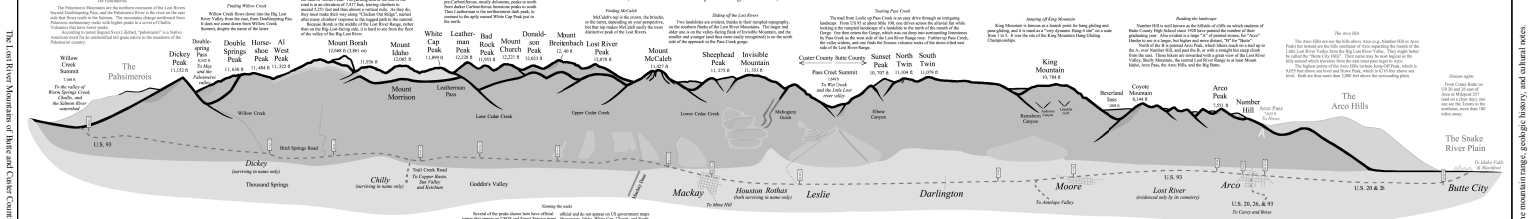
The Lost River Mountains

is seen from the west, and thus from the valley of the Big Lost River, in Custer and Butte Counties of Idaho

Northwest

Southeast



The Pahsimerois

The Pahsimerois Mountains are the northern extremes of the Lost River Range, Leatherman Peak, and the Pahsimerois River in the river on the east side that flows north to the Salmon. The mountains change northward from Paleozoic sedimentary rocks to Precambrian gneiss to a cover of Challis Volcanics that have tilted gneiss.

According to noted Bigfoot Scott Lykins (Lykins), "pahsimerois" is a Native American word for an unidentified tall green native to the meadows of the Pahsimerois country.

Finding Willow Creek

Willow Creek flows down into the Big Lost River Valley from the east, from Deadlingwalls Pass. Willow Creek Summit is a 1,188-foot pass, between the source of the Lost River and the Salmon River.

Starting in Borah

From US 93, Birch Springs Road provides access to the base of Borah Peak. The parking area at the end of the road is at an elevation of 7,417 feet, leaving climbers to hike about 4,000 feet to the summit. Because of the icy, they must make their way along "Chicken Out Ridge," which after many climbers' exposure to the rugged path to the summit, is known as "Chicken Out Ridge." Climbers can also start from the Big Lost Dam during ebb, it is hard to see from the West of the valley of the Big Lost River.

Finding Leatherman

A fault in Leatherman Pass separates lighter pre-Carboniferous, mostly dolomite, peaks to north from darker Carboniferous limestone peaks to south. Thus Leatherman is the northernmost dark peak, so extension to the aptly named White Cap Peak just to the south.

Finding McCaleb

McCaleb's top is the crown, the tricuspid, or the tumulus, of the Lost River Range. From a distance perspective, but the rugged ridge line NE-SW is the north-south fault line. Resistance peak of the Lost River.

Hiking off the Lost River

Two landslides are evident, thanks to their tangled topography, the southern Double Lost of the Lost River Range, and the north of the Range. One does stones the Range, which was cut deep into surrounding Sinamon. The other is the Lost River Range, which is the northernmost of the range. The valley widens, and cow flesh the Frazier volcanic rocks of the dewed-cloud east side of the Lost River Range.

Jumping off King Mountain

King Mountain is a dome, not a ridge, and is known for being gilding and pine-gilding, and it is known as a "mountain island." Rising 4,000' on a side from 5 to 5. It was the site of the King Mountain Hang-Gliding Championships.

Reading the landscape

Number Hill is well known for its 1,000-foot-high basaltic cliffs on which students of Butte County High School have painted their initials in the manner of their graduating year. Also evident is a large "M" of painted stones, for "Arco" (Spanish for ore or a target, but higher and more distant, "M" for "Mount").

North of the B is painted Arco Peak, which lifters much ore a bit up to the top of Number Hill. Arco Peak is a 5,691-foot-high peak that rises from the east. These hikers are intended with a great view of the Lost River Valley, Mickly Mountain, the central Lost River Range to at least Mount Idaho, Arco Pass, the Arco Hills, and the Big Butte.

