Project No.: 0535-012-01

November 20, 2020

Mr. Gregg Eckhardt
San Antonio Water Systems
2800 U.S. Hwy. 281 North
San Antonio, Texas 78212

Re: On-site evaluation for federal and state listed species for the Mitchell Lake Wetlands Quality Treatment Initiatives Project

Dear Mr. Eckhardt,

This letter report provides an assessment of potential effects to federal and state-listed and candidate threatened and endangered species within the area proposed for the Mitchell Lake Wetlands Quality Treatment Initiatives Project (Project). It is being submitted to the San Antonio Water System (SAWS) in support of obtaining authorization (permit) for the Project under Section 404 of the Clean Water Act from the United States Army Corps of Engineers (USACE). This report includes a description of the Project and the investigation area; general observations made during an on-site visual assessment; and an evaluation of potential impacts to federal and state-listed/candidate species. The report concludes that seven (7) federal or state-listed species may be present within the Project area, but that the Project would not likely adversely affect the recovery of any federally or state listed threatened, endangered, or proposed species or their critical habitat. Supplemental information related to the assessment is provided in attachments to this report.

PROJECT DESCRIPTION

The primary objectives of the Project are two-fold: (1) reducing the discharge of pollutants from Mitchell Lake to downstream water bodies, and (2) reducing the frequency and duration of uncontrolled discharges over the Mitchell Lake spillway. These objectives will be met through the coordinated management of stormwater storage within the lake and controlled releases of stored stormwater to a downstream constructed wetland. The major components of the Project are as follows:

- Stabilization and uniform grading of the existing dam to a final crest elevation of 528.0 feet NAD83 (ft).
- Construction of a new auxiliary spillway with its crest at 521.5 ft. The spillway will be a labyrinth design with a 180 ft by 45 ft footprint and an effective weir length of 840 ft.
- Two new outlet works in the dam that will discharge from Mitchell Lake to two wetland treatment trains, one on each side of Cottonmouth Creek. The outlet works will be set to maintain the lake at a normal pool elevation of 518.5 ft.
- Five wetland cells (three on the west side of Cottonmouth Creek and two on the east side of Cottonmouth Creek) with a combined wetted surface area of approximately 100 acres (ac).
- Conveyance facilities to route flows from the lake, through the wetland cells, and to the receiving streams (Cottonmouth Creek and Medina River) by gravity.
- Stream bank stabilization along two reaches of the Medina River that are subject to continuing erosion.

SITE DESCRIPTION

Mitchell Lake is located south of San Antonio in southern Bexar County, Texas. The lake surface covers approximately 475 acres at a normal pool elevation of 519.5 ft. The lake is an on-channel impoundment and includes an earthen dam, the main body of the lake, and a "polder complex" located in the upper portion of the lake. The contributing watershed of the lake is approximately 8.7 square miles, excluding the area of the lake itself.

For this report, an investigation area (see Figure 1) was identified that encompassed the proposed Project components, as well as Cottonmouth Creek, two reaches of the Medina River, and the entirety of Mitchell Lake, exclusive of the polders. The investigation area lies between US Highway 281 to the east and Pleasanton Road to the west and is bordered on all sides with a mix of unimproved and improved pasture, and a residential development and golf course to the northeast. The investigation area was evaluated to determine the potential presence of federal and state listed threatened or endangered species, federal candidate species, or state rare species. The investigation area consists of multiple tracts totaling approximately 975 acres.

Mitchell Lake was once part of the City of San Antonio (COSA) wastewater management system and was created by the construction of a dam and spillway in 1901. It previously collected sewage and partially treated wastewater for irrigation purposes until 1987, at which time those practices ceased. It currently receives fully treated effluent to maintain water levels that is supportive of waterfowl habitat. The lake is a nationally significant water body with unique, diverse ecosystems and avian fauna populations. Located on

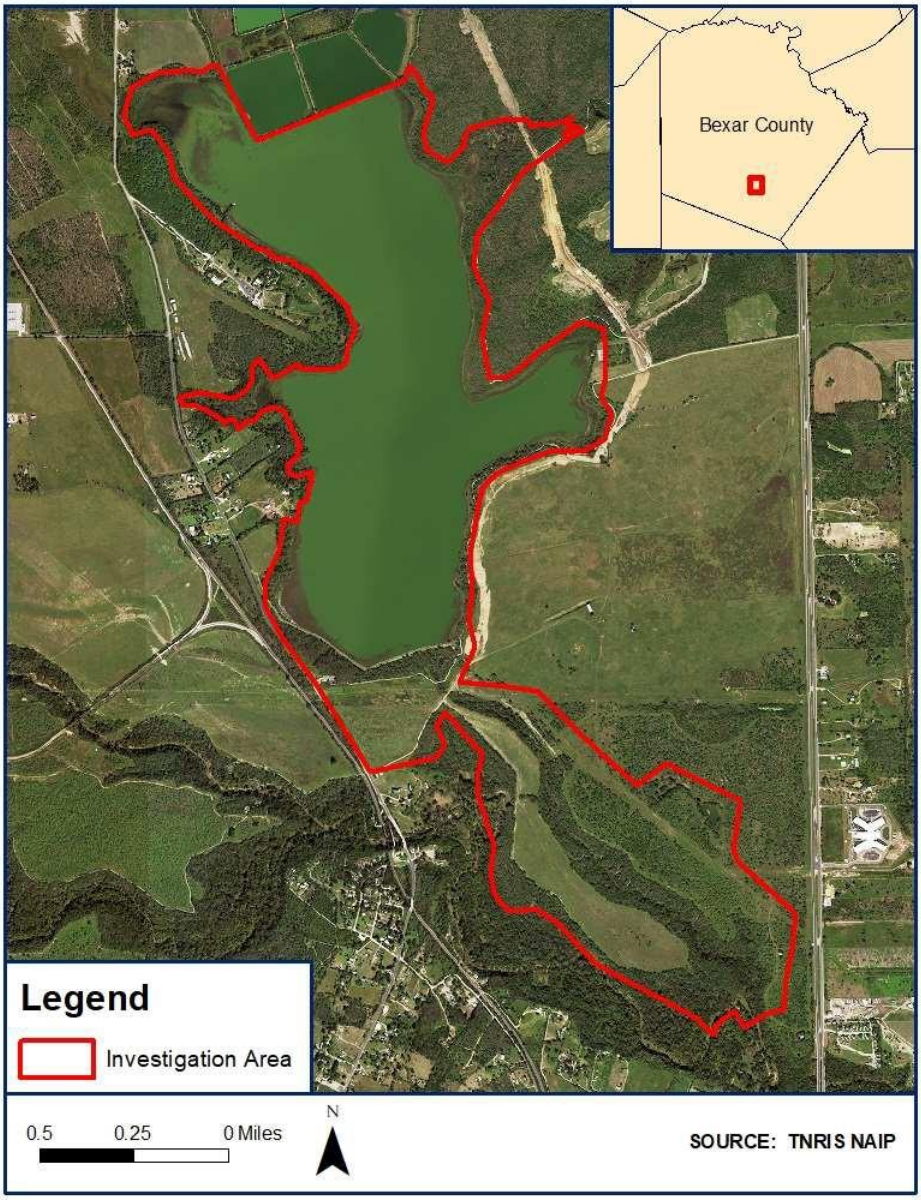

Figure 1. Mitchell Lake Wetlands Quality Treatment Initiatives Project Investigation Area in Bexar County, Texas.

the North American Central Flyway, migrating birds frequently rest and feed at Mitchell Lake. More than 300 migrant bird species, including species federally listed under the Endangered Species Act and 30 species on the Audubon Watch List for declining populations, have been documented at the lake.

The lake is also an invaluable public resource for environmental education and community stewardship. In 1973, COSA designated it as a Refuge for Shore Birds and Water Fowl. In 2004, SAWS entered into an operating agreement with the National Audubon Society thus establishing the first Audubon Center in Texas.

The investigation area is located entirely within the Texas Blackland Prairie III Ecoregion, within the San Antonio River Basin. Specifically, the area is in the Northern Blackland Prairie IV Ecoregion (32a). It is bordered by the Southern Post Oak Savanna (33b) to the east and the Northern Nueces Alluvial Plains (31a) to the west. The Northern Blackland Prairie ecoregion historically comprised of broad tallgrass prairies consisting of little bluestem, big bluestem, yellow Indiangrass, and tall dropseed, and with sporadic forests and woodlands. Forests were typically limited to riparian areas and stream bottoms. Bottomland vegetation included bur oak, Shumard oak, sugar hackberry, elm species, ash species, eastern cottonwood, and pecan (Griffith, 2007). Little of the original natural habitat remains; most of the ecoregion has been converted to agricultural, industrial, and urban land uses (Griffith, 2007).

Cottonmouth Creek starts as an intermittent stream with a perennial pool immediately below the discharge from the Mitchell Lake spillway. The lower reach of Cottonmouth Creek is characterized as an ephemeral stream that eventually converges with the Medina River near the investigation area's southernmost boundary. Three sections of the Medina River intersect with the western boundary of the investigation area.

