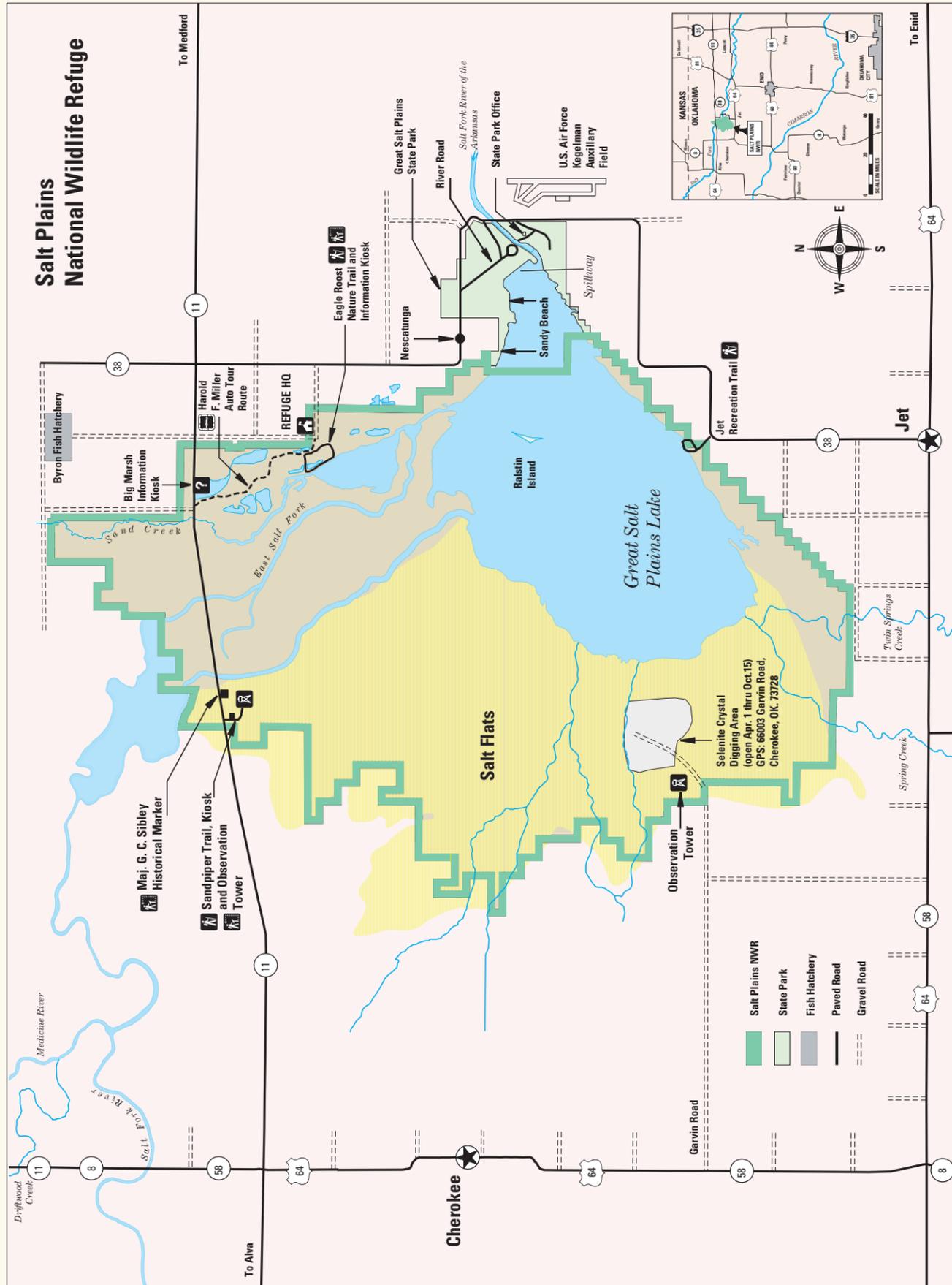


Salt Plains National Wildlife Refuge Selenite Crystals



Welcome: Salt Plains NWR

The Salt Plains are a flat expanse of soil, 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 are located within the Salt Plains National Wildlife Refuge. Established in 1930, the refuge is an important feeding and resting area for migratory waterfowl and endangered species, such as the whooping crane. The plains border the Great Salt Plains Reservoir that was constructed by the U.S. Army Corps of Engineers in 1941.



