

## **Ft. Custer Vegetative Restoration – 2005 Report by Rose Lake Plant Materials Center**

**Background** Fort Custer Training Center (FCTC) in Southwest Michigan is 7500 acres of military tactical training area used by the Michigan National Guard and other branches of the armed forces. While FCTC is an important training facility, it is also home to a wide variety of natural resources, e.g., wildlife, forests, wetlands, surface water, and a variety of rare plant and animal species. Moreover, historic and cultural resources are located on the property. The facility is federally-owned and operated by the Michigan Department of Military and Veterans Affairs (MDMVA).

**Memorandum of Understanding** A memorandum of understanding between the NRCS Rose Lake PMC and the MDMVA was developed for restoration of native vegetation and habitats at Fort Custer Training Center. PMC staff will provide consultation and on-the-ground assistance for collection, propagation, establishment, and maintenance of native vegetation. PMC assistance with research and selection of proper native vegetation that addresses the natural resources and management needs of the firing ranges, ammunition bunkers, and tank sighting areas will mutually benefit MDMVA, FCTC, and NRCS.

**Deliverables** The following are being realized from the cooperative agreement between MDMVA and NRCS Rose Lake PMC:

- Identification and selection of specific native plant species for collection, increase, testing, and evaluation for conservation uses at FCTC, including grasses to reduce mowing maintenance on ammunition bunkers (see below) and firing ranges and native grasses for roadsides.
- Established production plots/fields of selected native plants to provide seed for prairie plantings at FCTC. These plants were greenhouse-grown in cone-tainers and transplanted into seed production fields at FCTC in 2005:
  - 4000± purpletop (*Tridens flavus* (L.) A.S. Hitchc.)
  - 6000± big bluestem (*Andropogon gerardii* Vitman)(Plans for 2006 include growing and transplanting another 17000± indiagrass (*Sorghastrum nutans* (L.) Nash) and 5-6000 big bluestem plants.)
- Twenty one pounds of little bluestem pure live seed harvested at FCTC in 2004, cleaned at the PMC, and returned to FCTC.
- Technical expertise on plan development for establishing native prairie plants on the tank range.
- Consultation and hands-on implementation of weed control, planting, plot/field production, and management.
- Protocols for harvesting, cleaning, and handling of seed. Approximately 31, 3, and 1 lbs of clean seed of little bluestem, big bluestem, and purpletop, respectively, will be returned to FCTC from material harvested in 2005.

**Ammunition Bunkers** Demonstration and research plots for were established on an ammunition bunker (Table 1) in collaboration with environmental staff from FCTC in 2005. Plots were designed so that vegetation species and establishment methods could be evaluated. Evaluation criteria will include ease of establishment, mowing and maintenance requirements, soil stabilization on the 30-40° slopes, fire hazard, etc. Experimental design is a randomized complete block with three replicates, facing northeast, east, and southeast. Treatment strips (species and/or establishment method) are 30 ft long up and down the slope and 3 or 7 ft wide.

**Table 1. Vegetation and establishment methods for Ft. Custer ammunition bunker trials.**

Common Name		Scientific Name	Establishment Method	Approximate Seed or Plant Population
Bermudagrass		<i>Cynodon dactylon</i> (L.) Pers.	Plugged into coir biodegradable mattress (with potting soil); established off-site; and transported to bunker in fall 2005	6 plants/ft <sup>2</sup>
Periwinkle		<i>Vinca minor</i> L.	Plugged into coir biodegradable mattress (with potting soil); established off-site; and transported to bunker in fall 2005	Actual planting population not calculated due to stoloniferous nature of Periwinkle
Sedum	Two row stonecrop	<i>Sedum spurium</i> Bieb. 'Tricolor'	Plugged into soil overlaid with 0.75-in X 0.75-in mesh coir fiber, biodegradable mats covering in summer 2005	3 plants/ft <sup>2</sup>
	Stone- crop	<i>Sedum acre</i> L.	Same as above	Same as above
	Orange stonecrop	<i>Sedum kamtschaticum</i> Fisch. & C.A. Mey.	Same as above	Same as above
	Orange stonecrop	<i>Sedum spurium</i> Bieb. 'Fudlaglut'	Same as above	Same as above
Red fescue		<i>Festuca rubra</i> L.	Direct seeded on-site at bunker into soil overlaid with 0.5-in X 0.4-in mesh coir fiber, biodegradable mats in fall 2005	4 lbs/1000 ft <sup>2</sup>
			Established off-site by direct seeding into coir biodegradable mattress (with potting soil); overlaid with 0.5-in X 0.4-in mesh coir fiber, biodegradable mats and transported to bunker in fall 2005	4 lbs/1000 ft <sup>2</sup>
Buffalograss		<i>Buchloe dactyloides</i> (Nutt.) Engelm.	To be direct seeded on-site in spring 2006	To be determined
			To be direct seeded into biodegradable mattress and transported to bunker in spring 2006	To be determined