The investigation area is located entirely within the hydrologic unit code (HUC) for the Medina River (HUC 12100302). The hydrologic features within the investigation area include a perennial lake (Mitchell Lake), a perennial river (Medina River), intermittent and ephemeral portions of Cottonmouth Creek and other ephemeral drainages to Mitchell Lake. In addition, there are emergent fringe wetlands associated with Mitchell Lake. The primary source of hydrology for the investigation area is from surface runoff from the watershed following rain events, and floodplain influence from the Medina River, Cottonmouth Creek, and their associated tributaries. Additionally, Mitchell Lake periodically receives recycled water from the Leon Creek Water Recycling Center.

GENERAL OBSERVATIONS

The investigation area was visually assessed by biologists from Plummer Associates, Inc. (Plummer) during site investigations conducted October 5-8, 2020. The visual assessment was used in combination with desktop analysis and to provide an opinion of the proposed likelihood of a species' presence or preferred habitat occurring within the investigative area.

Based on visual observations, the investigation area contained woody shrubs and herbaceous vegetation mostly native to the region that are typical of upland regions. Woody shrubs and herbaceous vegetation were observed adjacent to Cottonmouth Creek and the Medina River. Hydrophytic vegetation was observed within the riparian zone surrounding Mitchell Lake and in a portion of Cottonmouth Creek immediately downstream from the Mitchell Lake impoundment.

MITCHELL LAKE

Woody and herbaceous vegetation were observed in the riparian zone surrounding Mitchell Lake. Hydrophytic herbaceous vegetation included jointed crown grass (*Paspalum distichum*) and sweetscent (*Pluchea odorata*). Other herbaceous hydrophytes observed included softstem bulrush (*Schoenoplectus tabernaemontani*), cattails (*Typhus* sp.), duckweed (*Lemna* sp.), rattlebrush (*Sesbania drummondii*), and spiny chloracantha (*Chloracantha spinosa*). Woody hydrophytes included black willow, and the non-native invasive saltcedar (*Tamarix ramosissima*). Upland areas surrounding Mitchell Lake were dominated by woody vegetation such as huisache (*Vachellia farnesiana*), honey mesquite (*Prosopis glandulosa*), and sugarberry (*Celtis laevigata*). Other herbaceous vegetation included malva-de-caballo (*Malachra capitata*), sumpweed (*Iva annua*), Texas frogfruit (*Phyla nodiflora*), switchgrass (*Panicum virgatum*), and tievine (*Ipomoea cordatotriloba*). Other woody vegetation observed in the riparian zone included paloverde (*Parkinsonia aculeata*) and povertyweed (*Baccharis neglecta*).

COTTONMOUTH CREEK

Cottonmouth Creek lays in a highly incised stream channel with nearly-vertical slopes up to 20 feet tall. The creek begins as an intermittent stream immediately downstream of the Mitchell Lake impoundment. Further downstream it is impounded again by a tree growing in the channel with a downstream flow regime reduced to one that only conveys stormwater flow in direct response to significant rain events, and thus is characterized as an ephemeral stream. A shallow perennial pool covered with duckweed (6-12 inches deep) occupies the upper reach immediately downstream of the Mitchell Lake spillway. Woody vegetation observed immediately downstream of the pool included black willow, with herbaceous vegetation dominated by switchgrass. The Cottonmouth Creek channel located downstream between the pool and the Medina River included different vegetation than observed at the wetland pool. Hydrophytic vegetation was observed within the upper reach of Cottonmouth Creek, including black willow (*Salix nigra*) and the non-native species rivercane (*Arundo donax*). Woody vegetation adjacent to or on bank slopes immediately above the drainage zone included ash-leaf maple (*Acer negundo*), black willow (*Salix nigra*), and live oak (*Quercus virginiana*). Herbaceous vegetation included Bermuda grass (*Cynodon dactylon*), Indian wood-oats (*Chasmanthium latifolium*), and straggler daisy (*Calytopcarpus vialis*).

AREAS UPLAND OF COTTONMOUTH CREEK

Upland habitat occupied areas east and west of Cottonmouth Creek. A cultivated field occupied the upland area to the west, while unimproved pasture occupied the upland area to the east. Woody vegetation observed in the western cultivated field included huisache and mesquite, while herbaceous vegetation included amaranth, one-seed croton (*Croton monanthogynus*), and doveweed (*Croton texensis*). Woody vegetation in the eastern pasture was dominated by honey mesquite. Herbaceous vegetation included cholla (*Cylindropuntia leptocaulis*), doveweed, prickly pear (*Opuntia sp.*), one-seed croton, Bermuda grass, cocklebur (*Xanthium strumarium*), silverleaf nightshade (*Solanum elaeagnifolium*), and ironweed (*Vernonia fasciculata*). A former pond (designated as a NWI freshwater pond) was observed within the central area of the eastern pasture, but the pond dam had been previously breached. Vegetation observed within the former pond area included Bermuda grass, huisache, paloverde, and rattlebrush.

RIPARIAN AREA OF THE MEDINA RIVER

Hydrophytic and non-hydrophytic vegetation were also observed in the riparian area east of the Medina River. Trees included sugar hackberry, honey mesquite, cedar elm (*Ulmus crassifolia*), pecan (*Carya illinoinensis*), chinaberry (*Melia azedarach*), black willow, eastern cottonwood (*Populus deltoides*), and western soapberry (*Sapindus saponaria*). Scrub/shrub vegetation included paloverde, prickly pear, yaupon holly (*Ilex vomitoria*), and ash-leaf maple. Herbaceous vegetation included Turk's cap (*Malvariscus arboreus*), Virginia wildrye (*Elymus canadensis*), inland sea-oats, straggler daisy, pigeonberry (*Rivina humilis*), giant ragweed (*Ambrosia trifida*), sumpweed, and violet ruellia.

OTHER SPECIES OBSERVED

Birds observed in the wetland areas included the American white pelican (*Pelecanus erythrorhynchos*), blue-winged teal (*Spatula discors*), red-winged blackbird (*Agelaius phoeniceus*), the scissor-tailed flycatcher (*Tyrannus forficatus*), and the white-eyed vireo (*Vireo griseus*). Insects observed in abundance included the European honeybee (*Apis mellifera*) and the common snout butterfly (*Libytheana carinenta*).

EVALUATION OF POTENTIAL IMPACTS

This section provides an assessment of whether the Project has the potential to adversely affect the recovery of federally or state-listed or candidate endangered or threatened species within the investigation area.

Table A-1, included in Attachment A, provides a summary of the status and preferred habitats for both the federally and state listed species for Bexar County. Information on preferred habitats was obtained from the USFWS (Federal Register) and TPWD resources. Information not obtained from TPWD or USFWS are cited and listed in the "References" section at the end of this letter.

On October 27, 2020, an official species list was obtained from the U.S. Fish and Wildlife Service (USFWS) via the Information, Planning, and Conservation System (IPaC) discussing relevant information specific to federally listed threatened, endangered, and candidate species. The official federal species list for the approximately 975-acre investigation area is included in the IPaC report found in Attachment B. There are no critical habitats listed for any of the federally listed protected species within or in the immediate vicinity of the investigation area.

Several federally listed species including the least tern (*Sterna antillarum*, endangered), piping plover (*Charadrius melodus*, threatened), and red knot (*Calidris canutus*, threatened) have the potential to occur within the investigation area during migration; however, per the USFWS IPaC Report these species are only to be considered for wind related projects. A wind related project is not proposed; therefore, these species were not considered in the affects analysis.

In addition to the federally listed species, the Texas Parks and Wildlife Department (TPWD) provides an annotated list of species considered as endangered, threatened, or rare. The TPWD list for Bexar County included the federally listed species as well as state-listed species. In total, the TPWD list includes 20 state-listed endangered and threatened species in Bexar County. The TPWD species list for Bexar County is found in Attachment C. Species observations from iNaturalist.org and eBird.org were analyzed and no additional state or federally listed species were documented within or adjacent to the investigation area.

Based on review of the preferred habitat information for the listed species, the federal and state listed threatened, endangered, species with a potential to occur within the investigation area include the bald eagle, the Texas horned lizard, the Texas pimpleback, the white-faced ibis, the whooping crane, the wood stork, and the zone-tailed hawk. During the on-site investigations, no listed species were observed.

The following paragraphs provide a brief description of the species that could potentially occur within the investigation area and potential impacts to the species from the proposed Project.

Bald Eagle

Bald Eagles typically breed and winter in forested areas adjacent to large bodies of water. Throughout their range, they select large, super-canopy roost trees near water that are open and accessible for nesting. A

scrub-shrub wetland occurs at the northeast shore of Mitchell Lake. It is possible that bald eagles could use the trees present around the lake as roosting sites, so the possible presence of bald eagles in the vicinity of the lake should be considered, however, proposed improvements associated with the Project are not likely to adversely affect the species.

Texas Pimpleback

The Texas pimpleback is currently listed as a "candidate" species by the USFWS. Its historic range covers the Guadalupe and Colorado River drainage basins. They are typically found in riffle-pool-run complexes with gravel- to cobble-sized substrates. The species is particularly vulnerable to stream impoundment and sedimentation, where both activities adversely affect reproduction by reducing water quality. Impoundment also fragments existing populations by inhibiting mussel movement upstream. The development of the proposed wetland could potentially benefit the Texas pimpleback by improving the quality of water discharged into the Medina River. As a result, the Project is not likely to adversely affect the Texas pimpleback.

