
Threatened/Endangered Species Assessment



South of Mitchell Lake Dam

San Antonio, Bexar County, Texas

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INTRODUCTION

The project site for the proposed Mitchell Lake Wetlands Quality Treatment Initiatives Project is located in south Bexar County, Texas. The surface of Mitchell Lake covers approximately 670 acres at a normal water level elevation of 520.4 feet above mean sea level (feet msl). 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.

The lake, especially the “polder complex” of open waters and shallow, emergent wetlands, is a nationally significant water body with unique, diverse ecosystems and avian fauna populations. Located on the North American Central Flyway, migrating birds frequently rest and feed at Mitchell Lake. More than 300 migrant bird species, including two federally listed species [Interior Least Tern (*Sterna antillarum athalassos*) (Endangered) and the Piping Plover (*Charadrius melodus*) (Threatened)] 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, the City of San Antonio (COSA) designated it as a Refuge for Shore Birds and Water Fowl. In 2004, the San Antonio Water System (SAWS) entered into an operating agreement with the National Audubon Society thus establishing the first Audubon Center in Texas.

SAWS is exploring the concept of constructing approximately 115 acres of treatment wetlands downstream of the Mitchell Lake dam to improve the quality of water discharged from the lake. Under this approach, the lake-wetland system would operate at a relatively constant flow rate through the coordinated management of inflows from stormwater runoff and discharges from the Leon Creek Water Recycling Center (LCWRC) into the lake and discharges from the lake to the constructed wetlands. During dry weather, flow from LCWRC would be pumped to the lake, as necessary, to maintain lake levels at a minimum water elevation of 517.5 ft msl and to provide for a minimal amount of base flow through the proposed constructed wetlands located below the dam. Outflow from the wetland would be discharged to either Cottonmouth Creek or to the Medina River. The spillway of the Mitchell Lake dam would be raised to a proposed elevation of 525.8 ft msl. Stormwater runoff would be managed in the lake between 517.5 ft msl and 525.8 ft msl. After receiving stormwater inflow, the storage capacity of the lake would be restored by increasing the flow to the downstream wetlands whenever the lake level is above 517.5 ft msl.

Alan Plummer Associates, Inc. (APAI) is assisting SAWS in the evaluation of the proposed lake-wetland system. This is being conducted in two phases of work. Phase 1 includes a regulatory evaluation; preliminary studies related to the dam and operation of the lake-wetland system; a pilot wetland study; and exploration of funding and community partnership opportunities. The pilot wetland, which is anticipated to be 2-to-3 acres in size, would be constructed in early 2019 and operated for a minimum of 12 months. The pilot-scale wetland would be a free-water-surface wetland, which would be dominated by emergent macrophytes. During this study, water would be pumped from the lake and allowed to pass through the pilot wetland. Water discharged from the wetland would flow by gravity back into the lake. Water quality would be monitored throughout the pilot test period. Results of the study will be completed by late 2020. Based on the outcome of the Phase 1 studies, SAWS may elect to proceed to Phase 2, which would include modification of the dam and construction of a group of downstream treatment wetlands. Current lists of federal listed threatened and endangered species were obtained from the U.S. Fish and Wildlife Service (USFWS), and state listed species were obtained from Texas Parks & Wildlife Department (last revised 12/30/2016). Each of these species is considered as having the potential to occur in Bexar County.

THREATENED/ENDANGERED SPECIES ASSESSMENT

According to Karst Zone maps for the San Antonio area, the proposed project is outside of mapped karst habitat. Therefore, no karst survey is required.

The table below provides a list of federally listed species in Bexar County as well as information pertinent to each species and justification of No Effect (federal) or No Impact (state) findings.

