



Research

The Center's first project was in 1985 developing of a vegetation sampling scheme to inventory and monitor natural resource conditions of Army training lands. Since that time the range of research efforts has diversified. While all the assets of the College of Natural Resources are available to CEMML, the Center also forms research teams with other units within CSU, private consulting firms, state and federal agencies, and industry. Past and ongoing research investigates:

- Impacts of military training on vegetation, soils, and watersheds
- Resource carrying capacity
- Economic analysis of training land management
- Restoration ecology
- Plant systematics and population biology
- Threatened and endangered species ecology and management
- Conservation biology
- Biodiversity
- Fire ecology
- Plant community delineation and analysis
- Predictive modeling



Graphics, Publications, and Video Productions

A full array of services is available for the production of publications, educational materials, newsletters, posters, videos, maps, Internet-based training programs, etc. in all formats. Our team of graphic artists, technical writers, photographers, and editors develop materials in all media for effective, professional communication.



Cooperative Support Services

The Center provides professional services for short- and long-term assignments on site. Field technicians and specialists in natural and cultural resources, GIS, and ecological research are staffed at installations for tasks ranging from seasonal data collection to multi-year projects.



Workshops, Short Courses, and Training

CEMML provides a wide range of professional training in support of the DoD conservation and land management missions. These services include technical training tailored to meet client needs and formal short courses on military land management topics. The Center has experience hosting workshops and conducting intensive field training. CEMML has professionals in natural resource management and is associated with other research groups at Colorado State University, private consulting firms, and state and federal agencies.



Graduate Studies

Master's Degree Programs with an emphasis on military land management are offered through the College of Natural Resources. These programs afford mid-career and prospective DoD environmental and natural resources professionals with a unique opportunity to enhance their knowledge and on-the-job skills. The Center's staff provide expertise, resources, and sponsorship of students in cooperation with the College of Natural Resources.

For More Information Contact:

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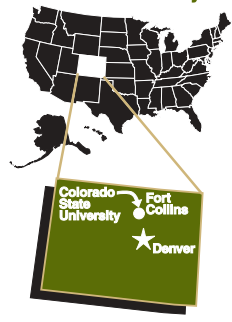
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Location of Colorado State University



CEMML

Center for Environmental Management of Military Lands



**Colorado
State
University**

Knowledge to Go Places

The Center for Environmental Management of Military Lands is a research and service unit in the College of Natural Resources at Colorado State University. Since 1985 the Center has supported the U.S. Department of Defense, providing professional technical services in natural and cultural resources management and environmental conservation. The Center assists military trainers and land managers in the maintenance of healthy, diverse ecosystems to support sustained, realistic military training and testing exercises.



Resource Inventory and Monitoring

CEMML ecologists, statisticians, and database managers develop inventory and monitoring programs tailored to address an installation's specific needs. The Center has long experience in the Land Condition Trend Analysis program, and the inventory and monitoring of vegetation, wildlife, invertebrates, fire fuels, soils, water quality, and other natural resource attributes. In addition, the Center has direct access to a vast array of expertise at CSU and the many federal resource management agencies based in Fort Collins.

- Sampling design
- Data collection, management, and analysis
- Report preparation
- Global Positioning System expertise
- Management plans



Floristics

Botanists at CEMML work to document and conserve the remarkably diverse plant resources on military installations across North America, Hawaii, and Germany. Our plant scientists have conducted comprehensive floristic surveys on over 50 installations in a wide variety of biomes. CEMML's

botanists have done extensive work with the many rare and endangered plant species found on military lands. The Center's herbarium houses over 35,000 plant specimens from military installations, the largest such collection in the world.

- Planning level surveys
- Rare plant surveys and monitoring
- Plant community mapping
- Plant identification
- Plant specimen lamination
- Voucher preparation and archival
- Rare plant propagation and recovery
- Mapping and control of invasive species
- Botanical illustration



Data Management and Analysis

The Center provides comprehensive data management, data analysis, and report preparation services on a wide range of environmental management programs for installations. These services include database development, data integrity and security procedures, and customized applications development.

- Natural and cultural resources sampling and surveys
- Experimental design
- Statistical analysis
- Database development and management
- Quality assurance and quality control
- Data integration



Computer Cartography and Spatial Analysis

The Center's Computer Cartography and Spatial Analysis team combines experienced personnel with state-of-the-art technology to assist installation range and training land managers. The staff develops GIS databases and produces installation-specific maps and overlays. Aerial photography and multi-spectral imagery are used to produce cost-effective natural resources mapping solutions. CEMML assists installations with a complete range of spatial analysis solutions. In addition, the staff provides customized GIS training and technical support.

- Cartographic production
- Custom GIS software application development
- Digital database development

- GIS modeling
- GIS software & hardware technical support
- LCTA plot allocation
- Remote sensing research and application development
- Vegetation mapping
- Web based map services development and deployment



Environmental Planning

The Center works closely with installations to produce natural resources management plans, environmental impact statements (EISs), and environmental and biological assessments (EA, BA). The Center can serve as project leader or team with others to produce quality products that meet the planning needs of the installation. CEMML also produces environmental awareness materials such as soldier cards, posters, and handbooks to enhance the military's environmental stewardship through education.

- Integrated natural resources management plans
- Environmental awareness materials
- Environmental assessments
- Environmental impact statements
- Biological assessments



Cultural Resources Management Support

The Center provides technical support to military land managers for cultural resources management planning and compliance. The goal is to ensure that these diverse and nonrenewable heritage resources are adequately protected and managed in compliance with applicable Federal legislation without impeding the military training mission. CEMML offers a range of CRM support services in the following areas:

- Integrated cultural resources management plans
- Cultural resources inventory and monitoring studies
- National Register eligibility assessments
- HABS/HAER documentation
- Native American consultation
- Cultural resources awareness materials