Texas Horned Lizard

The Texas horned lizard occurs in open, sparse habitat characterized by grass, cacti, and scrubby or shrubby woody vegetation. They prefer habitats with sandy or loose soil. The southern investigation area contains a habitat mosaic that includes areas of sparse vegetation with low woody shrubs with sandy soil. The field observations identified two fields, sparsely vegetated due to routine disturbance from tilling and ranching activities, which might provide marginal habitat for the Texas horned lizard. However, no Texas horned lizards or harvester ant colonies (primary food source) were observed during the field investigation. The Texas horned lizard is not likely to be present within the proposed Project area and better-quality habitat occurs within the surrounding areas. Therefore, the Texas horned lizard is not likely to be adversely affected by the Project.

White-faced Ibis

The white-faced ibis seems to prefer freshwater marshes, where it can find insects, newts, leeches, earthworms, snails and especially crayfish, frogs, and fish. They roost on low platforms of dead reed stems or on mud banks. During the nesting season, they are colonial and will construct a deep cup of dead reeds among beds of bulrushes, on floating mats of dead plants or they may nest in trees. The areas where these nests are built usually are where water is less than three feet deep. It nests in isolated colonies from Oregon to Kansas, but its center of greatest abundance seems to be in Utah, Texas and Louisiana. In Texas, they breed and winter along the Gulf Coast and may occur as migrants in the Panhandle and West Texas. Mitchell Lake is a relatively shallow water body with substantial areas of the lake less than 2 feet deep. It is

surrounded by a fringe wetland area dominated by emergent vegetation including cattail and bulrush. As the wetlands and floodplain within the investigation area appear to have the depth and the vegetation desired by the white-faced ibis, it is possible that the white-faced ibis would be found within the investigation area. The Project will reduce the lake level from 519.5 to 518.5 ft. MSL; however, overall foraging habitat will increase with the migration and expansion of the fringe wetland around the lake perimeter, and the construction of the treatment wetlands. Accordingly, the Project is not likely to adversely affect the white-faced ibis.

Whooping Crane

The whooping crane breeds, migrates, winters, and forages in a variety of wetland and other habitats, including coastal marshes and estuaries, inland marshes, lakes, ponds, wet meadows and rivers, and agricultural fields. During migration, whooping cranes use a variety of habitats; however, wetland mosaics appear to be the most suitable. For feeding, whooping cranes primarily use shallow, seasonally and semi-permanently flooded palustrine wetlands for roosting, and various cropland and emergent wetlands. The investigation area may qualify as having a variety of habitats useful to migrating populations of whooping crane, especially due to the emergent wetlands within the fringe of Mitchell Lake. Therefore, it is possible that the whooping crane could be present periodically within the investigation area during migration. However, the investigation area would not be suitable as nesting habitat. The Project will reduce the lake level from 519.5 to 518.5 ft. MSL; however, overall foraging habitat will increase with the migration and expansion of the fringe wetland around the lake perimeter, and the construction of the treatment wetlands. The proposed Project would not adversely affect the migrating individuals as it would provide additional foraging area.

Wood stork

The wood stork roosts, forages, and breeds in a variety of wetland habitats. It typically roosts and forages in ponds, marshes, and flooded fields where it likely encounters still, shallow water suitable for foraging. They overwinter in restricted counties along the Texas Gulf Coast, and they potentially migrate through central and coastal Texas. Because the Project site is within the Central Flyway and the existing habitat associated with Mitchell Lake, the wood stork could potentially use the site as a stopover for foraging during migration. The Project will reduce the lake level from 519.5 to 518.5 ft. MSL; however, overall foraging habitat will increase with the migration and expansion of the fringe wetland around the lake perimeter, and the construction of the treatment wetlands. The proposed Project is likely to increase the quality and quantity of foraging habitat available and thus the Project is not likely to adversely impact the species.

Zone-tailed hawk

The zone-tailed hawk is found near watercourses in a variety of habitats ranging from woodlands to open, arid country and deserts. It typically breeds and hunts in places of varied topography, such as hillsides and canyons, and it prefers areas with watercourses. It breeds in south-central and west Texas. There are large differences in topography from the upland areas at the investigation area to the channels of Cottonmouth Creek and the Medina River. Additionally, the site is covered by a mosaic of open water, forest, fringe wetlands, and pastures. Development of the proposed Project components would increase available wetland habitat, thus enhancing habitat for the zone-tailed hawk; and therefore, is not likely to adversely affect the species.

CONCLUSIONS

Based on the on-site observations and review of habitat requirements, there is potential for the bald eagle, the Texas horned lizard, the Texas pimpleback, the white-faced ibis, the whooping crane, the wood stork, and the zone-tailed hawk to occur at least periodically within the investigation area. Though no individuals were observed during the field investigation, some suitable habitat was observed for these species. The remainder of the listed endangered or threatened, or candidate species or their critical habitats are not likely to be present within the investigation area. The proposed Project components would expand available habitat and improve quality of the water discharging into the Medina River. As a result, the Project is not likely to adversely affect the continued recovery of any Federally or state listed threatened, endangered, or proposed species or their critical habitat. Should you have any questions or comments regarding this report, please contact Breena Riley at briley@plummer.com or Nathan Saxe at nsaxe@plummer.com.

Sincerely,

PLUMMER ASSOCIATES, INC.

Nathan Saxe

Digitally signed by Nathan Saxe
DN: cn=Nathan Saxe, o=Plummer, ou, email=nsaxe@plummer.com, c=US
Date: 2020.11.20 14:29:03 -06'00'

Nathan E. Saxe
Senior Environmental Specialist

CC: Mr. Juan Gomez, SAWS

Attachment A – Federal and State Listed Threatened and Endangered Species
Attachment B – USFWS IPaC Official Species List
Attachment C – TPWD Bexar County Rare Species List

REFERENCES

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Attachment A
Federal and State Listed Species

Table A-1: Federal and State Listed Threatened and Endangered Species Possible Presence on Site

Common Name	Species	Listing Status	Description of Suitable Habitat	Species Possible Presence on Site	Adversely Affect Recovery
Amphibians					
Cascade Caverns salamander	*Eurycea latitans*	State Listed Threatened	Aquatic; springs, streams and caves with rocky or cobble beds.	Not likely; no caverns or springs on-site.	Not likely to adversely affect
Mexican Treefrog	*Smilisca baudinii*	State Listed Threatened	Terrestrial and aquatic: Terrestrial habitats used include forested and brush around water bodies. Aquatic habitats used can be any body of water, but preferred breeding sites are small, ephemeral wetlands. (Malone, 2020)	Not likely; site is outside of currently-reported range records.	Not likely to adversely affect
San Marcos Salamander	*Eurycea nana*	Federal Listed Threatened	Aquatic; springs with cobble and algal mats. Known from a population restricted to a spring-fed lake and a section of the San Marcos River in San Marcos, Hayes County, Texas. (Chippindale & Fries, 2020)	Not likely; no springs on-site.	Not likely to adversely affect
Texas Blind Salamander	*Typhlomolge rathbuni*	Federal Listed Threatened	Aquatic; found in caves associated with the San Marcos Pool of the Edwards Aquifer. (Chippindale, 2020b)	Not likely; no caverns on-site.	Not likely to adversely affect
Texas Salamander	*Eurycea neotenes*	State Listed Endangered	Aquatic; apparently restricted to several springs in Bexar and Kendall Counties, Texas. First described from a spring in Helotes, Texas. (Chippindale, 2020a)	Not likely; no springs on-site.	Not likely to adversely affect
Arachnids					
Braken Bat Cave Meshweaver	*Cicurina venii*	Federal Listed Endangered	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	Not likely; preferred karst features not present on-site.	Not likely to adversely affect
Cokendolpher Cave Harvestman	*Texella cokendolpheri*	Federal Listed Endangered	Small, eyeless harvestman; karst features in north and northwest Bexar County.	Not likely; preferred karst features not present on-site.	Not likely to adversely affect

Table A-1: Federal and State Listed Threatened and Endangered Species Possible Presence on Site

Common Name	Species	Listing Status	Description of Suitable Habitat	Species Possible Presence on Site	Adversely Affect Recovery
Arachnids					
Government Canyon Bat Cave Meshweaver	*Cicurina vespera*	Federal Listed Endangered	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	Not likely; preferred karst features not present on-site.	Not likely to adversely affect
Government Canyon Bat Cave Spider	*Neoleptoneta microps*	Federal Listed Endangered	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	Not likely; preferred karst features not present on-site.	Not likely to adversely affect
Madla Cave Meshweaver	*Cicurina madla*	Federal Listed Endangered	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	Not likely; preferred karst features not present on-site.	Not likely to adversely affect
Robber Baron Cave Meshweaver	*Cicurina baronia*	Federal Listed Endangered	Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County.	Not likely; preferred karst features not present on-site.	Not likely to adversely affect
Birds					
Bald Eagle	*Haliaeetus leucocephalus*	Federally-protected by the Bald and Golden Eagle Protection Act (1940)	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds.	Yes; confirmed observation on eBird.org	Not likely to adversely affect due to the project improvements around the lake enhancing the available habitat.

