

OFF-SITE Excursions

Adventures near and dear to the Idaho National Laboratory

BY SHELLY NORMAN

Water is the lifeblood of the Snake River Plain—above and below the surface. Tribes, explorers, pioneers and homesteaders have all depended on it. The Big Lost River meanders across the desert and feeds into the underground aquifer.

PHOTOS COURTESY INL

History, archaeology and the world's first electricity-generating nuclear power plant . . . there's plenty to see on a daytrip through the Arco Desert

It's a beautiful summer day and the road is calling your name. In just a few hours from pretty much anywhere in southeast Idaho, you can relive history at Idaho National Laboratory's Experimental Breeder Reactor I—with a choice of stops along the way.

This story starts a long time ago.

For the past 15 million years, give or take a few million, Earth's crust has slowly been creeping across the Yellowstone hot spot at about the same rate your fingernails grow. That process carved out the Snake River Plain and the enormous aquifer underneath it.

But, in the interest of time, let's fast-forward.

The land known by locals as "the Site" is owned by the U.S. Department of Energy. In operation since 1949, INL supports DOE's missions in nuclear and energy research, applied science, and national security.

The Site has a rich history. People have

been living on that Snake River Plain—or trying to—for at least 13,000 years. These are their stories.

Computer models tell us there are about 70,000 archaeological sites on the Site's desert land. These include places where Native Americans lived and traveled; where pioneers trekked the Oregon Trail; and where numerous homesteaders tried to settle—but ultimately failed.

Because this land is protected, you cannot get up close and personal with the artifacts, but regardless of the direction you travel, there still is plenty to see.

From Pocatello

Shoshone-Bannock Tribal Museum: Fort Hall was a stop on the Oregon Trail where fur trappers, Native Americans and traders crossed paths. The tribal museum, Exit 80 on I-15, lets you explore traditional dress, crafts and lifestyles.

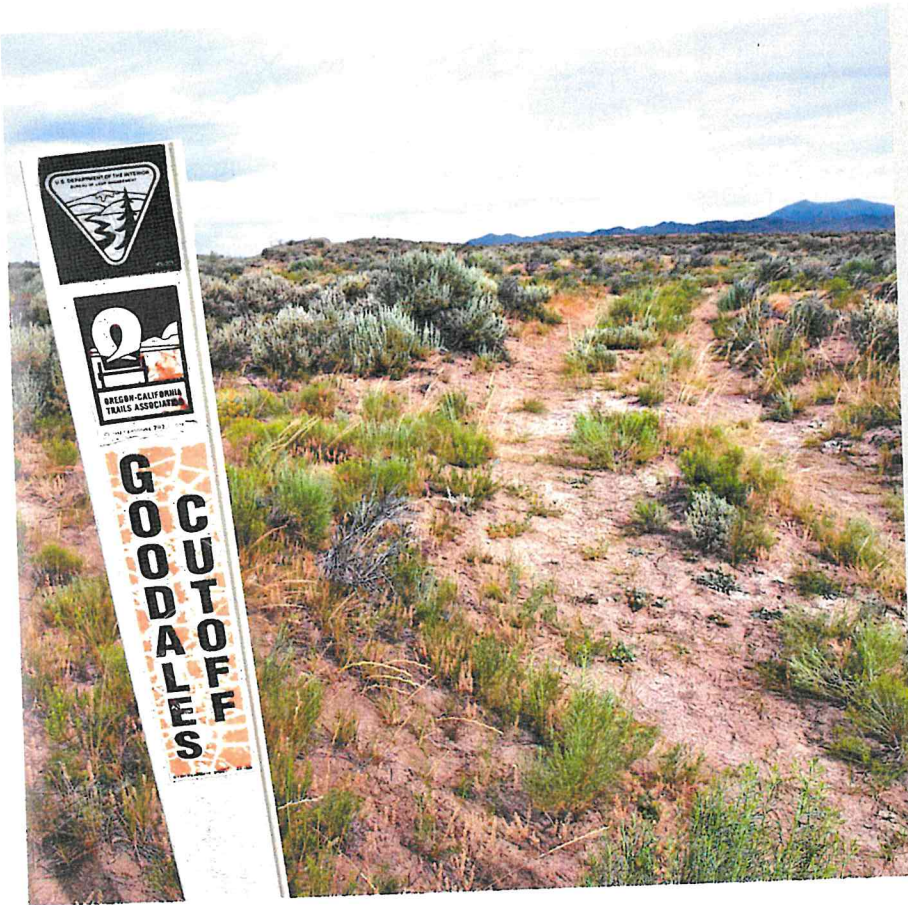
Atomic City: If you take U.S. 26 from Blackfoot to EBR-I, you will pass what used

to be known as Midway, Idaho. In 1950, the city changed its name to Atomic City in hopes of becoming an anchor for atomic workers at the National Reactor Testing Station—forerunner to INL. The idea didn't really take off and population at the 2010 census was 29.

