

Salt Plains National Wildlife Refuge
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For Information on the
National Wildlife Refuge System
1 800/344 WILD

Cover photograph by Rod Krey

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CELEBRATING A
CENTURY
of CONSERVATION

U.S. Fish & Wildlife Service

Salt Plains

National Wildlife Refuge

Selenite Crystals



Open April 1 – October 15

Welcome to the Salt Plains National Wildlife Refuge



*Road to crystal digging site and view
of Salt Plains.*

FWS Photograph

The Salt Plains are a flat expanse of mud, completely devoid of vegetation, located in north central Oklahoma. The name, Salt Plains, is derived from the thin layer of salt that covers the flats. This salt was used by Indian tribes and early pioneers who first settled the area.

The Plains are seven miles in length and approximately three miles wide. They lie within the boundaries of the Salt Plains National Wildlife Refuge. Established in 1930, the refuge is an important feeding and resting area for migratory waterfowl and endangered species. The plains border the Great Salt Plains Reservoir that was constructed by the U.S. Army Corps of Engineers in 1941.

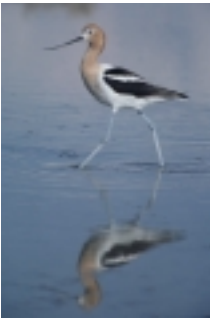
*Family enjoying
a day of selenite
digging.*

FWS photograph



Wildlife associated with crystal digging

The most productive area in which the selenite crystals are found has been divided into sections. Each section is used on a rotating basis to allow time for crystal growth



American Avocet.
FWS Photograph

replacement. It is also important to restrict crystal digging to particular sections because many bird species utilize the area for nesting purposes. Among these species are threatened snowy plovers, endangered interior least terns and American avocets.

Snowy plovers can be found throughout the crystal digging area. American avocets are mostly seen along the stream. It is important that these birds are not disturbed. Furthermore, it is illegal to harass or destroy the birds eggs and nests.

Observation Tower



Observation tower at Salt Plains NWR. FWS Photograph

For the pleasure of viewing wildlife and the landscape, an observation tower is located at the entrance of the selenite crystal digging area. The tower is open year-round from sunrise to sunset.

During fall months, white pelicans and sandhill cranes can be seen in the area. Also, an occasional whooping crane may be sighted. In winter, several thousand geese can often be seen along the lake shoreline.

Snowy Plover.
Photograph by
Tom J. Ulrich



What is selenite, and how are selenite crystals formed?



Typical crystal formation.
FWS Photograph

Selenite is a crystalized form of gypsum. Chemically, it is a hydrous calcium sulfate. Gypsum is a common mineral that takes on a great variety of crystal forms and shapes. On the Salt Plains, the crystals are formed just below the salt encrusted surface. They are seldom found deeper than two feet below the surface.

Crystals take on the characteristics of their environment; the finer the soil, the more clear the crystals. Iron oxide in the soil gives the crystals their chocolate brown color. Because these crystals form in wet soil, sand and clay particles are included within the crystal. These particles often form an “hourglass” shape, found only in this area. Other foreign objects in the soil such as sticks, rocks, bones, and even cockleburs, are sometimes included as the crystal forms. Single crystals, penetration twins, and clusters are the typical shapes most frequently encountered on the refuge. Exceptional individual crystals measuring up to seven inches long have been found, along with complex combinations weighing as much as 38 pounds.



Crystal clusters.
FWS Photograph



Large crystal cluster. FWS Photograph

Only in certain places on the Salt Plains are gypsum and saline solutions in the soil sufficiently concentrated to promote crystal growth. When temperature and brine conditions are ideal, the crystals may form very rapidly. When heavy rains or floods bring great quantities of fresh water to the plains, some of the selenite crystals may go back into solution until conditions are right for recrystallization.

When is crystal digging allowed?

April 1 through October 15
sunrise to sunset

As long as nothing happens to change the mineral content of the waters draining into the Salt Plains, these crystals will continue to form, just as they do today.

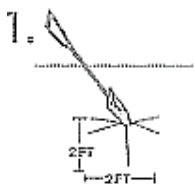
Once in the digging area, please drive your car only on the prescribed lanes of travel.

No special permit is required. Collectors are permitted to remove up to 10 pounds of crystals, plus one large cluster for their personal use in any one day.

Safety precautions

Due to the white salt surface, it is easy to get sunburned; therefore, sunglasses and protective clothing are recommended.

How do you collect crystals?



1. Use a shovel to dig a hole about two feet across and two feet deep, until you reach wet sand.

You may feel the shovel break through the crystals as it goes down. This cannot be helped as there is no way of predicting exactly where a bed of crystals is located.



2. Allow two or three inches of water to seep in from the bottom.



3. Use your hand or a container to splash water gently against the sides of the hole. The water will wash the soil away from the crystals.



4. When you find a crystal formation, continue splashing to wash it free of the supporting sand and clay.



5. At this stage of the process, the newly-exposed crystals are wet and fragile. Use great care in removing them.



6. After removing crystals from sand, place them where sun and wind will dry them. Egg cartons or other containers may be used for transporting the crystals.

Where is crystal digging permitted?



Watch for signs.
FWS Photograph

The map shows the area in which the selenite crystals are found, along with the roads leading to the area. Caution: Driving a car onto the plains can be hazardous. Beneath the surface crust, which is comparatively shallow, lies a quagmire of quicksand. For this reason, visitors are permitted to drive only on the prescribed route.

The gate leading into the crystal digging area, is located six miles west of Jet, Oklahoma, on U.S. Highway 64, then north on a dirt road for three miles, then east one mile to the gate.



Girl pans for crystals.
FWS Photographs

The visitor coming from Cherokee, Oklahoma, can reach the gate by going three miles south from Fifth Street in Cherokee on U.S. Highway 64, and then five miles east on a paved road to the gate.

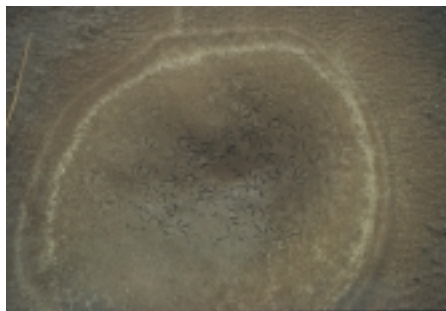
Crystal digging will be confined to areas posted for such activity.

Do not worry about filling in your dig holes. The birds utilize the shallow water holes after you are done digging.



Man with a crystal cluster.
FWS Photographs

We are pleased to have you as guests on the Salt Plains Selenite Crystal Digging Area. Enjoy your visit.



Bird tracks on the Salt Plains.
FWS Photograph