



BLACK ROCK DESERT  
HIGH ROCK CANYON  
EMIGRANT TRAILS



NATIONAL CONSERVATION AREA

## THE PLAYA

- The Black Rock Desert Playa (ply'-yah) is Spanish for "beach." The term, however, is generally applied to intermittent dry lakes in the West.
- The playa is one of the largest in the United States.
- It has an elevation change of five feet over a 25 mile stretch.
- It is composed of alkali silt and clay.
- The silt extends over a mile in some parts before bedrock is encountered.

### Playas are evidence of dry lakebeds...

- Everywhere there are deserts; there are also dry lake beds.
- Mountains are actively growing in the American West. Isn't that exciting! As a result, the basins between ranges tend to be bowls, with closed drainage. Just like the basins that comprise the Great Basin!
- As water dries up, it leaves behind the minerals it had once dissolved. These particles are silt and clay size. Wind and streams which once ran through it also helps transport these particles to the center of a basin.
- Clays make up the playa, which works to harden the muddy lakebed. That's why the playa surface is so hard and cracked during dry months.
- Salts are also abundant in many dry lake beds. This is mostly halite, which is the same as table salt. An abundance of the mineral halite will turn a dry lake bed into a salt flat. A good example of this is the Bonneville salt playa in Utah.
- The Black Rock Desert Playa is not a salt flat. It is comprised of silt and clay.
- Its surface is immaculate. It's flat and sturdy enough to land aircrafts on. In fact, a temporary runway is created every year during the Burning Man festival.

Why do we call it a playa, which is Spanish for beach? It seems that a beach, where ocean waves beat against the shore, conjures up a totally different image from a flat expanse of dry dust. Were the first settlers just playing a joke on the rest of the world- advertising the dry lake bed as a beach? Maybe the playa and the beach do share something. At either place you are freed a little from everyday life. The expanse of the playa, much like the ocean, gives one a sense of the immensity of the world. As far as the eye can see, it is uninhibited by buildings and the influence of man. It is truly free.

### Just for Fun...

Dry lake beds have many different names around the world.

*salars* – Latin America

*sabkhas* – north Africa

*vloers* – south Africa

*fyadh* – Arabia

*takirs* or *bahirs* – central Asia

*kavirs* - Iran



The Playa Itself



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### How the Black Rock Mountain was Formed:

- Mountains are formed during the collision of tectonic plates, causing folding and faulting which piles rocks up. It also causes volcanism, which creates mountains by piling up volcanic rocks.
- The black rock was sutured, or stuck, onto its present location during a plate collision.
- The Black Rock Mountain was, at one time, sedimentary and igneous rock in the ocean.
- Igneous rock is rock that is formed when hot magma (lava) crystallizes and solidifies. There are two types of igneous rock:
  - Extrusive-Igneous rock that cools at the surface of the earth, and because of this, it is composed of crystals that are small. Ex: Basalt
  - Intrusive-Igneous rock that cools below the surface of the earth, and because of this, it cools slowly, and has time to form large crystals. Ex: Granite, Gabbro
- Black Rock Mountain consists of both intrusive and extrusive igneous rock, such as Basalt and Limestone, a sedimentary rock.
- Nevada has an abundance of igneous rock. Some of the igneous rocks are related to sea-floor spreading, collision of ancient and modern plates, and hot spots in the Earth's mantle.

A view of the Black Rock that the emigrants may have seen coming down the trail.

A close-up view of the Black Rock.



[www.applegatetrail.org](http://www.applegatetrail.org)



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Black Rock



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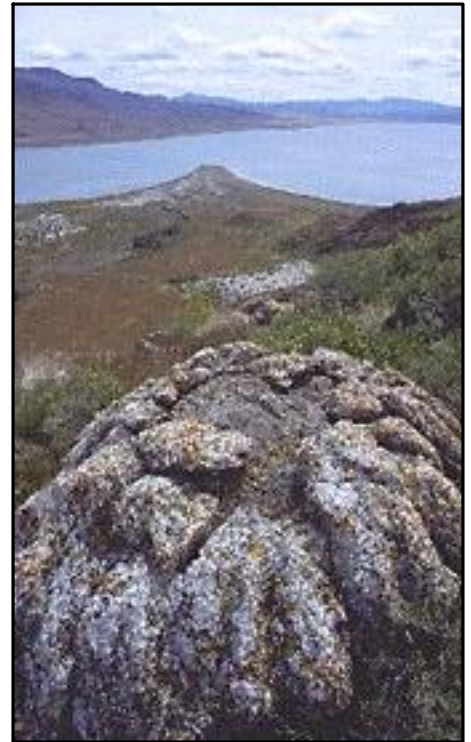


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### Tufa Rock

- Is porous rock that is formed when water evaporates from lime-rich waters, leaving calcite (calcium carbonate) to crystallize, often with impurities of iron oxides (rust) which give tufa its yellow and red coloration.
- Tufa is also formed through biogenesis, the biological activity of organisms like the alkali fly. When the adult alkali fly emerges from an underwater pupae case it leaves behind a minute deposit of calcium carbonate, a waste product from its earlier life stage beneath the salty, alkaline lake.
- Tufa is essentially common limestone. The Mono Lake: Tufa Towers thing that is uncommon about it, however, is the way in which it forms. Usually, springs rich in calcium mix with lake water rich in carbonates. As the calcium comes in contact with the carbonates in the lake, a chemical reaction occurs resulting in calcium carbonate (limestone).
- Tufa is common at great basin dry lakes, and at the Playa, there is evidence of old tufa formations that once were active when Lake Lahontan was full during the last ice age.



Mono Lake: Tufa Towers



Tufa rock at Mono Lake, California  
[www.gorzow.mm.pl/](http://www.gorzow.mm.pl/)



Chris Pattison: Nurseryman



Tufa Rock