From Craters of the Moon

Craters of the Moon: "Weird" is a word commonly used to describe Craters of the Moon. This National Monument and Preserve, located 18 miles southwest of Arco on Highway 20/26/93, is almost the size of Rhode Island and can be seen clearly from space. The lava flows, tubes and caves are great for hiking and learning about geology. Even Apollo 14's crew came here in 1969 to prep for their mission.

Idaho Science Center: In 1955, the United States was eager to demonstrate peaceful uses of splitting the atom and Arco became the first city in the world to be lit by atomic power. It is also home to the Idaho



Thousands of pioneers took Goodale's Cutoff across the Arco Desert on their Oregon Trail trek. Ruts from their wagons still mark the trail.

Science Center – a quaint museum with atomic memorabilia – and a submarine sail from the decommissioned USS Hawkbill.

Big Lost River Rest Area: In addition to restroom facilities and picnic areas, the Big Lost River Rest Area has several interpretive signs about the sagebrush steppe, irrigation systems, nuclear reactors, volcanoes and more. (Mile marker 265).

From Idaho Falls

Elephant Hunters: A road sign titled Elephant Hunters highlights the discovery of a 12,000-year-old mammoth kill site in a lava tube cave west of Idaho Falls. Many ice-age mammals roamed this part of the Snake River Plain, which also included giant bison, a horse species and the Atomic Camel, which is housed at the Idaho Museum of Natural History. A few yards south of the road sign is the opening to 17-Mile Cave—so named because it is 17 miles west of Idaho Falls. This cavernous, well-used lava tube is accessible without special gear. A flashlight and jacket are advised, though. (Mile marker 291)

Hell's Half Acre: Five miles down the road is the trailhead for Hell's Half Acre—a 4,000-year-old lava flow with two marked hiking trails. The 4-mile Vent Trail takes five to six hours, or the .9-mile Loop Trail can be done in about 30 minutes. Both

trails can be difficult with uneven terrain, and have no shade or water. Early fur traders in the region referred to any rough patch of land as "hell's half acre"—hence the name—although this flow covers closer to 70,000 acres. (Mile marker 286)

Lake Terreton and other landmarks: As you drop over the hill, you can see most of the Site's 890 square miles. It is ringed by the often snow-capped mountains. Notable landmarks from this vantage point are (to the right) Experimental Breeder Reactor-II with its iconic silver dome, and 20 miles straight ahead is the Advanced Test Reactor. During the last gasp of the ice age, ancient Lake Terreton covered 230,000 acres of what is now mostly agricultural land west of Idaho Falls. Preserved portions of the lakeshore on the desert Site are revealing significant clues about the lives and ways of the earliest Native Americans to occupy southeastern Idaho. (Mile marker 279)

INL: You now are crossing INL property. After World War II, nuclear scientists came to Idaho. Their goal was to build 10 reactors in 15 years—and learn everything there was to know about nuclear energy. That was 1949. Since that time, 52 reactors have been built at INL and four operate today. INL is the lead nuclear lab in the country. You can arrange for a tour of INL by emailing

tours@INL.gov. (Mile marker 277)

The Buttes: Road signs tell about the geology of three large buttes contrasted against the almost-flat terrain. The Eastern Butte and Middle Butte are off-limits to the public. Big Southern Butte was a very important source of obsidian for the Native Americans that lived in this part of the Snake River Plain. You can drive, or hike if you're ambitious, to the top of the Big Southern Butte. The road to the summit starts just outside of Atomic City, a few miles south on Highway 26. (Mile marker 273)

Goodale's Cutoff: In the 1860s, thousands of Oregon Trail pioneers opted for Goodale's Cutoff on their westward migration. The Big Southern Butte landmark guided their route and some intact wagon ruts are still distinguishable. (Mile marker 272)

Concrete concussion wall: On your right, you can see a power substation. Directly south is a concrete concussion wall left from the 1940s when World War II battle guns from the Pacific were rebored in Pocatello, then test-fired at the Naval Proving Ground. Ammunition for these guns was 16 inches in diameter and 5 feet long. During the Vietnam War, the Big Southern Butte was used for target practice. (Mile marker 270)