Table A-1: Federal and State Listed Threatened and Endangered Species Possible Presence on Site

Common Name	Species	Listing Status	Description of Suitable Habitat	Species Possible Presence on Site	Adversely Affect Recovery
Birds					
Golden-cheeked Warbler	*Dendroica chrysoparia*	Federal and State Listed Endangered	Ashe juniper in mixed stands with various oaks (*Quercus* spp.). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.	Not likely; preferred habitat of mature Ashe juniper stands not present on-site.	Not likely to adversely affect
Interior Least Tern	*Sternula antillarum athalassos*	Federal and State Listed Endangered	Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony.	Yes; confirmed observation on eBird.org	Not likely to adversely affect due to the project not being a wind-based project.

Table A-1: Federal and State Listed Threatened and Endangered Species Possible Presence on Site

Common Name	Species	Listing Status	Description of Suitable Habitat	Species Possible Presence on Site	Adversely Affect Recovery
Birds					
Piping Plover	*Charadrius melodus*	Federal and State Listed Threatened	Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands having large, sparsely vegetated areas; primarily prefers sand flats, and secondarily prefers algal flats, both with minimal human disturbance.	Not likely; prefered habitat not found on-site.	Not likely to adversely affect
Reddish Egret	*Egretta rufescens*	State Listed Threatened	Resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear.	Not likely; preferred brackish and saline marsh and pond habitat not present on-site.	Not likely to adversely affect
Red Knot	*Calidris canutus rufa*	Federal Listed Threatened	Prefers the shoreline of coast and bays and also uses mudflats during rare inland encounters; primarily inhabits seacoasts on tidal flats and beaches, herbaceous wetland, and tidal flat/shore.	Not likely; preferred habitat not present on-site.	Not likely to adversely affect
Tropical parula	*Setophaga pitiayumi*	State Listed Threatened	Semi-tropical evergreen woodland along rivers and resacas. Texas ebony, anacua and other trees with epiphytic plants hanging from them. Dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeding April to July.	Not likely; preferred habitat not found on-site.	Not likely to adversely affect

Table A-1: Federal and State Listed Threatened and Endangered Species Possible Presence on Site

Common Name	Species	Listing Status	Description of Suitable Habitat	Species Possible Presence on Site	Adversely Affect Recovery
Birds					
White-faced Ibis	*Plegadis chihi*	State Listed Threatened	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	Yes; confirmed observation on eBird.org	Not likely to adversely affect due to maintainence of the lake level and water quality improvements from the project.
Whooping Crane	*Grus americana*	Federal and State Listed Endangered	Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.	Yes	Not likely to adversely affect due to the additional foraging areas created from the wetland.
Wood Stork	*Mycteria americana*	State Listed Threatened	Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.	Yes; confirmed observation on eBird.org	Not likely to adversely affect due to the additional foraging areas created from the wetland.

Table A-1: Federal and State Listed Threatened and Endangered Species Possible Presence on Site

Common Name	Species	Listing Status	Description of Suitable Habitat	Species Possible Presence on Site	Adversely Affect Recovery
Birds					
Zone-tailed Hawk	*Buteo albonotatus*	State Listed Threatened	Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions.	Yes; confirmed observation on eBird.org	Not likely to adversely affect due to the additional foraging areas created from the wetland.
Crustaceans					
Peck's Cave Amphipod	*Stigobromus (=Stygonectes) pecki*	Federal Listed Endangered	Subterranean, aquatic; only known from two springs in Comal County, Texas: Comal Springs and Hueco Springs.	Not likely; springs not present on-site.	Not likely to adversely affect
Fish					
Fountain Darter	*Etheostoma fonticola*	Federal Listed Endangered	Restricted to the headwaters of the San Marcos and Comal Rivers. Associated with floating algal mats.	Not likely; site is not within the known species range.	Not likely to adversely affect
Toothless Bindcat	*Trogloglanis pattersoni*	State Listed Threatened	Restricted to five artesian wells penetrating the San Antonio Pool of the Edwards Aquifer; found at depths of 305-582 m.	Not likely; artesian wells are not present on-site.	Not likely to adversely affect

Table A-1: Federal and State Listed Threatened and Endangered Species Possible Presence on Site

Common Name	Species	Listing Status	Description of Suitable Habitat	Species Possible Presence on Site	Adversely Affect Recovery
Fish					
Widemouth Blindcat	*Satan eurystomus*	State Listed Threatened	Restricted to five artesian wells penetrating the San Antonio Pool of the Edwards Aquifer; found at depths of 305-582 m.	Not likely; artesian wells are not present on-site.	Not likely to adversely affect
Insects					
A ground beetle	*Rhadine exilis*	Federal Listed Endangered	Associated with caverns and adjacent karst features in northern Bexar County, Texas.	Not likely; preferred karst features and caverns not present on-site.	Not likely to adversely affect
A ground beetle	*Rhadine infernalis*	Federal Listed Endangered	Associated with caverns and adjacent karst features in northern Bexar County, Texas.	Not likely; preferred karst features and caverns not present on-site.	Not likely to adversely affect
Comal Springs Dryopid Beetle	*Stygoparnus comalensis*	Federal Listed Endangered	Aquatic and subterranean; restricted to karst springs in Hays County and north Bexar County, Texas.	Not likely; karst springs not present on-site.	Not likely to adversely affect
Comal Springs Riffle Beetle	*Heterelmis comalensis*	Federal Listed Endangered	Found on gravel-lined riffles and runs at springs in northern Bexar County.	Not likely; karst springs not present on-site.	Not likely to adversely affect
Helotes Mold Beetle	*Batrisodes venyivi*	Federal Listed Endangered	Small, eyeless mold beetle; karst features in northwestern Bexar County and northeastern Medina County.	Not likely; preferred karst features not present on-site.	Not likely to adversely affect

Table A-1: Federal and State Listed Threatened and Endangered Species Possible Presence on Site

Common Name	Species	Listing Status	Description of Suitable Habitat	Species Possible Presence on Site	Adversely Affect Recovery
Mammals					
Black Bear	*Ursus americanus*	State Listed Threatened	Generalist. Historically found throughout Texas. In Chisos, prefers higher elevations where pinyon-oaks predominate; also occasionally sighted in desert scrub of Trans-Pecos (Black Gap Wildlife Management Area) and Edwards Plateau in juniper-oak habitat. For ssp. luteolus, bottomland hardwoods, floodplain forests, upland hardwoods with mixed pine; marsh. Bottomland hardwoods and large tracts of inaccessible forested areas.	Not likely; preferred habitat and range of known populations not present on-site.	Not likely to adversely affect
White-nosed Coati	*Nasua narica*	State Listed Threatened	Woodlands, riparian corridors and canyons. Most individuals in Texas probably transients from Mexico; diurnal and crepuscular; very sociable; forages on ground and in trees; omnivorous; may be susceptible to hunting, trapping, and pet trade	Not likely; site is not within vicinity of Mexican border where species is known to occur.	Not likely to adversely affect
Mollusks					
Guadalupe Orb	*Cyclonaias necki*	State Listed Threatened	Species' distribution is limited to the Guadalupe River basin. Occurs in both mainstem and tributary habitats. Often found in substrates composed of sand, gravel, and cobble, including mud-silt or gravel-filled cracks in bedrock slabs. Considered intolerant of reservoirs, but are known to occur in them (Howells 2010m; Randklev et al. 2017b). [Mussels of Texas 2019]	Not likely; documented as extirpated from the Medina River	Not likely to adversely affect

Table A-1: Federal and State Listed Threatened and Endangered Species Possible Presence on Site

Common Name	Species	Listing Status	Description of Suitable Habitat	Species Possible Presence on Site	Adversely Affect Recovery
Mollusks					
Texas Fatmucket	*Lampsilis bracteata*	Federal Candidate	Occurs in medium-sized rivers, where it burrows in sandy, muddy, or gravelly substrates; typically found in shallow streams, having consistently low flow, and with low slopes that inhibit flashy conditions that may scour the river bottom.	Not likely; species reported to be extirpated from the San Antonio River basin.	Not likely to adversely affect
Texas Pimpleback	*Quadrula petrina*	Federal Candidate	Historically found in the Colorado and Guadalupe River drainage basins; found in riffle-pool-run complexes with gravel- to cobble-sized substrates.	Yes	Not likely to adversely affect due to improvement of flow and water quality entering the Medina River due to construction of the treatment wetland.
Plants					
Bracted Twistflower	*Streptanthus bracteatus*	Federal Candidate	Shallow, well-drained gravelly clays and clay loams over limestone in oak juniper woodlands and associated openings, on steep to moderate slopes and in canyon bottoms; several known soils include Tarrant, Brackett, or Speck over Edwards, Glen Rose, and Walnut geologic formations; populations fluctuate widely from year to year, depending on winter rainfall; flowering mid April-late May, fruit matures and foliage withers by early summer.	Not likely; preferred habitat not present on-site.	Not likely to adversely affect

Table A-1: Federal and State Listed Threatened and Endangered Species Possible Presence on Site

