

## 6.0 Cumulative Effects

Cumulative effects on any affected resources as a consequence of the Proposed Action (a Trails Management Program at LANL) are expected to be negligible. Cumulative effects are caused by the aggregate of past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes them. These effects can result from individually minor, but collectively significant, actions taking place over a period of time (40 CFR 1500-1508). The cumulative effects analysis in the LANL SWEIS already documents the regional effect of the Expanded Operations Alternative and provides context for this EA. This section evaluates the cumulative effects of implementing the Proposed Action, the Trails Closure Alternative, and the No Action Alternative with the effects resulting from common issues of other actions that have, are, and will be taken at LANL or by adjacent jurisdictions.

Land use and visual resources are dismissed from cumulative effects consideration because it was determined they would not be affected by the Proposed Action, the Trails Closure Alternative, or the No Action Alternative and therefore could not contribute collectively to ongoing or reasonably foreseeable actions (see Table 2). Eight other resources analyzed in Chapter 4 of this EA would have a minimal contribution to cumulative effects, because neither the Proposed Action, the Trails Closure Alternative, or the No Action Alternative would have long-term direct, indirect, or irreversible effects on environmental restoration, geology and soils, transportation and infrastructure, water quality, health and safety, waste management, air quality, or noise.

Ecological resources, cultural resources, environmental justice, and socioeconomics are the affected resources that are discussed further in this section, because the analysis in Chapter 4 and the scoping for this EA indicated that there could be some minor direct or indirect effects on ecological, cultural, socioeconomic resources, and environmental justice as a consequence of the Proposed Action and the Trails Closure Alternative; and some irreversible effects on cultural resources as a result of the No Action Alternative, as well as some minor direct and indirect effects on environmental justice.

*Cultural Resources.* NNSA and LANL are preparing a Cultural Resources Management Plan in accordance with the Mitigation Action Plan set forth in the SWEIS ROD. The Proposed Action would implement a Trails Management Program with a process to identify cultural resources present along each trail and the trails designated as cultural properties by the State of New Mexico. This would include consultation with the four Accord Pueblos regarding the potential presence of TCPs and other traditionally or culturally sensitive areas as identified by these communities. NNSA would seek concurrence from the SHPO regarding mitigation plans for affected cultural resources and trails. If trail closure or trails use continuance would result in an unavoidable adverse effect to a cultural resource, a data recovery plan would be prepared and the SHPO and appropriate Native American tribes would be consulted before commencing work or identifying the trail for continued use.

*Environmental Justice.* The Proposed Action could partially address issues raised by local Pueblos during the scoping process. A Trails Management Program could result in a slight increase in trespassing and inappropriate activities that currently affect the Pueblos in a disproportionate manner because of the existence of TCPs at LANL and the proximity of Pueblo lands to some LANL trails.

*Ecological Resources.* An Integrated Resources Management Plan is being implemented at LANL to coordinate responsible environmental stewardship at LANL that is consistent with its missions. This management plan will also help LANL management operate the facility without incurring adverse cumulative environmental effects pursuant to the SWEIS ROD. The Proposed Action would have a minimal contribution to adverse cumulative effects on ecological resources. The Proposed Action would enhance LANL stewardship of critical habitat and sensitive species. Some trails could be closed during certain times, and others would be rerouted or repaired in a fashion so as to minimize habitat disruption or damage; other trails may be closed to recreational users or to certain user groups such that habitat use may be enhanced along the trails reach.

*Socioeconomics.* The Proposed Action would seek to strike a balance between the desire to use LANL trails for recreation, the need for LANL to foster environmental stewardship of ecological and cultural resources on lands that are also part of a NERP, and the need to address the concerns of local Pueblos and other adjoining neighbors regarding trails use at LANL.

The activities discussed in the LANL SWEIS and recently approved projects within the boundaries of LANL are considered here for the cumulative effects assessment. As stated in the LANL SWEIS and ROD, ecological and biological resources would not be adversely affected by ongoing and certain expanded operation at LANL (DOE 1999a). The ROD for the *EIS for the Conveyance and Transfer of Certain Land Tracts Administered by the U.S. Department of Energy and Located at Los Alamos National Laboratory, Los Alamos and Santa Fe Counties, New Mexico* (DOE 1999b) concluded that habitat could be fragmented, wildlife migration corridors could be disrupted, and that the disposal of land to the identified parties, particularly where it would be conveyed outside of Federal government control, could result in less-rigorous environmental review and protection processes. However, most of the land to be conveyed would be preserved or used for recreation; only a small portion is planned for development. According to the EA and Finding of No Significant Impact for the *Electrical Power System Upgrades at Los Alamos National Laboratory* (DOE 2000b, c), less than 25 ac (10 ha) of land would be disturbed by that project. The Finding of No Significant Impact for the *Wildfire Hazard Reduction and Forest Health Improvement Program at Los Alamos National Laboratory Environmental Assessment* (DOE 2000d, e), concluded that the Proposed Action (No Burn Alternative) would implement a Wildfire Hazard Reduction and Forest Health Improvement Program at LANL that would not use fire as a treatment measure to treat approximately 30 percent, (10,000 ac or 4,000 ha), of LANL. The Wildfire Hazard Reduction and Forest Health Improvement Program would use mechanical forest thinning and the construction of access roads and fuel breaks as treatment measures. The Wildfire Hazard Reduction and Forest Health Improvement Program would have a long-term beneficial effect on a variety of resources at LANL. Correspondingly, there would also be long-term beneficial contributions to any cumulative effects on resources resulting from actions at LANL or by surrounding land managers.

On July 25, 2000, the Federal government purchased approximately 89,000 ac (35,600 ha) of the Baca Ranch in northern New Mexico, located approximately 6.5 mi (10.5 km) west of LANL. The *Valles Caldera Preservation Act* designated these spectacular lands as the Valles Caldera National Preserve, a unit of the National Forest System. It was established to "...protect and preserve the scientific, scenic, geologic, watershed, fish, wildlife, historic, cultural, and recreational values of the Preserve, and to provide for multiple use and sustained yield of renewable resources within the Preserve," consistent with *Valles Caldera Preservation Act*

(<http://www.vallescaldera.gov/about.php>). The Preserve is administered under the Valles Caldera Trust by a Board of Trustees that is responsible for establishing and enforcing the conditions that apply to its management and use. The Preserve is accessible to the public for limited recreational use under specific restrictions and conditions.

This analysis concludes that there would be only minimal and slight cumulative effects on these resources as a consequence of the aggregate of the Proposed Action and past, present, and reasonably foreseeable future actions. There could be some positive cumulative effects to ecologic and cultural resources as a consequence of the Proposed Action or the Trails Closure Alternative. Both these alternatives would also tend to lessen disproportionate effects of trespassing and inappropriate use upon adjacent Pueblos and therefore foster environmental justice. The Trails Closure Alternative could also have a slightly negative effect on recreation and tourism in Los Alamos County and affect local socioeconomics. The No Action Alternative could pose slightly negative cumulative effects to cultural and ecological resources and to environmental justice. In conclusion, the effects of the Proposed Action, when combined with those effects of other actions defined in the scope of this chapter, would result in negligible cumulative effects.

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