



## Playas as a National Conservation Priority Area under the Conservation Reserve Program

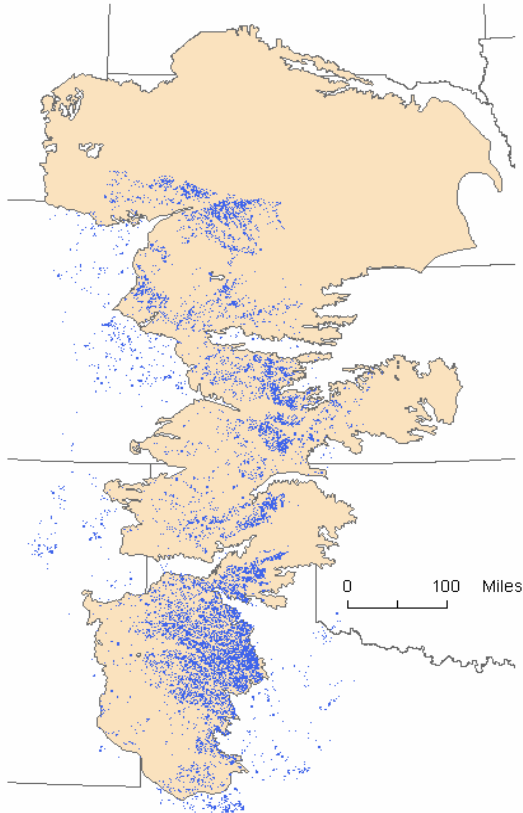
### Playas and their Importance as a Natural Resource

Playas are the most numerous wetland type in the southern High Plains, totaling more than 60,000 in Colorado, Kansas, Nebraska, New Mexico, Oklahoma and Texas. Playas are shallow, depressional, recharge wetlands that are generally round and small, averaging 17 acres in size. They have clay-lined basins and naturally fill with water periodically from rainfall and its associated runoff. Playas are the lowest points in large watersheds and focus recharge to the High Plains (Ogallala) Aquifer. Precipitation is inconsistent in the region and drought is a common occurrence, resulting in a wet-dry playa cycle. This cycle facilitates recharge and produces a highly diverse plant community which generates large quantities of nutritious seeds, essential for millions of waterfowl and other birds which migrate and winter in the region. Playas are the most important wetland type for groundwater and wildlife in the region. They are also the most threatened, requiring action now to save them for future generations. The Playa Lakes Joint Venture (PLJV) believes that including playas as a National Conservation Priority Area under the Conservation Reserve Program is warranted simply for their benefit to aquifers of the High Plains alone.

- More than 60,000 playas are found on the High Plains.
- Playas support 37 mammal species, more than 200 bird species, 13 amphibian species, 124 aquatic invertebrate taxa and greater than 340 species of plants.
- More than 99 percent of playas are privately owned.
- Playas recharge the High Plains/Ogallala Aquifer.



# Playas and the Ogallala: The Connection



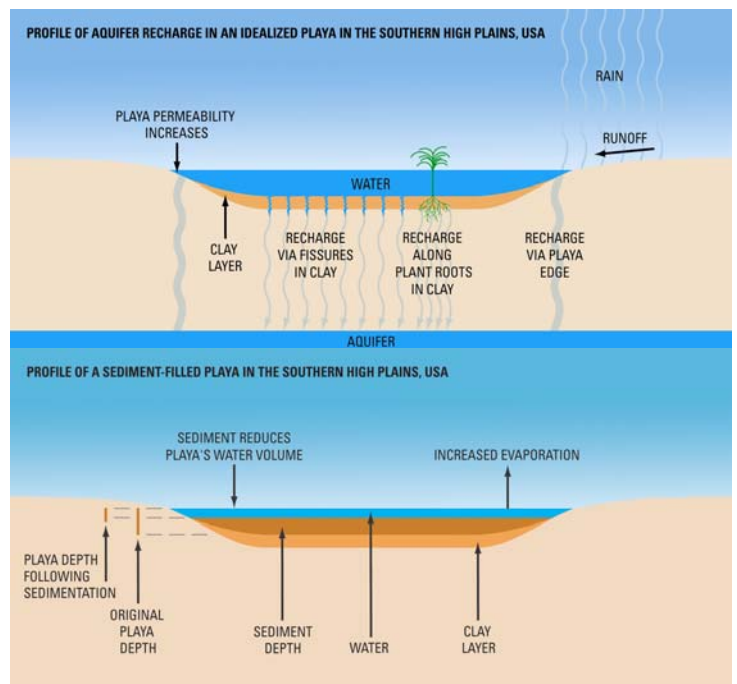
Location of playas (blue) over the Ogallala Aquifer (beige).

