

The Paradox of Federal Energy and Defense Installations in the West

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The Paradox-Most Polluted or Most Pristine?

Most planners working west of the 100th meridian are aware that federal lands make up a large portion of the lands in the western states. In fact, federal lands comprise nearly 49 percent of the area of the 14 states that make up *The Western Planner* family. These lands are usually under the Department of Agriculture (USFS) and the Department of Interior (BLM and NPS), but the Departments of Defense (DOD) and Energy (DOE) are also federal stewards of western lands. These federal military and energy installations play an important role in local and regional western communities and economies. They also play an important role in regional ecologies. It is a paradox that some of these sites have their share of legacy contamination from earlier missions, but they also include some of the most pristine remaining western ecosystems. In some cases, the sites are located near or surrounded by encroaching urbanization, making them particularly valuable lands both for recreation and habitat preservation.

The National Environmental Research Parks

All federal agencies must abide by national environmental laws that require best efforts at maintaining the “productive harmony between man and the environment” envisioned in the preamble to the National Environmental Policy Act nearly 40 years ago. Many of these military and energy sites continue to operate without requirements for multiple uses, recreation, or other public needs. They operate to fulfill specific mission requirements that in fact may preclude uses traditionally permitted on lands administered by the federal resource agencies. These sites may not have experienced grazing, farming, mining, or tourism for decades, effectively preserving their landscapes to support other missions. It may seem ironic, but lands used to develop, store, and test weapon systems also provide habitat for species no longer as welcome elsewhere.

Los Alamos National Laboratory in northern New Mexico is one such example, along with three other DOE sites that have been designated as National Environmental Research Parks since the 1970s. The research parks are outdoor laboratories that provide opportunities for environmental studies on protected lands that act as buffers around Department of Energy facilities. The research parks are used to evaluate the environmental consequences of energy use and development as well as the strategies to mitigate these

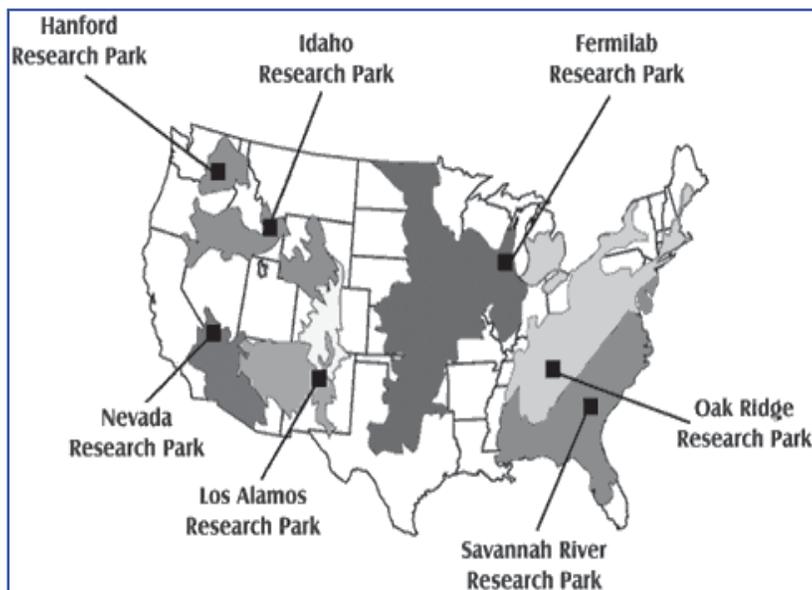


The Los Alamos National Laboratory.

effects. These sites include Hanford in eastern Washington, the Idaho National Engineering Laboratory, and the Nevada Test Site only a little more than an hour's drive from Las Vegas. These places are habitat havens where threatened and endangered species still endure under professional and dedicated site stewardship regarded as integral to site operations. Other DOE and DOD facilities, such as Denver's former Rocky Mountain Arsenal and the Rocky Flats Plant, preserve landscapes no longer found in that metro area. Planners and land managers at these sites are responsible for ensuring these lands continue to protect resources and contribute to local western economies.

