

SPECIES TO BE CONSIDERED WHEN IMPLEMENTING STAMs

MAMMALS	Black-footed ferret (<i>Mustela nigripes</i>) – E Gulf Coast jaguarundi (<i>Herpailurus yagouaroundi cacomitli</i>) – E Ocelot (<i>Leopardus pardalis</i>) – E Texas Kangaroo Rat (<i>Dipodomys elator</i>) – UR
BIRDS	Attwater's prairie chicken (<i>Tympanuchus cupido attwateri</i>) – E Black-capped vireo (<i>Vireo atricapilla</i>) – E Golden-cheeked warbler (<i>Dendroica chrysoparia</i>) – E Brown pelican (<i>Pelecanus occidentalis</i>) – E Eskimo curlew (<i>Numenius borealis</i>) – E Northern aplomado falcon (<i>Falco femoralis</i>) – E Red-cockaded woodpecker (<i>Picoides borealis</i>) – E Sprague's pipit (<i>Anthus spragueii</i>) – C
REPTILES	Concho water snake (CWS) (<i>Nerodia paucimaculata</i>) – T Dunes sagebrush lizard (<i>Sceloporus arenicolus</i>) – C
AMPHIBIANS	Houston toad (<i>Bufo houstonensis</i>) – E
KARST INVERTEBRATES	ground beetle, no common name (<i>Rhadine exilis</i>) – E ground beetle, no common name (<i>Rhadine infernalis</i>) – E Helotes mold beetle (<i>Batrissodes venyivi</i>) – E Cokendolpher cave harvestman (<i>Texella cokendolpheri</i>) – E Robber Baron Cave meshweaver (<i>Cicurina baronia</i>) – E Madla cave meshweaver (<i>Cicurina madla</i>) – E Bracken Bat Cave meshweaver (<i>Cicurina venii</i>) – E Government Canyon Bat Cave meshweaver (<i>Cicurina vespera</i>) – E Government Canyon Bat Cave spider (<i>Neoleptoneta microps</i>) – E Tooth Cave spider (<i>Neoleptoneta myopica</i>) – E Tooth Cave pseudoscorpion (<i>Tartarocreagris texana</i>) – E Bee Creek Cave harvestman (<i>Texella reddelli</i>) – E Kretschmarr Cave mold beetle (<i>Texamaurops reddelli</i>) – E Tooth Cave ground beetle (<i>Rhadine persephone</i>) – E Bone Cave harvestman (<i>Texella reyesi</i>) – E Coffin Cave mold beetle (<i>Batrissodes texanus</i>) – E
INVERTEBRATES	American burying beetle (<i>Nicrophorus americanus</i>) – E Scaleshell mussel (<i>Leptodea leptodon</i>) – E Higgins eye mussel (<i>Lampsilis higginsii</i>) – E Dakota skipper (<i>Hesperis dacotae</i>) – C
FISH	Arkansas River shiner (<i>Notropis girardi</i>) – T Fountain Darter (<i>Etheostoma fonticola</i>) – E Neosho Madtom (<i>Noturus placidus</i>) – T Pallid Sturgeon (<i>Scaphirhynchus albus</i>) – E Topeka shiner (<i>Notropis topeka</i>) – E Arkansas Darter (<i>Etheostoma cragini</i>) – C
PLANTS	Black lace cactus (<i>Echinocereus reichenbachii</i> var. <i>albertii</i>) – E Blowout penstemon (<i>Penstemon haydenii</i> S. Wats.) – E Large-Fruited Sand Verbena (<i>Abronia macrocarpa</i>) – E Navasota Ladies'-Tresses (<i>Spiranthes parksii</i>) – E Slender Rushpea (<i>Hoffmannseggia tenella</i>) – E South Texas Ambrosia (<i>Ambrosia cheiranthifolia</i>) – E Texas Prairie Dawn (<i>Hymenoxys texana</i>) – E Texas wild-rice (<i>Zizania texana</i>) – E Western prairie fringed orchid (<i>Platanthera praeclara</i>) – T

T = Threatened E = Endangered C = Candidate Species
UR = Under Review

Interior Least Tern (*Sterna antillarum athalassos*)

Status: Endangered

Description: These 8- to 9-inch birds have a black "crown" on their head, a snowy whiter underside and forehead, grayish back and wings, orange legs, and a yellow bill with a black tip. To feed, the terns hover over and dive into standing or flowing water to catch small fish.



Photo by USFWS

Range: Interior least terns breed in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande river systems. Their winter home is not known but probably includes coastal areas of Central and South America.