The High Plains/Ogallala Aquifer underlies approximately 174,000 square miles of the western High Plains region, primarily in Texas, New Mexico, Oklahoma, Kansas, Colorado and Nebraska. The Ogallala has long been a major source of water for municipalities, industries, and most notably agricultural production since the turn of the century. By far, the greatest source of groundwater extraction is from agricultural production which uses about 96 percent of the total groundwater pumped from the aquifer. In 1990, the aquifer was measured to contain about 3.270 billion acre-feet of water. In 1949, the Ogallala irrigated four million acres - by 1997 it irrigated 14 million acres. Consequently, the aquifer's water supply has declined steadily since the 1940s and recent measurements show a 1.35-ft. drop per year from 1992 to 1997. Although current farming techniques have resulted in reduced per capita use, overall demand is still increasing and still greatly surpasses the aquifer's natural rate of recharge.

Scientists have gathered substantial evidence pointing to playa wetlands as the primary, and some say the exclusive, source of recharge for the Ogallala Aquifer. Many studies indicate that recharge into the Ogallala under playas exceeds *three inches per year*, while recharge in inter-playa uplands occurs at 0.004 inches to 0.03 inches per year. Although these results have been known for quite some time, the ramifications have not been realized by the general public or even conservation professionals.

## Playas and Aquifer Recharge

Aquifer recharge occurs through playa basins and along the perimeter of playas. When a dry playa receives a surge of water from rainfall or runoff, water flows into the playa basin and penetrates the clay layer through large cracks and plant root openings. These cracks eventually swell shut and become impermeable as the clay absorbs more water. Once a playa is full, recharge also occurs along playa perimeters where clay is thin or non-existent. Current research on playas in the Southern High Plains found that recharge rates in playa basins exceeds three inches per year in unaltered playas. More than 70 percent of playas have been altered from their natural state by tilling, pitting and sedimentation. Of these, sedimentation is the most critical threat to playa function. Sedimentation occurs on all playas that are surrounded by tilled lands. Water from rain and irrigation carry loose soil into playas, gradually filling them. Sediment build up reduces the volume of water playas can hold and increases the rate of evaporation, thus limiting recharge. Research has found that over the past two to three decades, 50 percent of all playas have buried by sedimentation.



## Farm Bill Conservation Efforts

In 2004, the USDA Farm Service Agency developed a special program under CRP specifically aimed at protecting playas, entitled the Wetland Restoration Non Floodplain Initiative (CP-23a). The PLJV was an integral participant in forming this program and has been active in promoting it, mostly in Kansas. Although this program is highly regarded for its specific reference to playas, enrollment has been far too low for such a nationally important resource as playas (Table 1). Another program, Farmable Wetlands (CP-27), designed for wetlands less than 10 acres, has not had the desired success for enrolling playas either. Although these Continuous CRP practices are chipping away at the surface of playa conservation, true success for playas should involve tying their conservation to the broader Conservation Reserve Program.

Table 1. CP-23a allotments and current enrollments.

State	CP23a Acre Allotment	Known Acre Enrollment	Percent of Allotted Acres Enrolled
Colorado	1,600	0	0
Kansas	11,000	440	4.00
Nebraska	14,000	44	0.00
New Mexico	3,500	0	0
Oklahoma	1,500	165	11.00
Texas	25,000	134	0.01
<b>TOTALS</b>	<b>56,600</b>	<b>783</b>	<b>1.38</b>

Below are outcomes of landowner and agency outreach workshops where CP-23a was discussed and landowners expressed reasons why they may not or have not enrolled.