Federally-Listed Threatened and Endangered Species

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present?	Species Affected?	Pertinent Information
Amphibians						
Cascade Caverns salamander <i>(Eurycea latitans complex)</i>		T	Endemic; subaquatic, springs and caves in Medina River, Guadalupe River, and Cibolo Creek watersheds within Edwards Aquifer area	No	No Impact	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.
Comal blind salamander <i>(Eurycea tridentifera)</i>		T	Endemic; semi-troglobitic; found in springs and waters of caves	No	No Impact	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.
Texas salamander <i>(Eurycea Neotenes)</i>		T	endemic; troglobitic; springs, seeps, cave streams, and creek headwaters; often hides under rocks and leaves in water; restricted to Helotes and Leon Creek drainages	No	No Impact	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.
Arachnids						
Bracken Bat Cave meshweaver <i>(Cicurina venii)</i>	LE		Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County	No	No Effect	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.
Cokendolpher cave harvestman <i>(Texella cokendolpheri)</i>	LE		Small, eyeless harvestman; karst features in north and northwest Bexar County	No	No Effect	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.
Government Canyon Bat Cave meshweaver <i>(Cicurina vespera)</i>	LE		Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County	No	No Effect	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present?	Species Affected?	Pertinent Information
Government Canyon Bat Cave spider <i>(Neoleptoneta microps)</i>	LE		Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County	No	No Effect	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.
Madla Cave meshweaver <i>(Cicurina madla)</i>	LE		Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County	No	No Effect	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.
Robber Baron Cave meshweaver <i>(Cicurina baronia)</i>	LE		Small, eyeless, or essentially eyeless spider; karst features in north and northwest Bexar County	No	No Effect	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.
Birds						
American Peregrine Falcon <i>(Falco peregrinus anatum)</i>	DL	T	Year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.	No	No Effect	Permanent habitat for this species is not present. Species is transient in Bexar County and wide-ranging. May occasionally use site for rest or forage.
Arctic Peregrine Falcon <i>(Falco peregrinus tundrius)</i>	DL		migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands	No	No Effect	Permanent habitat for this species is not present. Species is transient in Bexar County and wide-ranging. May occasionally use site for rest or forage.
Black-capped Vireo <i>(Vireo atricapilla)</i>	LE	E	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.	No	No Effect	Habitat conducive to this species is not present at the project site. Vegetation composition and structure preferred by this species is not present.

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present?	Species Affected?	Pertinent Information
Golden-cheeked Warbler (<i>Dendroica chrysoparia</i>)	LE	E	Juniper-oak woodlands; 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	No	No Effect	Habitat conducive to this species is not present at the project site. Vegetation composition and structure preferred by this species is not present.
Interior Least Tern (<i>Sterna antillarum athalassos</i>)	LD	D	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	No	No Effect	Suitable habitat not present on the site.
Mountain Plover (<i>Charadrius montanus</i>)		SGCN	breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous	Yes	No Impact	Habitat for this species is present. However, species is transient in Bexar County and wide-ranging. May occasionally use site for rest or forage.
Peregrine Falcon (<i>Falco peregrinus</i>)	DL	T	both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.	No	No Effect	Permanent habitat for this species is not present. Species is transient in Bexar County and wide-ranging. May occasionally use site for rest or forage.
Piping Plover (<i>Charadrius melodus</i>)	LE		Shorelines around small alkaline lakes, large reservoir beaches, river islands and adjacent sand pits, beaches on large lakes, industrial pond shorelines. Suitable breeding habitats are wide beaches (> 20 meters) with highly clumped vegetation, having less than 5 percent overall vegetation cover and/or with extensive gravel. Vegetation cover on nesting islands is generally less than 25 percent.	Yes	No Effect	Potential habitat is present on Mitchell Lake's beaches north of the spillway. The species may use this area for rest and forage, but no nests or individuals were observed during site reconnaissance and effects are not anticipated.
Red Knot (<i>Calidris canutus rufa</i>)	T		Red knots migrate long distances in flocks northward through the contiguous United States mainly April-June, southward July-October. Habitat: Primarily seacoasts on tidal flats and beaches, herbaceous wetland, and Tidal flat/shore.	No	No Effect	Suitable habitat not present. May occasionally use the site for rest or forage on Mitchell Lake upstream of the spillway.

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present?	Species Affected?	Pertinent Information
Sprague's Pipit <i>(Anthus spragueii)</i>		SGCN	Only in Texas during migration and winter, mid-September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges.	No	No Impact	Suitable habitat not present.
Western Burrowing Owl <i>(Athene cunicularia hypugaea)</i>		SGCN	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	Yes	No Impact	Habitat for this species is present. May occasionally use site for rest or forage. However, no nests or burrows were observed during site reconnaissance, and impacts to this species are not anticipated.
White-faced Ibis <i>(Plegadis chihi)</i>		T	prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats	Yes	No Impact	Potential habitat is present on Mitchell Lake's beaches north of the spillway. The species may use this area for rest and forage, but no nests or individuals were observed during site reconnaissance and impacts are not anticipated.
Whooping Crane <i>(Grus americana)</i>	LE	E	Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties	Yes	No Effect	Potential habitat is present on Mitchell Lake's beaches north of the spillway. The species may use this area for rest and forage, but no nests or individuals were observed during site reconnaissance and effects are not anticipated.
Wood Stork <i>(Mycteria Americana)</i>		T	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	Yes	No Impact	Potential habitat is present on Mitchell Lake's beaches north of the spillway. The species may use this area for rest and forage, but no nests or individuals were observed during site reconnaissance and impacts are not anticipated.