Habitat: From late April to August, terns use barren to sparsely vegetated sandbars along rivers, sand and gravel pits, or lake and reservoir shorelines.

Reproduction: The terns nest in a shallow hole scraped in an open sandy area, gravelly patch, or exposed flat. They nest in small colonies. The chicks leave the nest only a few days after hatching, but the adults continue to care for them, leading them to shelter in nearby grasses and bringing them food.

Source: USFWS, 2011 <www.fws.gov/midwest/endangered/birds/tern.html>

Piping Plover (*Charadrius melodus*)

Status: Threatened

Description: These small, stocky shorebirds have a sand-colored upper body, a white underside, and orange legs. During the breeding season, adults have a black forehead, a black breast band, and an orange bill. The plovers eat insects, spiders, and crustaceans.



Photo by USFWS

Range: Piping plovers are migratory birds. In the spring and summer they breed in northern United States and Canada. There are three locations where piping plovers nest in North America: the shorelines of the Great Lakes, the shores of rivers and lakes in the Northern Great Plains, and along the Atlantic Coast. Their nesting range has become smaller over the years, especially in the Great Lakes area. In the fall, plovers migrate south and winter along the coast of the Gulf of Mexico or other southern locations.

Habitat: Piping plovers use wide, flat, open, sandy beaches with very little grass or other vegetation. Nesting territories often include small creeks or wetlands.

Reproduction: The female lays four eggs in its small, shallow nest lined with pebbles or broken shells. Both parents care for the eggs and chicks. When the chicks hatch, they are able to run about and feed themselves within hours.

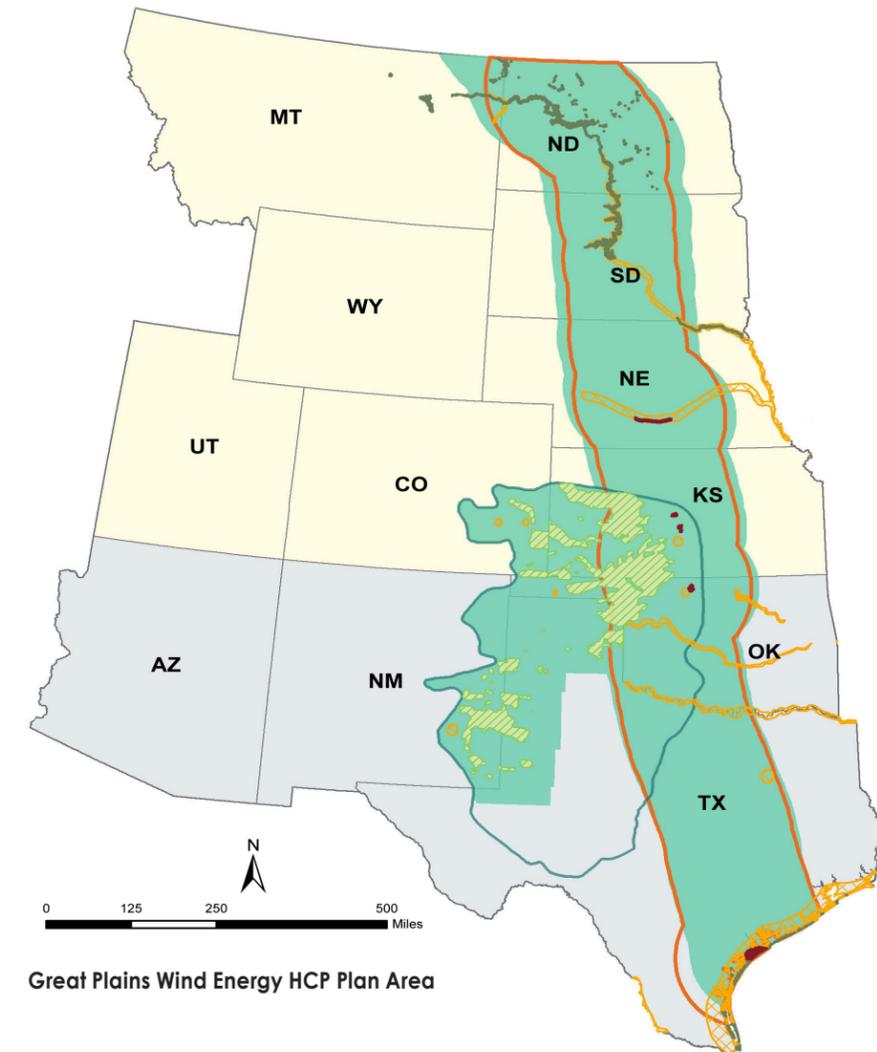
Source: USFWS, 2011 <www.fws.gov/midwest/endangered/pipingplover/pipingpl.html>