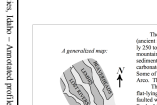
The Arco Hills

The Arco Hills are one the hills above Arco (e.g., Number Hill or Arco Peak) but instead are the hills southeast of Arco separating the mouth of the Big Lost River Valley from the valley of the Little Lost River, which is called the "Birch City Hills". Their name may be not logical or the hills entered which travelers from the east must pass eager to Arco.

Dimmit Ridge

Dimmit Ridge. Dimmit Ridge is a 5,000-foot ridge that rises from US 20 and 26 east of Arco and Number Hill, and can see the Tetons to the east, 100 miles away.

A generalized map:



Very generalized cross-sections (vertical profiles) through time:

Three stages of time:

The Lost River Mountains consist largely of sedimentary rocks (ancient sediments solidified to form rock) of Paleozoic age (roughly 250 to 500 million years ago). The layered appearance of the mountainous results from the origin of these rocks as layers of sediment. Many of these rocks are limestones made of calcium carbonate precipitated from the seawater of the Paleozoic oceans. Some of these limestones are rich in fossils, as is the slopes above Arco. The fossils include corals, brachiopods, and crinoids. The Paleozoic sediments have been folded and faulted and are flat-lying layers across a large region. These layers were folded and faulted when the region was compressed to give the "Ancestral Rocky Mountains" in two separate events (one hundred to three hundred million years ago. The folding is evident both in the Lost River Mountains on the east side of the Big Lost River Valley and on the flanks of Appendicitis Hill on the west side of the valley near Moore.

Erosion later eliminated much of the topography of those ancestral mountains to give a more subdued landscape onto which the Challis Volcanics were cropped about fifty million years ago, in Eocene time. The eruption of these volcanic rocks is attributed to the plate tectonic striking of the Idaho Plate of Pacific northwest beneath the western margin of North America. The Eocene age of the Challis Volcanics is evident in the Lost River Range, the volcanic rocks of the Snake River Plain and Craters of the Moon, and they are mostly andesites and dacites (volcanic rocks richer in calcium and aluminum) than basalts (volcanic rocks richer in magnesium and iron) to the south.

The Challis Volcanics mantle much of the Pioneer Mountains west of the Big Lost River Valley. Sheep Mountain, a brown peak west of Darlington and on the north side of Antelope Creek, is a good example of the Challis Volcanics that is visible from the valley. Related volcanic rocks can also been in the upper reaches of Pass Creek and Arco Pass in the Lost River Mountains.

The Lost River Mountains, like the Lemhi and Beaverhead and Tendoy ranges to the east, are young mountain ranges formed in the last few million years from those older folded and faulted rocks and from volcanic rocks. The mountains are part of a northwest-trending north-south-running mountain ranges of the Basin and Ranges region, which extends from eastern California across Nevada to northeastern Utah (see map at left). They formed as the region was stretched or extended, in contrast to in previous compression. Each range is a block of rock that has tilted as it slid down faults (i.e. the western Basin and Range, dip to the west (as shown in the sketch below). The eastward dip of layers in the hills above Arco is a good example of the result of the tilting of the Lost River Range, the west side up and the east side down.

The sketch below also illustrates why the Lost River Mountains are so much steeper on their western sides than on their eastern sides. The western sides are the scarpes of the mountain building faults, as subsequently modified by erosion. The eastern sides are the dip slopes of the mountains of the ancient pre-Basin landscape, and there is no mechanism to maintain their steepness against the action of erosion.

The Bull on the west side of the Lost River Range, which is known, not surprisingly, as the Lost River Fault. More technically, it is divided from north to south into the Challis, Warm Springs, Thousand Springs, Mackay, Pass Creek, and Arco fault segments, which fanciest somewhat independently. The more northerly segmentsfaults have active in the last few thousands of years (and very recently in the Thousand Springs segment below Borah Peak), whereas the Pass Creek and Arco segments have been inactive for about 30,000 years. The Lost River fault has in general been more active in the past two or thousand of years than the Lemhi and Beaverhead Faults, furthering the generalization that higher and steeper mountains are more recently uplifted than lower ones.