Common Name	Species	Listing Status	Description of Suitable Habitat	Species Possible Presence on Site	Adversely Affect Recovery
Plants					
Texas Wild-rice	*Zizania texana*	Federal Listed Endangered	Only present in 2-mile stretch of the San Marcos River in Hays County, Texas; grows in spring-fed waters with fast flow.	Not likely; preferred habitat and known range not present on-site.	Not likely to adversely affect
Reptiles					
Cagle's Map Turtle	*Graptemys caglei*	State Listed Threatened	Aquatic: shallow water with swift to moderate flow and gravel or cobble bottom, connected by deeper pools with a slower flow rate and a silt or mud bottom; gravel bar riffles and transition areas between riffles and pools especially important in providing insect prey items; nests on gently sloping sand banks within ca. 30 feet of waters edge.	Not likely; waterbodies with preferred flow regime not present on-site.	Not likely to adversely affect
Texas Horned Lizard	*Phrynosoma cornutum*	State Listed Threatened	Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.	Not likely; no harvester ant colonies were observed on-site and the existing sparse vegetated areas are disturbed agricultural land.	Not likely to adversely affect

Table A-1: Federal and State Listed Threatened and Endangered Species Possible Presence on Site

Common Name	Species	Listing Status	Description of Suitable Habitat	Species Possible Presence on Site	Adversely Affect Recovery
Reptiles					
Texas Tortoise	*Gopherus berlandieri*	State Listed Threatened	Terrestrial: Open scrub woods, arid brush, lomas, grass-cactus association; often in areas with sandy well-drained soils. When inactive occupies shallow depressions dug at base of bush or cactus; sometimes in underground burrow or under object. Eggs are laid in nests dug in soil near or under bushes.	Not likely; preferred habitat of brush and cactus not abundant on-site.	Not likely to adversely affect

Attachment B
USFWS Resources Information

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
Phone: (512) 490-0057 Fax: (512) 490-0974
http://www.fws.gov/southwest/es/AustinTexas/
http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

In Reply Refer To: October 27, 2020
Consultation Code: 02ETAU00-2021-SLI-0154
Event Code: 02ETAU00-2021-E-00310
Project Name: MITCHELL LAKE WETLANDS WATER QUALITY TREATMENT INITIATIVES PROJECT

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that *may* occur within the county of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Please note that new information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Also note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq*.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of federally listed as threatened

or endangered species and to determine whether projects may affect these species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

While a Federal agency may designate a non-Federal representative to conduct informal consultation or prepare a biological assessment, the Federal Agency must notify the Service in writing of any such designation. The Federal agency shall also independently review and evaluate the scope and content of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by a federally funded, permitted or authorized activity, the agency is required to consult with the Service pursuant to 50 CFR 402. The following definitions are provided to assist you in reaching a determination:

- *No effect* - the proposed action will not affect federally listed species or critical habitat. A "no effect" determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.
- *May affect, but is not likely to adversely affect* - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effect. The Federal agency or the designated non-Federal representative should consult with the Service to seek written concurrence that adverse effects are not likely. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.
- *Is likely to adversely affect* - adverse effects to listed species may occur as a direct or indirect result of the proposed action. For this determination, the effect of the action is neither discountable nor insignificant. If the overall effect of the proposed action is beneficial to the listed species but the action is also likely to cause some adverse effects to individuals of that species, then the proposed action "is likely to adversely affect" the listed species. The analysis should consider all interrelated and interdependent actions. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal section 7 consultation with our office.

Regardless of the determination, the Service recommends that the Federal agency maintain a complete record of the evaluation, including steps leading to the determination of effect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF.

Migratory Birds

For projects that may affect migratory birds, the Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of these species. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Migratory birds may nest in trees, brushy areas, or other areas of suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals, nests, or eggs. If project activities must be conducted during this time, we recommend surveying for nests prior to conducting work. If a nest is found, and if possible, the Service recommends a buffer of vegetation remain around the nest until the young have fledged or the nest is abandoned.

For additional information concerning the MBTA and recommendations to reduce impacts to migratory birds please contact the U.S. Fish and Wildlife Service Migratory Birds Office, 500 Gold Ave. SW, Albuquerque, NM 87102. A list of migratory birds may be viewed at https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php. Guidance for minimizing impacts to migratory birds for projects including communications towers can be found at: https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/communication-towers.php. Additionally, wind energy projects should follow the wind energy guidelines

https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/wind-energy.php) for minimizing impacts to migratory birds and bats.

Finally, please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/guidance-documents/eagles.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Austin Ecological Services Field Office
10711 Burnet Road, Suite 200
Austin, TX 78758-4460
(512) 490-0057

Project Summary

Consultation Code: 02ETAU00-2021-SLI-0154

Event Code: 02ETAU00-2021-E-00310

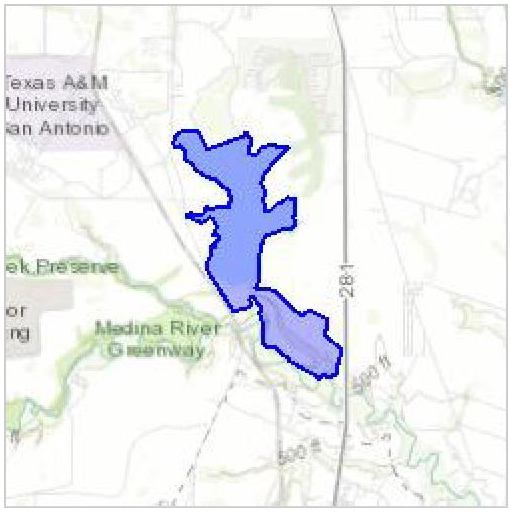
Project Name: MITCHELL LAKE WETLANDS WATER QUALITY TREATMENT INITIATIVES PROJECT

Project Type: WATER QUALITY MODIFICATION

Project Description: San Antonio, Bexar County, Texas. Approximately 975 acres.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/29.275211197000154N98.49164771822547W



Counties: Bexar, TX

Endangered Species Act Species

There is a total of 24 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 3 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Golden-cheeked Warbler (=wood) *Dendroica chrysoparia*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/33	
Least Tern *Sterna antillarum*	Endangered
Population: interior pop. No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/8505	
Piping Plover *Charadrius melodus*	Threatened
Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location is outside the critical habitat. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	
Red Knot *Calidris canutus rufa*	Threatened
No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	
Whooping Crane *Grus americana*	Endangered
Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	

Amphibians

NAME	STATUS
San Marcos Salamander *Eurycea nana*	Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6374	
Texas Blind Salamander *Typhlomolge rathbuni*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5130	

Fishes

NAME	STATUS
Fountain Darter *Etheostoma fonticola*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5858

Clams

NAME	STATUS
Texas Fatmucket *Lampsilis bracteata*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9041

Texas Pimpleback *Quadrula petrina*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8966

Insects

NAME	STATUS
[no Common Name] Beetle *Rhadine exilis*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/6942

[no Common Name] Beetle *Rhadine infernalis*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/3804

Comal Springs Dryopid Beetle *Stygoparnus comalensis*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/7175

Comal Springs Riffle Beetle *Heterelmis comalensis*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/3403

Helotes Mold Beetle *Batrisodes venyivi*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/1149

Arachnids

NAME	STATUS
Braken Bat Cave Meshweaver *Cicurina venii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7900	Endangered
Cokendolpher Cave Harvestman *Texella cokendolpheri* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/676	Endangered
Government Canyon Bat Cave Meshweaver *Cicurina vespera* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7037	Endangered
Government Canyon Bat Cave Spider *Neoleptoneta microps* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/553	Endangered
Madla Cave Meshweaver *Cicurina madla* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2467	Endangered
Robber Baron Cave Meshweaver *Cicurina baronia* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2361	Endangered

Crustaceans

NAME	STATUS
Peck's Cave Amphipod *Stygobromus (=Stygonectes) pecki* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8575	Endangered

Flowering Plants

NAME	STATUS
Bracted Twistflower *Streptanthus bracteatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2856	Candidate
Texas Wild-rice *Zizania texana* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/805	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Attachment C
TPWD Rare Species Reports

Last Update: 8/25/2020

BEXAR COUNTY

AMPHIBIANS

Cascade Caverns salamander *Eurycea latitans*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S2

Mexican treefrog *Smilisca baudinii*

Terrestrial and aquatic: Terrestrial habitas used include forested and brush around water bodies. Aquatic habitast used can any any body of water but preferred breeding sites are small, ephemeral wetlands.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

Strecker's chorus frog *Pseudacris streckeri*

Terrestrial and aquatic: Wooded floodplains and flats, prairies, cultivated fields and marshes. Likes sandy substrates.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

Texas salamander *Eurycea neotenes*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status:	State Status: T	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1S2

Valdina Farms sinkhole salamander *Eurycea troglodytes*

Aquatic; springs, streams and caves with rocky or cobble beds.