Species included in the Great Plains Wind Energy Habitat Conservation Plan

Species being considered for inclusion in the Great Plains Wind Energy Habitat Conservation Plan (HCP) include certain species listed as federally threatened or endangered—or having the potential to become listed during the life of the HCP—and having some likelihood of occurring within the proposed Plan Area. Species currently considered for take coverage include the following: **whooping crane** (*Grus americana*), endangered; **interior least tern** (*Sterna antillarum athalassos*), endangered; **piping plover** (*Charadrius melodus*), threatened; and **lesser prairie-chicken** (*Tympanuchus pallidicinctus*), candidate for listing.

The Plan Area for the Great Plains Wind Energy HCP is proposed to include non-federal lands within: 1) 100 miles on each side of the center line of the whooping crane migration corridor, extending from the Gulf Coast of Texas to the Canadian border, and 2) portions of the historic range of the lesser prairie-chicken, with the boundary extending into parts of Kansas, Colorado, Oklahoma, New Mexico, and Texas.

Additionally, Species Take Avoidance Measures (STAMs) are being developed for many other species. Species which may have STAMs are listed in the panel on the last page of the fact sheet. By fully implementing STAMs, it is anticipated that incidental take of these species during the life of a specific wind energy facility would be avoided.



Great Plains Wind Energy HCP Plan Area

ENDANGERED: an animal or plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range

THREATENED: an animal or plant likely to become endangered within the foreseeable future throughout all or a significant portion of its range

CANDIDATE: Plants and animals that have been studied and the Service has concluded that they should be proposed for addition to the Federal endangered and threatened species list

Great Plains Wind Energy HCP Plan Area

- Designated Whooping Crane Critical Habitat
- Whooping Crane Migration Corridor (approximately 200 miles wide)
- Piping Plover Critical Habitat
- Lesser Prairie Chicken – Current Range
- Lesser Prairie Chicken – Historic Range
- Interior Least Tern – Breeding Habitat
- Service Region 6
- Service Region 2



Whooping Crane (*Grus Americana*)

Status: Endangered

Description: The whooping crane is the tallest North American bird. Males, which may approach 5 feet in height, are larger than females. Adults are snowy white except for black primary feathers on the wings and a bare red face and crown. The bill is a dark olive-gray, which becomes lighter during the breeding season. The eyes are yellow and the legs and feet are gray-black. Immature cranes are a reddish cinnamon color that results in a mottled appearance as the white feather bases extend. The juvenile plumage is gradually replaced through the winter months and becomes predominantly white by the following spring as the dark red crown and face appear. Yearlings achieve the typical adult appearance by late in their second summer or fall. The life span is estimated to be 22 to 24 years in the wild. Whooping cranes are omnivorous feeders. They feed on insects, frogs, rodents, small birds, minnows, and berries in the summer. In the winter, they focus predominantly on animal foods, especially blue crabs and clams. They also forage for acorns, snails, crayfish, and insects in upland areas.

Range and Population: The historic range of the whooping crane once extended from the Arctic coast south to central Mexico, and from Utah east to New Jersey, into South Carolina, Georgia, and Florida. A separate non-migratory breeding population occurred in southwestern Louisiana. The current nesting range of the self-sustaining natural wild population is restricted to Wood Buffalo National Park in Saskatchewan, Canada, and the current wintering grounds of this population are restricted to the Texas Gulf Coast at Aransas National Wildlife Refuge and vicinity. A major traditional migratory stopover is at Salt Plains National Wildlife Refuge in Oklahoma.

The whooping crane population, estimated at 500 to 700 individuals in 1870, declined to only 16 individuals in the migratory population by 1941 as a consequence of hunting and specimen collection, human disturbance, and conversion of the primary nesting habitat to hay, pastureland, and grain production. The main threat to whooping cranes in the wild is the potential of a hurricane or contaminant spill to destroying their wintering habitat on the Texas coast. Collisions with power lines and fences are also known hazards to wild whooping cranes. In January, 2000, there were 187 individuals in the flock, including 51 nesting pairs.



