed with beetles and another 15 acres to be added soon. This method of Purple Loosestrife management reduces FCTC's use of herbicides by approximately five gallons each year.



FCTC participates in the Purple Loosestrife beetle project, an integrated pest management approach to controlling Purple Loosestrife invasions in installation wetlands.

Conservation Education

FCTC hosts and/or teaches at the annual Envirothon, a regional educational event for area high schools, and also participates in National Public Lands day with students and scouting groups to plant trees, establish nurseries and control invasive species. Twice a year, FCTC NR staff also hosts a science field day for members of the Michigan Youth Challenge Academy, a MIARNG program for at-risk youth. Science field day usually consists of presentations from local experts, researchers and NR staff on a wide variety of natural resource topics.

FCTC coordinates with students at all academic levels to deliver environmental education. The NR staff works with Kalamazoo Public Schools to bring students on the installation for field trips and lectures, and NR staff also visit local schools to give presentations on ecology, conservation, energy, geology and species preservation. The installation is also currently sponsoring an Eagle Scout project involving construction of Osprey platforms.

Hunter safety training for youth is offered by FCTC staff as well. The two-day youth safety program is managed by NR staff, deer hunt volunteers and safety instructors.

Community Relations

The NR staff presents at military and environmental conferences and workshops in an effort to share its expertise with other National Guard and military units, and with environmental agencies. FCTC management plans, SOPs and BMPs on erosion control, and environmental restoration are frequently adopted by other National Guard units.

FCTC also raises environmental awareness and shares its expertise on natural resource conservation topics in the local community. In cooperation with the Michigan Prescribed Fire Council and TNC, FCTC provides fire training for state agencies, non-governmental organizations and other National Guard employees. The five-course program prepares participants to be crew bosses and incorporates engine training, ignition and leadership in incident simulations. FCTC also sponsors basic firefighter-level courses, and FCTC NR specialist Michele Richards chairs the Michigan Prescribed Fire Council Outreach and Education Committee.



FCTC also offers research opportunities to graduate students from MSU and Purdue University. Recent graduate-level research projects have focused on milkweed and butterfly species, White-tailed Deer, Eastern Box Turtle, water quality, plant genetics and entomology.

Environmental Enhancement

FCTC's natural resources management program improves the quality of life for FCTC personnel and members of the surrounding community by creating a green space which is a haven for flora and fauna, including unique ecological areas and recreation opportunities.

FCTC's wetlands and Prairie Fens are unique and valuable ecological communities which are not well represented elsewhere in the state, offering visitors and students educational opportunities which would otherwise not exist for them.

The installation serves as a stopover and nesting site for migratory birds and is one of three sites in a regional migration flyway. This not only contributes to the environmental education opportunities which FCTC offers, but also provides excellent recreational bird-watching opportunities.

NR staff makes every effort possible to include the public and students from surrounding communities in the natural resource activities which take place on the installation, and FCTC works with a wide variety of local environmental organizations and academic institutions to share and transfer knowledge, advance research, increase regional biodiversity and decrease the cost of resource management.



The variety and integrity of FCTC's habitat, especially wetlands and Prairie Fens, provides an ideal habitat for federally listed and ecologically important species such as the Cerulean Warbler.

Natural Resources Compliance Program

FCTC reviews its INRMP and other written management plans annually to help ensure the NR program remains robust and on track. FCTC goes above and beyond the requirements for INRMP review by inviting all partners and regulators to provide input regarding projects to be included in the upcoming year.

The environmental projects undertaken by FCTC are adequately funded through federal and private sources and through the cost savings and cost avoidance measures which are a cornerstone of the FCTC's NR management program. FCTC's partnership in the Great Lakes Ecological Management Team and its seed propagation and collection programs highlight the installation's innovative cost savings and cost avoidance techniques. The NR staff also obtained \$50,000 in Legacy money as part of the DoD Partners in Flight program. Through Partners in Flight, FCTC participated in a regional survey of the Cerulean Warbler, which resulted in an unprecedented and comprehensive list of natural resource managers on all military land east of the Mississippi River.

FCTC also received \$5,000 in in-kind funding from NRCS, \$15,000 in in-kind donations from Ducks Unlimited and \$15,000 in in-kind donations from USFWS for wetlands restoration. In-kind donations include consultation, materials, equipment and labor. A North American Wetland Conservation Act grant was also approved for FCTC, and using funding from Ducks Unlimited and USFWS, the NR staff will stabilize, enhance and secure a nearly 500-acre wetland complex.

CONCLUSION

FCTC's Environmental Office continually demonstrates its achievements in every aspect of program management, from rare ecosystem restoration to community involvement to fiscal responsibility. The NR staff not only executes its objective of conserving FCTC's natural resources, it works to increase these resources by introducing endangered species onto the installation, creating wetlands mitigation banks, sharing management costs with partner organizations and transferring its expertise to students, the general public and other National Guard installations.