Federal Status:	State Status:	SGCN: N
Endemic: Y	Global Rank: G3	State Rank: S3S4

Woodhouse's toad *Anaxyrus woodhousii*

Terrestrial and aquatic: A wide variety of terrestrial habitats are used by this species, including forests, grasslands, and barrier island sand dunes. Aquatic habitats are equally varied.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: SU

ARACHNIDS

Braken Bat Cave meshweaver *Cicurina venii*

Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

BEXAR COUNTY

ARACHNIDS

Cokendolpher Cave harvestman *Texella cokendolpheri*

Small, eyeless harvestman; karst features in north and northwest Bexar County

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Government Canyon Bat Cave meshweaver *Cicurina vespera*

Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Government Canyon Bat Cave spider *Neoleptoneta microps*

Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Madla Cave meshweaver *Cicurina madla*

Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

No accepted common name *Speodesmus reddelli*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

No accepted common name *Tartarocreagris amblyopa*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

No accepted common name *Tartarocreagris reyesi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: GNR	State Rank: S1

Robber Baron Cave meshweaver *Cicurina baronia*

Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County

BEXAR COUNTY

ARACHNIDS

Federal Status: LE | State Status: | SGCN: Y
Endemic: Y | Global Rank: G1 | State Rank: S1

ARTHROPODS

No accepted common name *Speodesmus falcatus*

Habitat description is not available at this time.

Federal Status: | State Status: | SGCN: Y
Endemic: | Global Rank: GNR | State Rank: SNR

No accepted common name *Speodesmus ivyi*

Habitat description is not available at this time.

Federal Status: | State Status: | SGCN: Y
Endemic: | Global Rank: GNR | State Rank: SNR

BIRDS

bald eagle *Haliaeetus leucocephalus*

Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G5 | State Rank: S3B,S3N

black-capped vireo *Vireo atricapilla*

Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G3 | State Rank: S3B

Franklin's gull *Leucophaeus pipixcan*

This species is only a spring and fall migrant throughout Texas. It does not breed in or near Texas. Winter records are unusual consisting of one or a few individuals at a given site (especially along the Gulf coastline). During migration, these gulls fly during daylight hours but often come down to wetlands, lake shore, or islands to roost for the night.

Federal Status: | State Status: | SGCN: Y
Endemic: N | Global Rank: G5 | State Rank: S2N

BEXAR COUNTY

BIRDS

golden-cheeked warbler *Setophaga chrysoparia*

Ashe juniper in mixed stands with various oaks (Quercus spp.). Edges of cedar brakes. Dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2S3B

interior least tern *Sternula antillarum athalassos*

Sand beaches, flats, bays, inlets, lagoons, islands. Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G4T3Q	State Rank: S1B

mountain plover *Charadrius montanus*

Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

piping plover *Charadrius melodus*

Beaches, sandflats, and dunes along Gulf Coast beaches and adjacent offshore islands. Also spoil islands in the Intracoastal Waterway. Based on the November 30, 1992 Section 6 Job No. 9.1, Piping Plover and Snowy Plover Winter Habitat Status Survey, algal flats appear to be the highest quality habitat. Some of the most important aspects of algal flats are their relative inaccessibility and their continuous availability throughout all tidal conditions. Sand flats often appear to be preferred over algal flats when both are available, but large portions of sand flats along the Texas coast are available only during low-very low tides and are often completely unavailable during extreme high tides or strong north winds. Beaches appear to serve as a secondary habitat to the flats associated with the primary bays, lagoons, and inter-island passes. Beaches are rarely used on the southern Texas coast, where bayside habitat is always available, and are abandoned as bayside habitats become available on the central and northern coast. However, beaches are probably a vital habitat along the central and northern coast (i.e. north of Padre Island) during periods of extreme high tides that cover the flats. Optimal site characteristics appear to be large in area, sparsely vegetated, continuously available or in close proximity to secondary habitat, and with limited human disturbance.

Federal Status: LT	State Status: T	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2N

reddish egret *Egretta rufescens*

Resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal islands in brushy thickets of yucca and prickly pear

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S2B

BEXAR COUNTY

BIRDS

tropical parula *Setophaga pitiayumi*

Semi-tropical evergreen woodland along rivers and resacas. Texas ebony, anacua and other trees with epiphytic plants hanging from them. Dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeding April to July.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3B

western burrowing owl *Athene cunicularia hypugaea*

Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4T4	State Rank: S2

white-faced ibis *Plegadis chihi*

Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; currently confined to near-coastal rookeries in so-called hog-wallow prairies. Nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4B

whooping crane *Grus americana*

Small ponds, marshes, and flooded grain fields for both roosting and foraging. Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.

Federal Status: LE	State Status: E	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1N

wood stork *Mycteria americana*

Prefers to nest in large tracts of baldcypress (Taxodium distichum) or red mangrove (Rhizophora mangle); forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: SHB,S2N

zone-tailed hawk *Buteo albonotatus*

Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3B

BEXAR COUNTY

CRUSTACEANS

a cave obligate isopod *Speocirolana hardeni*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S2

Cascade Cave amphipod *Stygobromus dejectus*

Subaquatic crustacean; subterranean obligate; in pools

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1G2	State Rank: S1

Ezell's Cave amphipod *Stygobromus flagellatus*

Known only from artesian wells

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S3

No accepted common name *Mexiweckelia hardeni*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S2

FISH

Guadalupe bass *Micropterus treculii*

Endemic to the streams of the northern and eastern Edwards Plateau including portions of the Brazos, Colorado, Guadalupe, and San Antonio basins; species also found outside of the Edwards Plateau streams in decreased abundance, primarily in the lower Colorado River; two introduced populations have been established in the Nueces River system. A pure population was re-established in a portion of the Blanco River in 2014. Species prefers lentic environments but commonly taken in flowing water; numerous smaller fish occur in rapids, many times near eddies; large individuals found mainly in riffle tail races; usually found in spring-fed streams having clear water and relatively consistent temperatures.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

river darter *Percina shumardi*

In Texas limited to eastern streams including Red southward to the Neches, and a disjunct population in the Guadalupe and San Antonio river systems east of the Balcones Escarpment. Confined to large rivers and lower parts of major tributaries; almost
almost invariably found in deep chutes and riffles where current is swift and bottom composed of coarse gravel or rock.

Federal Status:	State Status:	SGCN: N
Endemic:	Global Rank: G5	State Rank: S4

BEXAR COUNTY

FISH

Texas shiner *Notropis amabilis*

In Texas, it is found primarily in Edwards Plateau streams from the San Gabriel River in the east to the Pecos River in the west. Typical habitat includes rocky or sandy runs, as well as pools.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G4 State Rank: S4

toothless blindcat *Trogloglanis pattersoni*

Restricted to five artesian wells penetrating the San Antonio Pool of the Edwards Aquifer; found at depths of 305-582 m.

Federal Status: State Status: T SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

widemouth blindcat *Satan eurystomus*

Restricted to five artesian wells penetrating the San Antonio Pool of the Edwards Aquifer; found at depths of 305-582 m.

Federal Status: State Status: T SGCN: Y
Endemic: Y Global Rank: G1G2 State Rank: S1

INSECTS

a caddisfly *Nectopsyche texana*

Riparian, Riverine

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G1G3 State Rank: S2?

a cave obligate beetle *Batrisodes shadeae*

This species was recently described from a single cave in Bexar Co., Texas (Chandler et al., 2009).

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G1 State Rank: SNR

a ground beetle *Rhadine exilis*

Small, essentially eyeless ground beetle; karst features in north and northwest Bexar County

Federal Status: LE State Status: SGCN: Y
Endemic: Y Global Rank: G3 State Rank: S1

a ground beetle *Rhadine infernalis*

Small, essentially eyeless ground beetle; karst features in north and northwest Bexar County

Federal Status: LE State Status: SGCN: Y
Endemic: Y Global Rank: G2G3 State Rank: S1

BEXAR COUNTY

INSECTS

a Katydid *Dichopetala catinata*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

a Katydid *Dichopetala seeversi*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

American bumblebee *Bombus pensylvanicus*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G3G4	State Rank: SNR

Helotes mold beetle *Batrisodes venyivi*

Small, eyeless mold beetle; karst features in northwestern Bexar County and northeastern Medina County

Federal Status: LE	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

Manfreda giant-skipper *Stallingsia maculosus*

Most skippers are small and stout-bodied; name derives from fast, erratic flight; at rest most skippers hold front and hind wings at different angles; skipper larvae are smooth, with the head and neck constricted; skipper larvae usually feed inside a leaf shelter and pupate in a cocoon made of leaves fastened together with silk

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G1	State Rank: S1

No accepted common name *Bombus variabilis*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G1G2	State Rank: SNR

No accepted common name *Cotinis boylei*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: GNR	State Rank: SNR

BEXAR COUNTY

INSECTS

No accepted common name *Cotalpa conclamara*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Lymantes nadineae*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Megachile parksi*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GH State Rank: SNR

No accepted common name *Rhadine bullis*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Global Rank: GNR State Rank: SNR

No accepted common name *Pygarctia lorula*

Habitat description is not available at this time.

Federal Status: State Status: SGCN: Y

Endemic: Y Global Rank: G2G3 State Rank: S2?

MAMMALS

American badger *Taxidea taxus*

Generalist. Prefers areas with soft soils that sustain ground squirrels for food. When inactive, occupies underground burrow. Young are born in underground burrows.

Federal Status: State Status: SGCN: Y

Endemic: N Global Rank: G5 State Rank: S5

big brown bat *Eptesicus fuscus*

Any wooded areas or woodlands except south Texas. Riparian areas in west Texas.