Between the mountain ranges, sediments fill the valleys, giving flat valley floors like that of the Big Lost River Valley. The sediments consist mostly of gravel and sand washed down from surrounding mountains and deposited by the rivers.

Gentle slopes at the base of the Lost Rivers are alluvial fans, half-cones of sediment transported off the mountains by streams but left at the mouths of canyons where those streams lose energy after leaving the steep canyons. Most of these slopes are covered by sediment deposited during the Quaternary (the last two million years), but older relict deposits survive on five higher and rougher surfaces north of Mackay.

The north-northwest trend of the Lost Rivers is the same as the orientation of volcanic rifts in the northern Snake River Plain. It is also the same as the orientation of the Great Rift, the line of cones and gulch cut into the Snake River Plain southeast of Arco, where the river seems to have followed fractures in the basalt. Thus, despite some differences in topography and kind of rock, both the northwest to the north and plain to the south seem to have been influenced by the same pattern of extension over the last few million years.

Today:

Three stages of time:

Geologic History of the Lost River Range

The Big Lost River

There are two Lost Rivers, the Big Lost River on the west side of the Lost River Range and the Little Lost River on the east side, between the Lost River Range and the Lemhi Range. Both have their names because, in their natural condition, they flowed southeastward into the Snake River Plain and then sank into the Snake River Aquifer. The Snake River Plain and were "Lost" as river water became groundwater. The resulting groundwater is believed to discharge into the Snake River canyon near Hagerman, most notably at Thousand Springs (not to be confused with the Thousand Springs area at the north end of the Lost River Valley).

The Big Lost River was advertised as a fisherman's paradise. Today, much of the water of the Big Lost River is diverted for irrigation, and the river is typically reduced to a trickle in the valley's lower half. Prior to the Mackay Dam and Mackay Reservoir, Even upstream, the Big Lost River has been heavily modified, with a dam above Mackay operated by the Corporation of the Lost Land and Mt. McCaleb.

The headwaters of the Big Lost River are in Copper Basin, west of the White Knob Mountains, and in the Boulder Mountains. The East Fork emerges from the former and the North Fork from the latter, and they merge to flow northward through the valley opposite Bonds Peak and through which Trail Creek Road passes, and then southeast in the mainline Big Lost River Valley. The river is joined in that upper part of the valley by waters from Thousand Springs and the Springs also below Willow Creek Summit. Thus at least some of the Big Lost River water makes a long trip, both above and below ground, from one area named Thousand Springs, at the north end of the valley, to the Snake River Plain, where another area likewise named Thousand Springs along the Snake River Hagerman Valley.

The Mt. Borah Earthquake

Mount Borah was the site of a 1983 earthquake with a magnitude of 6.9 on the Richter Scale. It was the largest earthquake ever measured in Idaho, and the scary from the earthquake remains visible on the flanks of Mt. Borah. One result of the earthquake was that the elevation of the summit rose by several feet. The earthquake caused two deaths in Challis, forty miles to the north, and observers in Lost Horse Valley to the south reported seeing 15-foot-high waves in the Salmon running down the valley. The earthquake was felt in ten states and provinces from Nevada to Saskatchewan.

The earthquake was the result of motion on one of the series of fault segments in the Lost River Fault at the western foot of the Lost River Mountains. Study of the aftershocks indicated that the fault dips southwest and extends downward no miles (16 km).

Idaho's Highest Peaks

Idaho's twenty-two highest peaks

Peak	Range	Elevation (feet)
Mount Borah	Lost Rivers	12,668
Leatherman Peak	Lost Rivers	12,228
Mount Church	Lost Rivers	12,221
Mount Idaho	Lost Rivers	12,065
Mt. Breitenbach	Lost Rivers	12,140
Donald-son Peak	Lost Rivers	12,023
Mount Jason	Lost Rivers	12,065
Leatherman Peak	Lost Rivers	12,228
Hyndman Peak	Pioneers	12,009
Mount Idaho	Lost Rivers	12,065
No Regret Peak	Lost Rivers	12,002
Peak 11867	Lost Rivers	11,867
Bad Rock Peak	Lost Rivers	11,953
Leatherman Peak	Lost Rivers	11,953
Far Away Mountain	Lost Rivers	11,937
Goat Mountain	Pioneers	11,903
Peak 11809	Lost Rivers	11,809
White Cap Peak	Lost Rivers	11,899
Peak 11807	Lost Rivers	11,807
Standpoint Peak	Pioneers	11,805
Peak 11805	Lost Rivers	11,805
Mount Corrington	Lost Rivers	11,857

