

Mello Aff #2, Par 12h

Approximately 6.6 percent of LANL acreage is bare soil. Soil erosion rates vary considerably on mesa tops at LANL, with highest rates occurring in drainage channels and areas of steep slopes and lowest rates occurring on gently sloping portions of the mesa tops away from channels. The Cerro Grande fire has changed the extent and condition of much of the forest, range, and soils of the LANL site. Even more dramatic changes have occurred within the mountain slopes and canyons to the west and upslope of LANL. Several thousand acres of LANL forest and rangelands burned with variable intensity during the fire. These areas are under various stages of rehabilitation and postfire recovery. Site soils, particularly in severely burned areas and drainages, have become more vulnerable to erosion because of loss of vegetation and the increased flooding potential resulting from the fire.



LANL's lands support state- and federal-listed threatened and endangered species. A number of regionally protected and sensitive species of concern have been documented on or near LANL's lands. These consist of two federally listed endangered species, two federally listed threatened species, and 18 species of concern (species that may be of concern to US Fish and Wildlife Service but do not receive protection under the Endangered Species Act). There are potentially more than 20 state-listed species residing within LANL boundaries.

Wetlands, mostly restricted to the bottoms of these canyons, provide valuable habitat for reptiles, amphibians, and invertebrates and potentially contribute to overall habitat requirements of the Mexican spotted owl, southwestern willow flycatcher, and spotted bat, all of which are federal- or state-listed species, or both.

Wildlife, Sensitive Species, and Habitats

The lands within and around LANL have diverse, unique biological communities with complex ecological relationships. Plant communities range from urban landscaping to grasslands, wetlands, shrublands, woodlands, and mountain forest, which provide habitat for a wealth of animal life. This richness of animal life includes elk and deer, bears, mountain lions, coyotes, rodents, bats, reptiles, amphibians, invertebrates, and a myriad of resident, seasonal, and migratory bird life. In addition, threatened and endangered species of concern and other sensitive species use LANL resources. Because of restricted access to LANL lands and management of contiguous Bandelier National Monument for natural biological systems, much of the region provides a refuge for wildlife.

Wetlands also provide habitat, food, and water for many common species such as deer, elk, small mammals, and many migratory birds and bats.

B.2.4.2 Resource Management Considerations

LANL facilities and operations occur within an ecologically diverse and relatively undisturbed region protected under a myriad of federal and state regulations, policies, and orders. LANL is also surrounded by many different stakeholder communities that expect the site to operate in a compliant and responsible manner. LANL projects and activities must be planned and implemented in a manner that minimizes risk to both institutional activities and the surrounding environs via processes that integrate the mission and biological resources management.

Forest, Range, and Soils

In the last 50 years, the LANL region has sustained five major wildfires: the Water Canyon fire in 1954, the La Mesa fire in 1977, the Dome fire in 1996, the Oso fire in 1998, and the Cerro Grande fire in 2000. In each case, fire occurred during the late-spring, early-summer fire season when fire danger was high or extreme. Weather conditions were hot and dry, fuel moisture content was low, and fuel loads were high. Even after these five fires, overall conditions across the Pajarito Plateau are still conducive to wildfire, and as fuel loads regenerate in the burned areas, the probability of the next serious fire event increases. These conditions are an important consideration in the effort to address the risk of wildfire at LANL and within the region. Soil erosion can have serious consequences to maintenance of biological communities and is also a mechanism for moving contaminants across LANL and off site. Wildfire, construction, and other similar activities at LANL can displace these soils, and runoff from parking lots and buildings can cause erosion. In addition, surface contamination can result from open detonations at the firing sites or from deposition of contaminants released to the atmosphere from building vents and other operations. The Cerro Grande fire dramatically increased the risks associated with soil erosion.

Wildlife, Sensitive Species, and Habitats

Some specific wildlife management considerations that have been identified by LANL biologists, other LANL personnel, and external stakeholders include (1) minimizing vehicle-animal collisions; (2) identifying and protecting key habitats on LANL; (3) maintaining the ability of animals to travel across LANL in the face of increasing development, fencing, and other disturbances; (4) minimizing transmission of zoonotic diseases (such as hantavirus) to humans; (5) minimizing uptake and transport of contaminants by wildlife; (6) evaluating and mitigating impacts of wildlife on other natural

resources; and (7) evaluating and mitigating impacts of the Cerro Grande fire on wildlife species.

NNSA operations and activities at LANL have the potential to impact threatened, endangered, and sensitive species. These species are protected under federal and state laws as well as institutional policies. These laws and policies are designed to avoid or mitigate potential impacts associated with removal and fragmentation of key habitat, disturbance during breeding seasons, and alteration of hunting and foraging areas (Figure B.5). Conversely, these species may impact institutional planning and operations by requiring certain areas to remain undisturbed and restricting the amount of land space available for locating and operating new facilities.

LANL wetlands (Figure B.3) are considered sensitive habitats that provide resources for local and regional wildlife. These wetlands provide habitat and resources for threatened and endangered species, aquatic invertebrates, amphibians and reptiles, and numerous species of local and migratory birds and are also used by other wildlife like large game species as water sources. LANL



wetlands, and the floodplains in which they exist, are protected under federal and state laws. Some of these wetlands are the result of industrial outfalls regulated under the Clean Water Act. To reduce the amount of pollutants released to the environment, some of these outfalls are being eliminated, and the associated wetlands are being reduced or lost. One of the significant considerations associated with managing LANL wetlands is the institutional trade-offs between eliminating outfalls as a