Federal Status: State Status: SGCN: Y

Endemic: N Global Rank: G5 State Rank: S5

BEXAR COUNTY

MAMMALS

big free-tailed bat *Nyctinomops macrotis*

Habitat data sparse but records indicate that species prefers to roost in crevices and cracks in high canyon walls, but will use buildings, as well; reproduction data sparse, gives birth to single offspring late June-early July; females gather in nursery colonies; winter habits undetermined, but may hibernate in the Trans-Pecos; opportunistic insectivore

Federal Status:	State Status:	SGCN: Y
Endemic:	Global Rank: G5	State Rank: S3

black bear *Ursus americanus*

Generalist. Historically found throughout Texas. In Chisos, prefers higher elevations where pinyon-oaks predominate; also occasionally sighted in desert scrub of Trans-Pecos (Black Gap Wildlife Management Area) and Edwards Plateau in juniper-oak habitat. For ssp. luteolus, bottomland hardwoods, floodplain forests, upland hardwoods with mixed pine; marsh. Bottomland hardwoods and large tracts of inaccessible forested areas.

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S3

black-tailed prairie dog *Cynomys ludovicianus*

Dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle; live in large family groups

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S3

cave myotis bat *Myotis velifer*

Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (Hirundo pyrrhonota) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4G5	State Rank: S4

eastern red bat *Lasiurus borealis*

Found in a variety of habitats in Texas. Usually associated with wooded areas. Found in towns especially during migration.

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G3G4	State Rank: S4

eastern spotted skunk *Spilogale putorius*

Generalist; open fields prairies, croplands, fence rows, farmyards, forest edges & woodlands. Prefer wooded, brushy areas & tallgrass prairies. S.p. ssp. interrupta found in wooded areas and tallgrass prairies, preferring rocky canyons and outcrops when such sites are available.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S1S3

BEXAR COUNTY

MAMMALS

hoary bat *Lasiurus cinereus*

Known from montane and riparian woodland in Trans-Pecos, forests and woods in east and central Texas.

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G3G4	State Rank: S4

long-tailed weasel *Mustela frenata*

Includes brushlands, fence rows, upland woods and bottomland hardwoods, forest edges & rocky desert scrub. Usually live close to water.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

Mexican free-tailed bat *Tadarida brasiliensis*

Roosts in buildings in east Texas. Largest maternity roosts are in limestone caves on the Edwards Plateau. Found in all habitats, forest to desert.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

mink *Neovison vison*

Intimately associated with water; coastal swamps & marshes, wooded riparian zones, edges of lakes. Prefer floodplains.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

mountain lion *Puma concolor*

Generalist; found in a wide range of habitats statewide. Found most frequently in rugged mountains & riparian zones.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S2S3

plains spotted skunk *Spilogale putorius interrupta*

Generalist; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie

Federal Status:	State Status:	SGCN: N
Endemic: N	Global Rank: G4T4	State Rank: S1S3

swamp rabbit *Sylvilagus aquaticus*

Primarily found in lowland areas near water including: cypress bogs and marshes, floodplains, creeks and rivers.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

BEXAR COUNTY

MAMMALS

thirteen-lined ground squirrel *Ictidomys tridecemlineatus*

Prefers short grass prairies with deep soils for burrowing. Frequently found in grazed ranchland, mowed pastures, and golf courses.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

tricolored bat *Perimyotis subflavus*

Forest, woodland and riparian areas are important. Caves are very important to this species.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2G3	State Rank: S3S4

western hog-nosed skunk *Conepatus leuconotus*

Habitats include woodlands, grasslands & deserts, to 7200 feet, most common in rugged, rocky canyon country; little is known about the habitat of the ssp. telmalestes

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G4	State Rank: S4

western spotted skunk *Spilogale gracilis*

Brushy canyons, rocky outcrops (rimrock) on hillsides and walls of canyons. In semi-arid brushlands in U.S., in wet tropical forests in Mexico. When inactive or bearing young, occupies den in rocks, burrow, hollow log, brush pile, or under building.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

white-nosed coati *Nasua narica*

Woodlands, riparian corridors and canyons.Most individuals in Texas probably transients from Mexico; diurnal and crepuscular; very sociable; forages on ground and in trees; omnivorous; may be susceptible to hunting, trapping, and pet trade

Federal Status:	State Status: T	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S1

MOLLUSKS

mimic cavesnail *Phreatodrobia imitata*

Subaquatic; only known from two wells penetrating the Edwards Aquifer

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

No accepted common name *Phreatodrobia conica*

Habitat description is not available at this time.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S2

BEXAR COUNTY

REPTILES

Cagle's map turtle *Graptemys caglei*

Aquatic: shallow water with swift to moderate flow and gravel or cobble bottom, connected by deeper pools with a slower flow rate and a silt or mud bottom; gravel bar riffles and transition areas between riffles and pools especially important in providing insect prey items; nests on gently sloping sand banks within ca. 30 feet of waters edge.

Federal Status: State Status: T SGCN: Y
Endemic: Y Global Rank: G3 State Rank: S1

eastern box turtle *Terrapene carolina*

Terrestrial: Eastern box turtles inhabit forests, fields, forest-brush, and forest-field ecotones. In some areas they move seasonally from fields in spring to forest in summer. They commonly enters pools of shallow water in summer. For shelter, they burrow into loose soil, debris, mud, old stump holes, or under leaf litter. They can successfully hibernate in sites that may experience subfreezing temperatures.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S3

keeled earless lizard *Holbrookia propinqua*

Terrestrial: Habitats include coastal dunes, barrier islands, and other sandy areas (Axtell 1983). Although it occurs well inland, this species is most abundant on coastal dunes, were it seeks shelter in the burrows of small mammals or crabs (Bartlett and Bartlett 1999).

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G4 State Rank: S3

plateau spot-tailed earless lizard *Holbrookia lacerata*

Terrestrial: Habitats include moderately open prairie-brushland regions, particularly fairly flat areas free of vegetation or other obstructions (e.g., open meadows, old and new fields, graded roadways, cleared and disturbed areas, prairie savanna, and active agriculture including row crops); also, oak-juniper woodlands and mesquite-prickly pear associations (Axtell 1968, Bartlett and Bartlett 1999).

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: GNR State Rank: S2

slender glass lizard *Ophisaurus attenuatus*

Terrestrial: Habitats include open grassland, prairie, woodland edge, open woodland, oak savannas, longleaf pine flatwoods, scrubby areas, fallow fields, and areas near streams and ponds, often in habitats with sandy soil.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S3

Tamaulipan spot-tailed earless lizard *Holbrookia subcaudalis*

Terrestrial: Habitats include moderately open prairie-brushland regions, particularly fairly flat areas free of vegetation or other obstructions (e.g., open meadows, old and new fields, graded roadways, cleared and disturbed areas, prairie savanna, and active agriculture including row crops); also, oak-juniper woodlands and mesquite-prickly pear associations (Axtell 1968, Bartlett and Bartlett 1999).

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: GNR State Rank: S2

Texas garter snake *Thamnophis sirtalis annectens*

BEXAR COUNTY

REPTILES

Terrestrial and aquatic: Habitats used include the grasslands and modified open areas in the vicinity of aquatic features, such as ponds, streams o marshes. Damp soils and debris for cover are thought to be critical.

Federal Status: State Status: SGCN: Y
Endemic: Y Global Rank: G5T4 State Rank: S1

Texas horned lizard *Phrynosoma cornutum*

Terrestrial: Open habitats with sparse vegetation, including grass, prairie, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive. Occurs to 6000 feet, but largely limited below the pinyon-juniper zone on mountains in the Big Bend area.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G4G5 State Rank: S3

Texas indigo snake *Drymarchon melanurus erebennus*

Terrestrial: Thornbush-chaparral woodland of south Texas, in particular dense riparian corridors.Can do well in suburban and irrigated croplands. Requires moist microhabitats, such as rodent burrows, for shelter.

Federal Status: State Status: SGCN: Y
Endemic: Global Rank: G5T4 State Rank: S4

Texas tortoise *Gopherus berlandieri*

Terrestrial: Open scrub woods, arid brush, lomas, grass-cactus association; often in areas with sandy well-drained soils. When inactive occupies shallow depressions dug at base of bush or cactus; sometimes in underground burrow or under object. Eggs are laid in nests dug in soil near or under bushes.

Federal Status: State Status: T SGCN: Y
Endemic: N Global Rank: G4 State Rank: S2

timber (canebrake) rattlesnake *Crotalus horridus*

Terrestrial: Swamps, floodplains, upland pine and deciduous woodland, riparian zones, abandoned farmland. Limestone bluffs, sandy soil or black clay. Prefers dense ground cover, i.e. grapevines, palmetto.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G4 State Rank: S4

western box turtle *Terrapene ornata*

Terrestrial: Ornate or western box trutles inhabit prairie grassland, pasture, fields, sandhills, and open woodland. They are essentially terrestrial but sometimes enter slow, shallow streams and creek pools. For shelter, they burrow into soil (e.g., under plants such as yucca) (Converse et al. 2002) or enter burrows made by other species.