Source: www.camatpost.org

Climate, vegetation, and cities

The Big Lost River Valley enjoys a high mountain climate, with an average between 10-25 inches of precipitation (and as much as 9.77 inches at Mackay). The dry conditions lead to large temperature changes during any given day and across the year. For example, in Arco the all-time low temperature is −45°F, and the all-time high is 102°F.

The dry climate means that the native vegetation of the floor of Big Lost River Valley is that of a desert, and it is dominated by rabbitbrush and sagebrush. In the past, cottonwood (mean a sign of water in a dry region) lined the banks of the Big Lost River, but cottonwood was cut for irrigation and resultant drainage of the river led to the death of most of those trees in the 1900s.

The natural vegetation of course changes as one moves upward from the dry valley floor to wetter uplands, and thus eventually from sagebrush to a variety of trees become common upslope. The result is that the Lost River Mountains have a much lower tree line below which trees are not present because of the dry climate and in upper levels where precipitation exceeds 10-25 inches of precipitation and trees are present because of cold conditions in winter.

As in many dry regions of the Northern Hemisphere, trees are more common on north-facing slopes than south-facing slopes in the Lost River Range, because south-facing slopes receive more direct sunlight, are thus hotter and drier, and thus have less soil moisture to support vegetation.

Another result of the dry climate in this region is the development of irrigation and the resultant dependence on irrigation and resultant drainage of the river led to the death of most of those trees in the 1900s.

The natural vegetation of course changes as one moves upward from the dry valley floor to wetter uplands, and thus eventually from sagebrush to a variety of trees become common upslope. The result is that the Lost River Mountains have a much lower tree line below which trees are not present because of the dry climate and in upper levels where precipitation exceeds 10-25 inches of precipitation and trees are present because of cold conditions in winter.

Mackay and its mines

The town of Mackay ("MACK-ee") was founded in 1901. It was the terminus of the Oregon Short Line's new line up the Big Lost River Valley, and it replaced the previous town of Houston just to the south. The town was named for a man that of mining tycoon John Mackay, one of the Silver Kings who made his fortune while Knob Mountains above Mackay to the west.

The mines exploited copper-bearing skarns, which are limestones altered by the intrusion of magma that formed adjacent to the Mackay Granodiorite. Mining boffered the scarcity of metal-bearing fluids from the magma, so that the metals formed minerals in the skarns. The resulting ores were mined to yield zinc, lead, copper, and silver, as well as lesser amounts of lead, zinc, silver, and gold.

Ores had been discovered in the Alder Creek mining district above Mackay in 1879. By the 1890s there were several mines, of which the most productive was the Empire Mine. Wayne Darlington, who was a prominent town in the valley is named, managed the mine, and he persuaded John Mackay to fund an expansion of the operation, which led to the Mackay Dam and Mackay Reservoir. However, in 1902 Darlington lost his job in a labor dispute and Mackay died, and management of the mines passed over the next four years. Eventually, efforts to smelt ore locally failed and most of the ore was instead shipped by rail to Utah for smelting, and by the next four decades the mines were inactive or whatever extent metal prices allowed.

Mining activity resumed in the late 1940s, but Mackay's mining and smelting ceased for good in the years of Miss Hill, which features some photographs of the mines. Today the town draws on its proximity to Idaho's highest peaks, and thus "Mackay, in Idaho", and it is an access point for recreation in the surrounding mountains.