Los Alamos National Laboratory

The natural setting of the Los Alamos area is panoramic and scenic. It is a contrast of contradictions where nondescript buildings that cradled the birthplace of the atomic age sit astride ancient Anasazi ruins. The mountain landscape, unusual geology, varied plant communities,



burned over areas, and archaeological heritage of the area create a diverse visual environment. The topography is rugged. Mesa tops are cut by deep canyons, creating sharp angles in the land form. In some cases, slopes are nearly vertical. Often, little vegetation grows on these steep slopes, exposing the volcanic geology, with contrasting horizontal strata varying from bright reddish orange to almost white.

There are five vegetation zones at Los Alamos. In general these zones result from changes in elevation, temperature, and moisture along the 5,000-foot elevation gradient from the Rio Grande to the mountainous western edge of the site. The five zones include Juniper, Juniper Woodlands, Grasslands, Ponderosa Pine Forests, and Mixed Conifer Forests. This diversity in vegetative communities results in the presence of over 900 species of vascular plants. There is a comparable diversity in regional wildlife with 57 species of mammals, 200 species of birds, 28 species of reptiles, nine species of amphibians, and over 1,200 species of arthropods so far identified.

Federally listed wildlife includes two endangered species (willow flycatcher and Mexican spotted owl), two threatened species, one candidate, and eight species of concern. In 1999, one-thousand acres of canyon lands within Los Alamos were preserved as the White Rock Canyon Reserve now managed by the National Park Service. The reserve exists to enhance and ensure protection of the canyon's landscape, habitat, rare wildlife, and irreplaceable cultural resources.

The Hanford Site

The Hanford Site was established in central Washington State in the early 1940s as part of the Manhattan Project. Plutonium for nuclear weapons was created and refined on the site for 50 years. Access to the production facilities and a large buffer zone were strictly controlled for both security and public safety. It would be understating the facts to say anything except that parts of Hanford have experienced severe environmental problems; some of these threaten the region beyond its boundaries because of proximity to the Columbia River.

When the site was closed by the DOE, 56 million gallons of radioactive waste were stored in 177 underground tanks,



Elk in the Grass at Idaho National Engineering Laboratory.

68 of which leaked and 2,300 tons of spent nuclear fuel sitting in (and sometimes leaking from) two pools only a few hundred feet from the Columbia River; also 120-square miles of contaminated ground water and 25 tons of plutonium to be disposed of and kept under constant armed guard. This is what remains at Hanford after over seven years of the most intensive environmental cleanup project in history.

Hanford's cleanup phase will probably continue until at least 2030, when many of DOE's long-term environmental goals will have been met. However, the 570-square-mile desert site contains abundant native wildlife and remains surprisingly undisturbed by human activity. Hanford includes the Fitzner/Eberhardt Arid Lands Ecology Reserve, which is the only remaining sizable remnant (120-square miles) of Washington shrub-steppe landscape still in pristine condition.