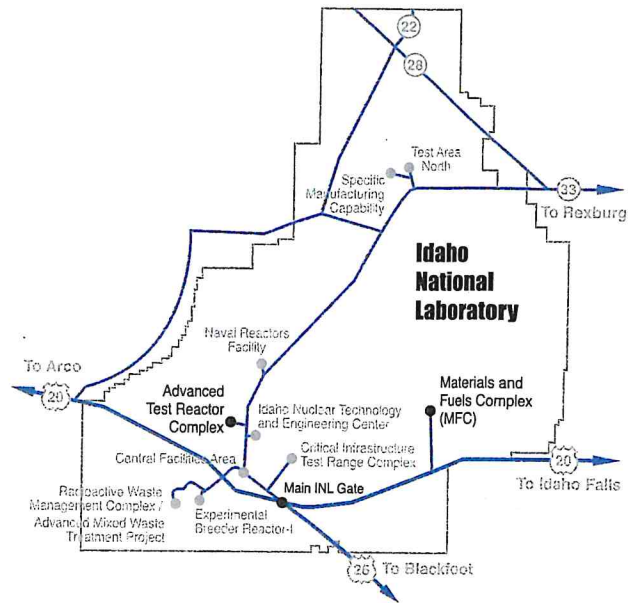
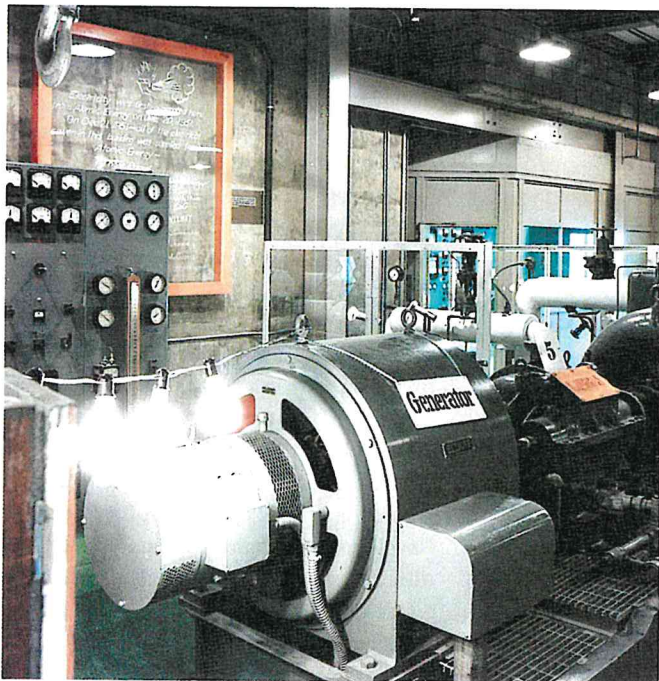
Experimental Breeder Reactor-I

At mile marker 269, turn south and follow the signs to EBR-I to see where scientists first created usable amounts of electricity by splitting the atom. They also proved that breeder reactors could create more fuel than they consumed. Now decommissioned and designated a National Historic Landmark in 1965, EBR-I produced sufficient power to illuminate four 200-watt lightbulbs on Dec. 20, 1951.

The museum is open seven days a week from 9 a.m. to 5 p.m. between Memorial Day weekend and Labor Day. And it's free. In the parking lot, you can also see two aircraft nuclear propulsion prototypes designed for a nuclear airplane. Spend an hour or a day.

It's easy to drive through the desert and miss its stories. But if you listen, it will tell you of survival and disappointments, successes and discoveries.

About the author: Shelly Norman is a tour guide at Idaho National Laboratory.



Idaho National Laboratory is one of seven National Environmental Research Parks (NERPs) in the United States. A NERP is an outdoor laboratory that provides opportunities for environmental studies on protected lands that act as buffers around Department of Energy facilities. Within the Site's boundary, there are dozens of preserved historical and archeological sites. While these places are not open to the public, it's still fun to learn about:

Moonshiner's Cave is the home of the largest moonshine raid in Idaho history. The still, along with some old bed springs and other relics, remain in the cave.

Despite its lack of surface water, about 40,000 sailors have come to the Idaho desert to learn how to operate a nuclear reactor in the Nautilus prototype. Hence, it is the birthplace of the nuclear Navy.

Italian bread ovens were built by railroad construction workers and left behind with remnants of their camps as they built the Oregon Short Line Railroad to Arco.

In anticipation of an irrigation project in the early 1900s, homesteaders purchased entries along a large canal and some constructed ditches to improve the land. Upstream projects took all the water and about 600 homesteaders later abandoned their contracts.

During WWII, pilots used this landscape for practice runs. One B-24 bomber crashed in 1944, killing all seven crew members. This video <http://preservation50.org/mapp/> (click on the state of Idaho) tells how a class ring with two initials gave a daughter a chance to say goodbye to her father.

Obsidian is a glasslike rock that comes from volcanic activity. Each eruption creates its own geochemical signature that identifies when and where the rock was formed. Ancient tools made from Snake River Plain obsidian have been found as far away as Texas and Missouri, giving researchers insight to early migration patterns.

One cave—a bison jump—was used to chase the bison to their death. Under a layer of bison bones is the rubble from the collapsed cave ceiling. Under that is a layer of ash from the volcano that formed Crater Lake in Oregon nearly 8,000 years ago. Under that are the remains of at least two woolly mammoths.