

Sustainable Training Lands and Mission

The Piñon Canyon Maneuver Site (PCMS) is an expansive training site with 235,896 acres used for force-on-force mechanized brigade training. Fort Carson is also large, with 138,523 acres of wetlands, recreational sites, training areas, and cantonment activities. Hosting soldiers, families, civilian employees, military retirees, and contractors, the Fort Carson garrison is considered a small city. Maintaining soils, rangelands, forests, wetlands, landscaping, and preventing wildfires and invasive weeds are ongoing challenges.

Due to the dry climate and altitude, Fort Carson and the Piñon Canyon Maneuver Site require continual specialized maintenance to provide realistic training areas. High altitude prairies have a dry climate, yet are wet enough to grow specific and locally adapted plants. For example, the balance of plants, water, and soils on the land is to sustain the ecosystem, which is used for the military training mission. If vegetation is lost due to military maneuvers or other activities, training realism will suffer.

Live fire training is not allowed on PCMS, but many firing ranges are available downrange of the cantonment area on Fort Carson. The G3, Directorate of Plans, Training and Mobilization, Range Control Office (G3, DPTM) controls training area allocation and live fire range scheduling. After maneuvers, DECAM and Range Control personnel evaluate the areas to locate disturbed areas and determine appropriate remediation.

In addition to the myriad of vehicles and equipment used for training, troops also must bivouac (camp out) just as they would in a war situation. Approximately one ton of trash per day is created by 500 troops in a bivouac field environment. Trash is temporarily collected before removal, using vehicles that could be used for other mission-related purposes. In the cantonment area of the garrison, removal of trash is normally performed by contracted services.

Key Sustainability Considerations

Transformation – As the Army transforms over the next 25 years, the systems and mission of Fort Carson are likely to change as well. More lethal systems that function at greater distances will need different types of areas for training. Land requirements for new systems and missions may have a profound impact on Fort Carson’s sustainability.

Land Use – The fragile balance of plants, water, and soils on land is required for sustainability of both the ecosystem and the military training mission. Factors to consider in sustainable land use efforts include:

- Forest resources help stabilize soils and provide concealment for tactical vehicles and personnel, allowing for realistic training.
- Non-native plant species can harm wildlife, cause soil erosion, compete with native species, and invade wetlands.
- Prescribed fires prevent wildfires that degrade training lands, save significant training time and money used to fight wildfires, and allow for increased training by creating buffer zones at live fire ranges.
- Soil erosion, caused by training practices, water flow fluctuation, and wildfires, can degrade land, rendering it useless for training. Soil moisture is an important factor in erosion and training. Proper instrumentation and a central database can reduce training-related soil damage.
- Sustained wildlife requires a focus on ecosystems, rather than man-made borders. Efforts towards sustainable wildlife include education, conservation, recreation, and enforcement.

Water – Erosion caused by training discharges sediment and nutrients into streams and lakes. Military maneuvers that damage vegetation and increase soil compaction, which in turn increases flow into a stream, can ultimately have negative effects on the watershed containing the stream. Pollutants from land use activities and discharges that occur within watersheds or aquifer recharge areas can affect surface water and groundwater resources adjacent to and far away from the activity.

Cultural Resources – Fort Carson and PCMS cultural resources are non-renewable and must be carefully sustained. Preservation and mitigation options are avoidance (re-siting of project/activity), protection (fencing or signage), and data recovery (excavation and documentation). Respect for past cultures and people allows for more complete histories and a better understanding of who we are today.

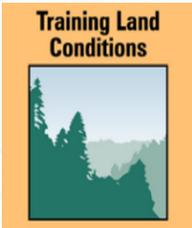
Noise – Fort Carson is surrounded by an expanding Colorado Springs community (up 27.5 percent over the past 10 years). Close proximity of civilian lands generates infrequent noise complaints. Resolution of such complaints requires community education on the importance of Army training and the role of Fort Carson units in the Army’s Strategic Plans. Common sense training plans support readiness requirements and alleviate some civilian nuisance concerns. Noise models should be incorporated into community and regional planning to ensure “smart growth.”

Urban Development – Fort Carson should continue to work with local communities to influence local land use management to minimize (1) impacts of adjacent community growth on readiness training and training land sustainment and (2) impacts that Army activities may have on adjacent communities. The lease or purchase of adjacent lands can expand species’ habitats, reduce restrictions on training, and create buffers between Army activities and the desirable growth of surrounding communities. Realistic community zoning and real estate transactions should reflect and minimize the impacts of Fort Carson’s training mission.

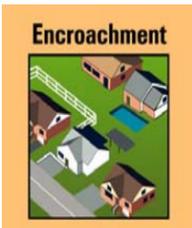
Realm of Possibilities



Training Lands and Ranges



- **Tactical Concealment Area Planning:** The Tactical Concealment Area Planning and Design Guidance Document, developed by the Army Environmental Center and Army Engineer Research and Development Center, is an approach to the design of training lands that integrates training and environmental requirements to expand and improve training resources.



- **Private Lands Initiative:** The Private Lands Initiative (PLI) is a cooperative effort between Fort Bragg, The Nature Conservancy, U.S. Fish and Wildlife Service, and private landowners around the borders of the installation. By preventing specific parcels of land from being developed, the PLI creates a “buffer zone” of sorts, allowing for better wildlife habitat in the region. With increased habitat for endangered species outside the fence line come decreased training constraints inside the fence line. Fort Bragg and its partner first started the PLI in 1995.

- **Joint Land Use Study (JLUS):** A Joint Land Use Study may be useful for Fort Carson. At Fort Bragg, for example, the JLUS identifies the current land uses for property surrounding Fort Bragg and Pope Air Force Base and, in conjunction with local community planners, to make recommendations for future zoning ordinances, or deed/title disclosures that would encourage compatible land uses.



- **Living Machines®:** These machines use bacteria, plants, snails, and fish to treat sewage and other wastewaters. The machines look like greenhouses and work by using the plants and animals to break down the wastes and digest organic pollutants. They are made by Living Technologies, Inc., and have been permitted at 23 locations in seven different countries, including the United States. They offer better, more stable treatment at the same cost as traditional sewage treatment. It is possible that a similar technology could be developed to control the potential release of pollutants from ranges into groundwater and surface waters. The Army’s Sustainable Range working group is charged to develop new ways to design the ranges of the future to reduce contamination by pollutants.

Challenge: Sustain and improve training lands and ranges to support realistic military training at Fort Carson and the Piñon Canyon Maneuver Site balanced with societal responsibilities and environmental stewardship. How can Fort Carson...

- Ensure that military training is not compromised by environmental degradation and habitat disruption?
- Protect significant cultural resources and respect cultures with traditional ties to the land, while maintaining the largest possible area for military training?
- Manage training lands to sustain both military training and a healthy biodiverse ecosystem?
- Sustain the training mission in the face of increasing and costlier environmental and regulatory requirements?

Key Facts

Unit and Activity	Fort Carson	Piñon Canyon Maneuver Site
Number of Training Areas	56	23
Acres of Training Areas	82,000	220,000
Acres of Impact Areas	21,740	0
Recreation Acreage	2,268	0
Acres of Hunting and Non-Consumptive Wildlife Use	All (seasonal)	All (seasonal)
Acres of Wetlands	1,076	5,846
Acres of Forests	40,000	65,730
Acres of Fish and Wildlife	340,137 Total	
Acres of Cultural Sites	6,000 Total	