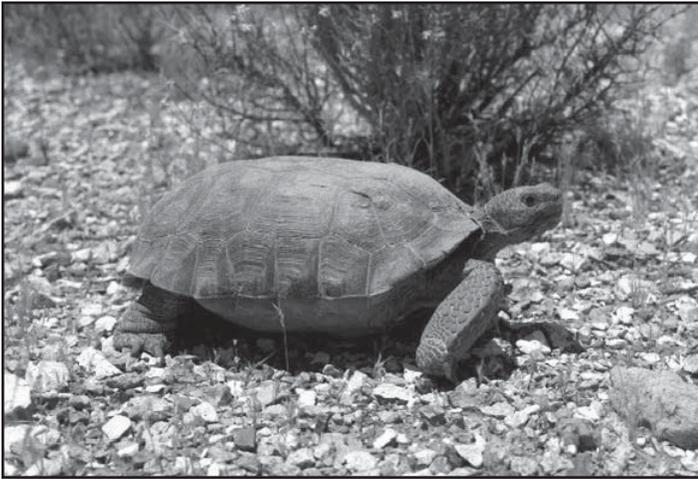
The Idaho National Laboratory

The Idaho National Laboratory is located in southeastern Idaho and covers 890-square miles of sagebrush steppe on the Upper Snake River Plain. Established in 1949 as the National Reactor Testing Station with the objective of furthering the development of nuclear reactors, today it is a leading center for nuclear safety research, defense programs, nuclear waste technology, and advanced energy concepts. Since 1975 the mostly pristine lands within its borders have been protected and preserved as an ecological field laboratory where scientists from government agencies, universities, and private foundations may set up long-term experiments which answer questions about man's impact on the natural environment. The laboratory proper is home to some 400 species of vascular plants. Compared with areas that have a long history of livestock grazing, there is a rich diversity of native forbs (broad-leaved herb other than a grass, especially one growing in a field, prairie, or meadow). Eighty-five percent of the species are natives, and three-fourths of those are forbs. Five fish, one amphibian, nine reptile, 159 bird and 37 mammal species have been documented to occur.



Hanford Site in Bloom – Photo by Jim Evans (Biodiversity of the Hanford Site Final Report 2002-2003).

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Desert Tortoise at the Nevada Test Site.

The Nevada Test Site

The Nevada Test Site and its surrounding restricted access areas are larger than the state of Rhode Island. This unpopulated area comprises some 5,470-square miles located only 65 miles north of Las Vegas, one of the fastest growing urban areas in the United States. It is amazing to think that a place used for so many years to detonate nuclear bombs is host to such a diversity of life: approximately 1,500 animal species, including 924 insect species (but no giant radiation mutated cockroaches!), and 750 different plant species. Most of the site was never used for nuclear testing and is fairly pristine. Elevations range from 2,688 feet above sea level to 7,659 feet above sea level representing both the Mojave and Great Basin desert ecosystems. The Desert Tortoise, an endangered species, makes its home undisturbed here, as does a herd of wild horses. Many of the plant species found here are still valued by Native Americans for medicinal, ceremonial, and everyday uses. It is indeed a landscape right out of the old west, even as the new west encroaches upon its restricted boundaries.

Conclusion—What Western Planners Need to Know and Do

The future of DOE and DOD sites in the west will be one caught between the need to preserve lands for continuing missions and to transfer lands no longer needed in compliance with continuing federal efforts to reduce inventories and expenditures. Congress mandated that approximately half the lands now held by the DOD need to be disposed through further base realignment and closures. Lands remaining under federal stewardship or being disposed will be subject to continuing environmental clean up. This work has two benefits: one is that problems are remediated and the environment improved; the other is that a good deal of money enters the local economy to accomplish this goal.

Lands that remain under the auspices of the DOE and DOD will enjoy the incidental but effective environmental

protections afforded by these agencies as they comply with all national laws. Lands that are transferred to other federal resource agencies with different missions will also enjoy environmental protections, but they will no longer be islands of restricted human intervention. In some cases, such as Lowry Air Force Base near Denver, these federal lands may be the places where new master-planned communities will provide homes and locations for inevitable western growth. Western planners should work to reuse these former federal lands through master planning in order to direct and shape growth that provides choices while minimizing impacts. This may preclude some growth and expansion beyond the urban fringe and reinvigorate western cities. It may also help to preserve some of the places where the new West is bumping up against what we'd like to preserve of the old western landscapes and ecosystems.

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Conclusion

There is little doubt that if current trends continue, this California phenomenon will spread to other western states, if for no other reason than California baby-boomers cashing in on their investments in their housing at retirement and migrating to other western states. Selling a modest, paid-off, million dollar Goleta ranch house allows them to buy a half million dollar "mansion" in any of the other western states and still have a nice retirement nest egg. Indeed this was the "plan" of many of my colleagues and friends my age in California. Since the baby-boomers have just begun to reach retirement age, we have not seen anything yet.

Pat Dugan has been both a city planning director and a city finance director. During the last thirty years, he has held various financial and planning positions in cities, counties, and regional agencies in three states. He has shared his views on public finance and planning with planners through these regular articles in The Western Planner since 1995. He is now a private consultant in Everett, Washington, and can be reached at <dugan.consulting@verizon.net>. 🐱