For More Information Contact

Salt Plains National Wildlife Refuge
71189 Harper Road
Jet, Oklahoma 73749
580/626-4794
580/626-4793 FAX
www.fws.gov/refuge/salt_plains/
www.facebook.com/SaltPlainsNWR
Oklahoma State Relay Service
800/722-0353 (T/V)
877/722-3515 (STS)



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Wildlife Associated with Crystal Digging

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.

During autumn, look for white pelicans and sandhill cranes. An occasional whooping crane may be sighted. In winter, several thousand geese can often be seen along the lake shore.

Observation Tower

An observation tower is located at the entrance of the selenite crystal digging area. The tower is open year-round from sunrise to sunset.

Photographs from left to right,
Selenite Crystals.
Road to the crystal digging site and view of the Salt Plains.
Whooping cranes.
Selenite Digging. All Photographs / USFWS



Selenite and How the Crystals Formed

Selenite is a crystallized 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. Since 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 objects in the soil such as sticks, rocks, bones, and even cockleburrs, 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.

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.

Photographs from left to right, Observation Tower / USFWS, Snowy Plover. © Tom J. Ulrich
Typical Selenite Formation, Crystal Clusters Photographs / USFWS

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 I Collect Selenite 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.



- Use your hand or a container to splash water gently against the sides of the hole to wash the soil away from the crystals.
- When you find a crystal formation, continue splashing to wash it free of the supporting sand and clay.
- The newly-exposed clusters are wet and fragile. Use great care in removing them.
- After removing the crystals from the sand, place them where the sun and wind will dry them. Use egg cartons or other containers to transport the crystals.

Where is Crystal Digging Permitted?

Drive only on the prescribed route and dig only in designated areas. Caution: Driving a car onto the plains can be hazardous. Beneath the surface crust, which is



comparatively shallow, lies a quagmire of quicksand.

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

From Cherokee, Oklahoma, travel three miles south from Fifth

Street in Cherokee on U.S. Highway 64, and then five miles east on a Garvin road to the gate. The address is 66003 Garvin Road Cherokee, Oklahoma.

Crystal digging is confined to areas posted for such activity.

Do not worry about filling in your dig holes. The birds utilize the mounds to nest upon after the dig area has rotated to the next site.

Enjoy your visit to the Salt Plains Selenite Crystal Digging Area.

Military Influences on the Salt Flats

The United States Army Air Corps used these salt flats as a practice bombing and gunnery range from 1942–1946. This defense training site was once known as the

Photographs from top left to right, Crystal Clusters, Boy pans for crystals, Large Crystal Cluster, Watch for Signs. All Photographs / USFWS

Great Salt Plains Bombing Range. Bombers were sent from Oklahoma City and Enid, Oklahoma, and Pratt and Dodge City, Kansas Army bases for target practice.



Glass vials from Chemical Agent Identification Sets (CAIS) were found in the digging area in 2007. These sets were used by the military until the 1960's to train soldiers to identify chemical agents. These training sets were not designed to be lethal.

These vials were removed and studies have been completed over the remainder of the dig area to locate any further military vials or munitions. We have reopened the dig area with reasonable assurance that there is nothing to be found besides selenite crystals beneath the surface. Only the areas open to selenite crystal digging were surveyed—pay attention to boundary signs.

Things to watch out for include glass vials, metal objects and munitions that look like shotgun shells. If you see anything that looks like these items or something you do not recognize, remember the 3R's:

Recognize: This does not belong and could be dangerous.

Retreat: Do not touch, disturb or move it.

Report: Call 580/626-4794 or 911

The U.S. Fish and Wildlife Service is encouraging people who may have collected CAIS vials or military munitions as souvenirs from the Salt Flats to notify their local law enforcement agency, so they can be safely recovered and destroyed. Having these items places you, your family and your neighbors at risk.

To protect yourself, your family and your neighbors, do not keep these as souvenirs.