Federal Status: State Status: SGCN: Y
Endemic: N Global Rank: G5 State Rank: S3

BEXAR COUNTY

REPTILES

western hognose snake *Heterodon nasicus*

Terrestrial: Shortgrass or mixed grass prairie, with gravel or sandy soils. Often found associated with draws, floodplains, and more mesic habitats within the arid landscape. Frequently occurs in shrub encroached grasslands.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S4

western rattlesnake *Crotalus viridis*

Terrestrial: Dry desert and prairie grasslands, shrub desert rocky hillsides; edges of arid and semi-arid river breaks.

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G5	State Rank: S5

PLANTS

awnless leastdaisy *Chaetopappa imberbis*

In woodlands on lomas of Carrizo sand (TEX-LL specimens Carr 23875, 12507). Mar- May.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

big red sage *Salvia pentstemonoides*

Moist to seasonally wet, steep limestone outcrops on seeps within canyons or along creek banks; occasionally on clayey to silty soils of creek banks and terraces, in partial shade to full sun; basal leaves conspicuous for much of the year; flowering June-October

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

bigflower cornsalad *Valerianella stenocarpa*

Usually along creekbeds or in vernally moist grassy open areas (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

bracted twistflower *Streptanthus bracteatus*

Shallow, well-drained gravelly clays and clay loams over limestone in oak juniper woodlands and associated openings, on steep to moderate slopes and in canyon bottoms; several known soils include Tarrant, Brackett, or Speck over Edwards, Glen Rose, and Walnut geologic formations; populations fluctuate widely from year to year, depending on winter rainfall; flowering mid April-late May, fruit matures and foliage withers by early summer

Federal Status: C	State Status:	SGCN: Y
Endemic: Y	Global Rank: G1	State Rank: S1

BEXAR COUNTY

PLANTS

bristle nailwort *Paronychia setacea*

Flowering vascular plant endemic to eastern southcentral Texas, occurring in sandy soils

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S2

Buckley tridens *Tridens buckleyanus*

Occurs in juniper-oak woodlands on rocky limestone slopes; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Burridge greenthread *Thelesperma burridgeanum*

Sandy open areas; Annual; Flowering March-Nov; Fruiting March-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Correll's false dragon-head *Physostegia correllii*

Wet, silty clay loams on streamsides, in creek beds, irrigation channels and roadside drainage ditches; or seepy, mucky, sometimes gravelly soils along riverbanks or small islands in the Rio Grande; or underlain by Austin Chalk limestone along gently flowing spring-fed creek in central Texas; flowering May-September

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2	State Rank: S2

Elmendorf's onion *Allium elmendorfii*

Grassland openings in oak woodlands on deep, loose, well-drained sands; in Coastal Bend, on Pleistocene barrier island ridges and Holocene Sand Sheet that support live oak woodlands; to the north it occurs in post oak-black hickory-live oak woodlands over Queen City and similar Eocene formations; one anomalous specimen found on Llano Uplift in wet pockets of granitic loam; Perennial; Flowering March-April, May

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

Glass Mountains coral-root *Hexalectris nitida*

Apparently rare in mixed woodlands in canyons in the mountains of the Brewster County, but encountered with regularity, albeit in small numbers, under Juniperus ashei in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain; Perennial; Flowering June-Sept; Fruiting July-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

gravelbar brickellbush *Brickellia dentata*

Essentially restricted to frequently-scoured gravelly alluvial beds in creek and river bottoms; Perennial; Flowering June-Nov; Fruiting June-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

BEXAR COUNTY

PLANTS

hairy sycamore-leaf snowbell *Styrax platanifolius ssp. stellatus*

Rare throughout range, in habitats similar to those of var. platanifolius - usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture; Perennial; Flowering April-Oct; Fruiting May-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T3	State Rank: S3

Heller's marbleseed *Onosmodium helleri*

Occurs in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons; Perennial; Flowering March-May

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Hill Country wild-mercury *Argythamnia aphoroides*

Mostly in bluestem-grama grasslands associated with plateau live oak woodlands on shallow to moderately deep clays and clay loams over limestone on rolling uplands, also in partial shade of oak-juniper woodlands in gravelly soils on rocky limestone slopes; Perennial; Flowering April-May with fruit persisting until midsummer

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2G3	State Rank: S3

low spurge *Euphorbia peplidion*

Occurs in a variety of vernally-moist situations in a number of natural regions; Annual; Flowering Feb-April; Fruiting March-April

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

narrowleaf brickellbush *Brickellia eupatorioides var. gracillima*

Moist to dry gravelly alluvial soils along riverbanks but also on limestone slopes; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T3	State Rank: S3

net-leaf bundleflower *Desmanthus reticulatus*

Mostly on clay prairies of the coastal plain of central and south Texas; Perennial; Flowering April-July; Fruiting April-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

Osage Plains false foxglove *Agalinis densiflora*

Most records are from grasslands on shallow, gravelly, well drained, calcareous soils; Prairies, dry limestone soils; Annual; Flowering Aug-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S2

Parks' jointweed *Polygonella parksii*

BEXAR COUNTY

PLANTS

Mostly found on deep, loose, whitish sand blowouts (unstable, deep, xeric, sandhill barrens) in Post Oak Savanna landscapes over the Carrizo and Sparta formations; also occurs in early successional grasslands, along right-of-ways, and on mechanically disturbed areas; flowering June-late October or September-November

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

Plateau loosestrife *Lythrum ovalifolium*

Banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain; Perennial; Flowering/Fruiting April-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3G4	State Rank: S3S4

plateau milkvine *Matelea edwardsensis*

Occurs in various types of juniper-oak and oak-juniper woodlands; Perennial; Flowering March-Oct; Fruiting May-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

sandhill woolywhite *Hymenopappus carrizoanus*

Disturbed or open areas in grasslands and post oak woodlands on deep sands derived from the Carrizo Sand and similar Eocene formations; flowering April-June

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G2	State Rank: S2

Siler's huaco *Manfreda sileri*

Rare in a variety of grasslands and shrublands on dry sites; Perennial; Flowering April-July; Fruiting June-July

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

South Texas rushpea *Caesalpinia phyllanthoides*

Tamaulipan thorn shrublands or grasslands on very shallow sandy to clayey soils over calcareous sandstone and caliche; flowering in spring, sometimes later in growing season, perhaps in response to rainfall

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G2?	State Rank: S1

spreading leastdaisy *Chaetopappa effusa*

Limestone cliffs, ledges, bluffs, steep hillsides, sometimes in seepy areas, oak-juniper, oak, or mixed deciduous woods, 300-500 m elevation; Perennial; Flowering (May) July-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

sycamore-leaf snowbell *Styrax platanifolius ssp. platanifolius*

BEXAR COUNTY

PLANTS

Rare throughout range, usually in oak-juniper woodlands on steep rocky banks and ledges along intermittent or perennial streams, rarely far from some reliable source of moisture; Perennial; Flowering April-May; Fruiting May-Aug.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T3	State Rank: S3

Texas almond *Prunus minutiflora*

Wide-ranging but scarce, in a variety of grassland and shrubland situations, mostly on calcareous soils underlain by limestone but occasionally in sandier neutral soils underlain by granite; Perennial; Flowering Feb-May and Oct; Fruiting Feb-Sept

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Texas amorpha *Amorpha roemeriana*

Juniper-oak woodlands or shrublands on rocky limestone slopes, sometimes on dry shelves above creeks; Perennial; Flowering May-June; Fruiting June-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

Texas fescue *Festuca versuta*

Occurs in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes; Perennial; Flowering/Fruiting April-June

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

Texas peachbush *Prunus texana*

Occurs at scattered sites in various well drained sandy situations; deep sand, plains and sand hills, grasslands, oak woods, 0-200 m elevation; Perennial; Flowering Feb-Mar; Fruiting Apr-Jun

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S3S4

Texas seymeria *Seymeria texana*

Found primarily in grassy openings in juniper-oak woodlands on dry rocky slopes but sometimes on rock outcrops in shaded canyons; Annual; Flowering May-Nov; Fruiting July-Nov

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3

threeflower penstemon *Penstemon triflorus ssp. triflorus*

Occurs sparingly on rock outcrops and in grasslands associated with juniper-oak woodlands (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3T3	State Rank: S3

tree dodder *Cuscuta exaltata*

BEXAR COUNTY

PLANTS

Parasitic on various Quercus, Juglans, Rhus, Vitis, Ulmus, and Diospyros species as well as Acacia berlandieri and other woody plants; Annual; Flowering May-Oct; Fruiting July-Oct

Federal Status:	State Status:	SGCN: Y
Endemic: N	Global Rank: G3	State Rank: S3

turnip-rootscurfpea *Pediomelum cyphocalyx*

Grasslands and openings in juniper-oak woodlands on limestone substrates on the Edwards Plateau and in north-central Texas (Carr 2015).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3G4	State Rank: S2S3

woolly butterfly-weed *Gaura villosa ssp. parksii*

Flats and hills of red sand of Rio Grande Plains (Raven and Gregory 1972). April-Oct.

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G5T3	State Rank: S3

Wright's milkvetch *Astragalus wrightii*

On sandy or gravelly soils; April (Diggs et al. 1999).

Federal Status:	State Status:	SGCN: Y
Endemic: Y	Global Rank: G3	State Rank: S3