Photo by USFWS

Whooping cranes in flight

Habitat: The nesting area in Wood Buffalo National Park is a poorly drained region interspersed with numerous potholes. Bulrush is the dominant emergent in the potholes used for nesting. On the wintering grounds at Aransas National Wildlife Refuge in Texas, whooping cranes use the salt marshes that are dominated by salt grass, saltwort, smooth cordgrass, glasswort, and sea ox-eye. They also forage in the interior portions of the refuge, which are gently rolling, sandy, and are characterized by oak brush, grassland, swales, and ponds. Typical plants include live oak, redbay, Bermuda grass, and bluestem.

Reproduction: Whooping cranes are monogamous and form life-long pair bonds but will remate following the death of a mate. Whooping cranes return to the same breeding territory in Wood Buffalo National Park, Canada, in April and nest in the same general area each year. Despite the fact that most pairs lay two eggs, seldom does more than one chick reach fledging. Autumn migration begins in mid-September, and most birds arrive on the wintering grounds of Aransas National Wildlife Refuge on the Texas Gulf Coast by late-October to mid-November. Whooping cranes migrate singly, in pairs, in family groups, or in small flocks, and are sometimes accompanied by sandhill cranes. They are diurnal migrants, stopping regularly to rest and feed, and use traditional migration staging areas. On the wintering grounds, pairs and family groups occupy and defend territories. Spring migration is preceded by dancing, unison calling, and frequent flying. Family groups and pairs are the first to leave the refuge in late-March to mid-April.

Only one out of four hatched chicks survive to reach the wintering grounds. Whooping cranes generally do not produce fertile eggs until age 4.

Source: USFWS, 2010 <www.fws.gov/northflorida/WhoopingCrane/whoopingcrane-fact-2001.htm>

Lesser prairie-chicken (*Tympanuchus pallidicinctus*)

Status: Candidate

Description: The Lesser prairie-chicken is a medium-sized, grayish brown grouse. The total length of adults is 14-16 inches. In adults, most of the body is barred with alternating dark and light bands. Dark bands on upperparts are complex, including black and cinnamon tones; light bands on upperparts range from buff to white. Upperparts are therefore darker and more richly colored than underparts. Their tails are short, rounded, and brownish black. Males display a bright yellow eye-comb above eye and dull red esophageal "air sacs" on the side of their necks during courtship. Males also have a tuft of elongated feathers (pinnae) on each side of neck; these are held erect during courtship display. Females have shorter pinnae. Immature birds are similar to adults but more richly colored, especially on throat. They feed on insects, seeds, acorns, vegetative material, and cultivated grains.

Range and Population: The historical range of the Lesser prairie-chicken extended from southeastern Colorado and southwestern Kansas southward through western Oklahoma to southeastern New Mexico and western Texas. Currently, the species is discontinuously distributed within a small portion of the historical range, including all five of these states. Formerly, the species ranged north to southwestern Nebraska, but there is no evidence of breeding in that state, and the species' ephemeral occurrence there may have been an artifact of post-settlement habitat changes. This species is regarded as non-migratory.

Habitat: Lesser prairie-chickens inhabit mixed grass-dwarf shrub communities that occur on sandy soils, principally the sand sagebrush association in Colorado, Kansas, and Oklahoma, and to a lesser extent, Texas and New Mexico; and the shinnery oak-bluestem association in Oklahoma, Texas, and New Mexico. Leks typically occur on knolls or ridges with relatively short and/or sparse vegetation. Lesser prairie-chicken leks may be on human-created open areas (e.g., oil well pads, roads, reverted cropland, cultivated fields, areas treated with herbicides, and recently burned areas).



Photo by USFWS

Male lesser prairie-chicken

Nesting sites are in sand sagebrush or shinnery oak grasslands with high canopy cover and moderate vertical and horizontal cover, primarily residual vegetation. Females prefer to nest in relatively tall, dense vegetation. Nests often are under sand sagebrush or shinnery oak shrub or amid tall bunchgrasses. The height and density of forbs and residual grasses are greater at nest sites than on adjacent rangeland.

Reproduction: In spring and fall, adults congregate on leks where males engage in communal courtship displays at sunrise and before sunset. Dominant males establish and defend territories in the central portion of the lek, whereas subordinate males are generally restricted to peripheral territories. The number of males attending a lek varies seasonally and annually and is influenced by habitat and population density. Females attend leks to copulate with males from late March through May. Nesting is initiated from mid-April through late May, and hatching peaks from late May through mid-June. One egg is laid per day, and incubation begins when the clutch is complete. Droughts and hot, dry weather during nesting season may negatively impact hatching success.

Source: USFWS, 2010 <ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AZ>