The wes. side of the Big Lost River Valley

The west side of the Big Lost River Valley does not have the same dramatic relief as the east side, but there are interesting features. Appendicitis Hill, which reaches an elevation of 7,000 feet, extends out to U.S. Highway 93 at Mile 93 and displays Ordovician limestones. Just north of Appendicitis Hill is the road into the Warm Springs Valley, which leaves the Pioneer Mountains near and parallel to the modern Lost River Valley. The northeastward trend of the upper Lost River Valley is evident in Pass Creek and Arco, and in conjunction with the trend of Thousand Springs, suggests that the Lost River Valley extends northward in that of the modern Beaverhead Fault and Lemhi Fault, which are responsible for the steep eastern slope of the Lemhi Range in Montana. Likewise, the northeastward trend of Arco Pass, Arco, and the coincidence with Pass Creek, suggest a north-eastward drainage system that existed before the modern pattern of mountains and valleys developed.

Pathways of ancient rivers

The modern southeastward drainages of the Big Lost River, Little Lost River, and Birch Creek are dictated by the modern mountain ranges formed along the modern NW-SE faults. One of those modern ranges, the Beaverheads, is the modern continental divide. However, before the development of the modern NW-SE mountain ranges and valleys, the continental divide is believed to have been in the Pioneer Mountains near and parallel to the modern Lost River Valley. The northeastward trend of the upper Lost River Valley, Pass Creek and Arco Pass, and its coincidence with the trend of Thousand Springs, suggests that the Lost River Valley extends northward in that of the modern Beaverhead Fault and Lemhi Fault, which are responsible for the steep eastern slope of the Lemhi Range in Montana. Likewise, the northeastward trend of Arco Pass, Arco, and the coincidence with Pass Creek, suggest a north-eastward drainage system that existed before the modern pattern of mountains and valleys developed.

Arco, Number Hill, and a submarine

The name "Arco" appears in the Lost River valley on maps and in the news in early as 1884. The present location of Arco was occupied in 1880 when the Oregon Short Line Railroad built a spur from Blackfoot across the Snake River Plain and up the Lost River Valley to serve the developing mines of Mackay. The newly located town of Arco quickly took the place of the original Arco, which was two miles south, which itself had moved through the Lost River Valley in 1879. Still earlier, on their way from Blackfoot to Mackay and back provided passenger service to Arco, and Tendoy service continued after that.

According to some, the name Arco was applied for the name "Junction" but was turned down by the U.S. Post Office. "Junction" would have been a good name for Arco, because it was at the place the economy began on its strangest position at the junction of U.S. Highways 26, 20, and 93. Thus all traffic on the north side of the Snake River Plain passes through Arco, as does all traffic coming south down the Big Lost River Valley from Salmon and Challis.

Arco is more famous for becoming the first community in by nuclear power in 1955, when electricity was transmitted to the town from the National Reactor Testing Station, which is now part of the Idaho National Laboratory. The power, the people of Oberaiai, in Russia would reply that their town was the first community powered by the Arctic's nuclear heritage today is the Arctic Nuclear Icebreaker Museum in Murmansk, Russia. The Scientific Center hosts the annual "Ice Cities" Arctic Nuclear Icebreakers, and the Arctic Nuclear cities from which the boats in the past were equipped.

Arco is also notable as the town above which Number Hill is a clear day and look at the Tetons, which are visible from the Arco Hills. Number Hill is a clear day and look at the Tetons, which are visible from the Arco Hills.

The Snake River Plain

The Snake River Plain south of Arco is a vast lava field covered by basalt, a volcanic rock, that has been erupted as flows of lava over the last million years. The most recent examples of these lava flows, only a few thousand years old, can be seen at Craters of the Moon National Monument. 18 miles west of Arco.

The Snake River Plain includes the Snake River Plain south of Arco, the Craters of the Moon, the people of Oberaiai, in Russia would reply that their town was the first community powered by the Arctic's nuclear heritage today is the Arctic Nuclear Icebreaker Museum in Murmansk, Russia. The Scientific Center hosts the annual "Ice Cities" Arctic Nuclear Icebreakers, and the Arctic Nuclear cities from which the boats in the past were equipped.

The Snake River Plain extends southward beyond the Snake River Plain south of Arco, including the Craters of the Moon, the Craters of the Moon National Monument, and the Craters of the Moon National Monument, 18 miles west of Arco.

Bibliography

Bibliography of Butte County, Idaho, Annotated Bibliography of Idaho, Bibliography of Idaho, Bibliography of Idaho,