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present?	Species Affected?	Pertinent Information
Zone-tailed Hawk (<i>Buteo albonotatus</i>)		T	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	No	No Impact	Permanent habitat for this species is not present. Species is transient in Bexar County and wide-ranging. May occasionally use site for rest or forage.
Crustaceans						
A cave obligate crustacean (<i>Monodella texana</i>)		SGCN	Subaquatic, subterranean obligate; underground freshwater aquifers	No	No Impact	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.
Fishes						
Guadalupe bass (<i>Micropterus treculii</i>)		SGCN	Endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system	No	No Effect	Site contains perennial water body, but the watershed is not in the Edwards Plateau.
Toothless blindcat (<i>Trogloglanis pattersoni</i>)		T	Troglobitic, blind catfish endemic to the San Antonio Pool of the Edward's Aquifer	No	No Effect	Project impacts will be surficial in nature. No deep ground disturbance of aquifer impacts are proposed.
Widemouth blindcat (<i>Satan eurystomus</i>)		T	Troglobitic, blind catfish endemic to the San Antonio Pool of the Edward's Aquifer	No	No Effect	Project impacts will be surficial in nature. No deep ground disturbance of aquifer impacts are proposed.
Insects						
A ground beetle (<i>Rhadine exilis</i>)	LE		Small, essentially eyeless ground beetle; karst features in north and northwest Bexar County	No	No Effect	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.
A ground beetle (<i>Rhadine infernalis</i>)	LE		Small, essentially eyeless ground beetle; karst features in north and northwest Bexar County	No	No Effect	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.
Helotes mold beetle (<i>Batrisodes venyivi</i>)	LE		Small, eyeless mold beetle; karst features in northwestern Bexar County and northeastern Medina County	No	No Effect	The proposed project area is outside of mapped karst habitat and no karst features were observed during fieldwork. Habitat is not present.

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present?	Species Affected?	Pertinent Information
Manfreda giant-skipper (<i>Stallingsia maculosus</i>)		SGCN	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. Its habitat is subtropical thorn and pine forests.	No	No Impact	Habitat not present.
Mammals						
Black bear (<i>Ursus americanus</i>)		T	Bottomland hardwoods and large tracts of inaccessible forested areas	No	No Effect	Habitat not present.
Cave myotis bat (<i>Myotis velifer</i>)		SGCN	Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow (<i>Hirundo pyrrhonota</i>) 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	No	No Impact	Habitat not present.
Gray wolf (<i>Canis lupus</i>)	LE	E	Extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands	No	No Effect	Habitat not present. Extirpated in Texas.
Plains spotted skunk (<i>Spilogale putorius interrupta</i>)		SGCN	Catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie	Yes	No Impact	Habitat for the species is present on-site. However, impacts are not anticipated.
Red wolf (<i>Canis rufus</i>)	LE	E	Extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies	No	No Effect	Habitat not present. Extirpated in Texas.
Mollusks						
Golden orb (<i>Quadrula aurea</i>)	C	T	Sand and gravel in some locations and mud at others;	Yes	Unknown	The Medina River and Cottonmouth Creek are perennial waterbodies within the proposed project area. Should impacts be imparted on these waterbodies, a mussel survey should be conducted prior to work to ensure the species is not present.
Mimic cavesnail (<i>Phreatodrobia imitate</i>)		SGCN	Subaquatic; only known from two wells penetrating the Edwards Aquifer	No	No Impact	Habitat not present.
Reptiles						

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present?	Species Affected?	Pertinent Information
Spot-tailed earless lizard <i>(Holbrookia lacerate)</i>		SGCN	Central and southern Texas and adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other obstructions, including disturbed areas; eats small invertebrates; eggs laid underground	No	No Impact	Habitat not present.
Texas garter snake <i>(Thamnophis sirtalis annectens)</i>		SGCN	Wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August	Yes	No Impact	Habitat is present on-site. However, the project proposes to create wetlands which then provides additional habitat for the species.
Texas horned lizard <i>(Phrynosoma cornutum)</i>		T	Open, arid and semi-arid regions with sparse vegetation, including grass, 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; breeds March-September	No	No Impact	Habitat not present.
Texas indigo snake <i>(Drymarchon melanurus erebennus)</i>		T	Texas south of the Guadalupe River and Balcones Escarpment; thornbush-chaparral woodlands of south Texas, in particular dense riparian corridors; can do well in suburban and irrigated croplands if not molested or indirectly poisoned; requires moist microhabitats, such as rodent burrows, for shelter	Yes	No Impact	Habitat is present on-site. However, the project proposes to create wetlands which then provides additional habitat for the species.
Texas tortoise <i>Gopherus berlandieri</i>		T	Open brush with a grass understory is preferred; open grass and bare ground are avoided; when inactive occupies shallow depressions at base of bush or cactus, sometimes in underground burrows or under objects; longevity greater than 50 years; active March-November; breeds April-November	No	No Impact	Habitat not present.
Timber rattlesnake <i>(Crotalus horridus)</i>		T	Swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto	Yes	No Impact	Habitat is present on-site. However, the project proposes to create wetlands which then provides additional habitat for the species.
Plants						
Big red sage <i>(Salvia pentstemonoides)</i>		SGCN	Texas endemic; 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	No	No Impact	Habitat not present.
Bracted Twistflower <i>(Strepianthus bracteatus)</i>	C		Texas endemic; 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	No	No Effect	Habitat not present.