- County CRP cap already reached.
- Wetland determination. Official determinations are not required for this program, however NRCS does have to evaluate if the playa meets certain wetland characteristics to qualify. Some say landowners fear this process.
- Drought. Some farmers are successfully harvesting on dry playas and don't see benefit to taking them out of production.
- Promotion/implementation is driven by local FSA/NRCS offices. Even if state office promotes the program, doesn't mean local staff will carry it through.
- Local FSA/NRCS staff don't understand or know about program.
- Some playa wetlands, based on soil characteristics or because they are so degraded from grazing and cropping, do not qualify as wetlands for program.
- Difficult to farm around playas. Producers are interested in whole field enrollment, not small acreages with in the field. A small playa may not be worth enrollment in CP-23a.
- Weed generation on playas.
- Payment not enough and there is no signup incentive.
- Lack of NRCS/FSA or TSP personnel.
- Lack of promotion and education of landowners.
- CP-23a came out at same time as CP-33 which is more popular with landowners and easier to implement.



## Playas as a National Conservation Priority Area

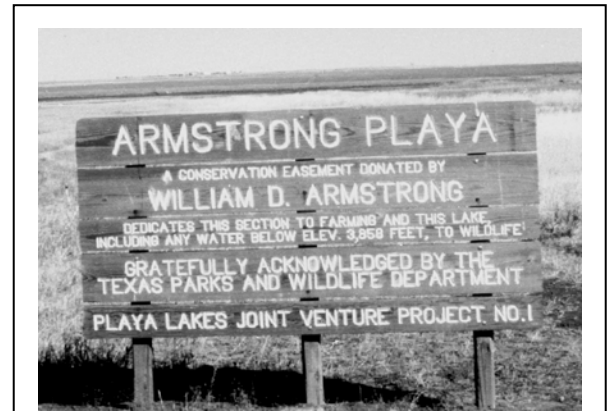
Playas, based solely on their important role in aquifer recharge, deserve NCPA status. The PLJV believes that NCPA status is also justified for the wildlife benefits that playas provide. Many playas are currently protected from sedimentation by being incidentally located in current CRP fields (Table 2). But the number is too few to maintain overall playa functionality, and PLJV believes that NCPA status will enhance enrollment of playas. Table 2 below shows three scenarios, based on PLJV GIS, of the effect that NCPA status would have in a four-county area of Kansas (near Garden City) where 295 playas (4,434 acres) have been enrolled in CRP without NCPA status. Within the entire six-state playa region, the PLJV estimates that 5 percent of all playas are incidentally currently enrolled in CRP. A modest increase in enrollment of playas under NCPA status of 35 percent (making the total enrolled 40 percent) would result in *357,000 new acres of enrolled/protected wetlands while maintaining the current acreage of CRP region wide.* 100 percent enrollment would result in approximately *1,020,000 new acres of enrolled wetlands!* PLJV believes that modest acreage gains from NCPA status will result in a disproportionate gain in aquifer recharge and wildlife numbers in the High Plains.

PLJV believes the barriers to landowner enrollment in CP-23a, especially their desire to enroll whole fields rather than playas in the middle of fields and problems with wetland determination, are eliminated with NCPA status. Further, PLJV believes NCPA status for playas is an economically important way to drive re-enrollment of CRP in the southern High Plains. NCPA status for playas will simultaneously benefit aquifer-driven economies and will maintain levels of acres currently enrolled in CRP.

The actual recharge benefit that may result from NCPA status for playas is uncertain because it depends on landowner demand for CRP. However, knowing that CRP buffers stop sedimentation, and assuming recharge continues at a rate cited in the literature of three inches per year below playas, and an additional 35 percent of playas will be enrolled in CRP, then an estimated *50 to 100 billion gallons of water* will be returned to the aquifer every year. Benefits to wildlife would also be enormous. If an additional 35 percent of CRP fields with playas are enrolled, there would be a corresponding increase in available habitat for waterfowl.

Table 2. Estimated effect of playas becoming a National Conservation Priority Area under CRP in four counties around Garden City, Kansas (counties of Finney, Gray, Meade, and Seward).

Current/Possible	Number of playas enrolled	Acres of playas enrolled	Total Acres of CRP
Current Enrollment	295	4,434	233,239
40% of fields with a playa become enrolled	1,114	13,484	289,354
60% of fields with a playa become enrolled	1,671	20,267	372,474
80% of fields with a playa become enrolled	2,228	27,677	447,416



Two photographs taken nine years apart show the effect of sedimentation on a playa with no surrounding vegetation. Playas with buffers maintain their hydrology and improve water quantity and quality going to aquifers.



For more information contact Playa Lakes Joint Venture at 303-926-0777 or [www.pljv.org](http://www.pljv.org)