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present?	Species Affected?	Pertinent Information
Buckley tridens (<i>Tridens buckleyanus</i>)		SGCN	GLOBAL RANK: G3; Occurs in juniper-oak woodlands on rocky limestone slopes; Perennial; Flowering/Fruiting April-Nov	No	No Impact	Habitat not present.
Burridge greenthread (<i>Thelesperma burridgeanum</i>)		SGCN	GLOBAL RANK: G3; Sandy open areas; Annual; Flowering March-Nov; Fruiting March-June	No	No Impact	Habitat not present.
Correll's false dragon-head (<i>Physostegia correllii</i>)		SGCN	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	Yes	No Impact	Habitat for this species is present at the project site, but the species was not observed in the vegetative profile and impacts are not anticipated. The project proposes to create wetlands which then provides additional habitat for the species.
Elmendorf's onion (<i>Allium elmendorffii</i>)		SGCN	Texas endemic; 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	No	No Impact	Habitat not present.
Glass Mountains coral-root (<i>Hexalectris nitida</i>)		SGCN	GLOBAL RANK: G3; Apparently rare in mixed woodlands in canyons in the mountains of the Brewster County, but encountered with regularity, albeit in small numbers, under <i>Juniperus ashei</i> in woodlands over limestone on the Edwards Plateau, Callahan Divide and Lampasas Cutplain; Perennial; Flowering June-Sept; Fruiting July-Sept	No	No Impact	Habitat not present.
Gravelbar brickellbush (<i>Brickellia dentata</i>)		SGCN	GLOBAL RANK: G3; Essentially restricted to frequently-scoured gravelly alluvial beds in creek and river bottoms; Perennial; Flowering June-Nov; Fruiting June-Oct	Yes	No Impact	Habitat for this species is present at the project site, but the species was not observed in the vegetative profile and impacts are not anticipated. The project proposes to create wetlands which then provides additional habitat for the species.

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present?	Species Affected?	Pertinent Information
Hairy sycamore-leaf snowbell (<i>Styrax platanifolius</i> var. <i>stellatus</i>)		SGCN	GLOBAL RANK: G3T3; Rare throughout range, in habitats similar to those of var. <i>platanifolius</i> - 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	No	No Impact	Habitat not present.
Heller's marbleseed (<i>Onosmodium helleri</i>)		SGCN	GLOBAL RANK: G3; Occurs in loamy calcareous soils in oak-juniper woodlands on rocky limestone slopes, often in more mesic portions of canyons; Perennial; Flowering March-May	No	No Impact	Habitat not present.
Hill Country wild-mercury (<i>Argythamnia aphoroides</i>)		SGCN	Texas endemic; 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	No	No Impact	Habitat not present.
Low spurge (<i>Euphorbia peplidion</i>)		SGCN	GLOBAL RANK: G3; Occurs in a variety of vernal-moist situations in a number of natural regions; Annual; Flowering Feb-April; Fruiting March-April	Yes	No Impact	Habitat for this species is present at the project site, but the species was not observed in the vegetative profile and impacts are not anticipated. The project proposes to create wetlands which then provides additional habitat for the species.
Narrowleaf brickellbush (<i>Brickellia eupatorioides</i> var. <i>gracillima</i>)		SGCN	GLOBAL RANK: G5T3; Moist to dry gravelly alluvial soils along riverbanks but also on limestone slopes; Perennial; Flowering/Fruiting April-Nov	Yes	No Impact	Habitat for this species is present at the project site, but the species was not observed in the vegetative profile and impacts are not anticipated. The project proposes to create wetlands which then provides additional habitat for the species.
Net-leaf bundleflower (<i>Desmanthus reticulatus</i>)		SGCN	GLOBAL RANK: G3; Mostly on clay prairies of the coastal plain of central and south Texas; Perennial; Flowering April-July; Fruiting April-Oct	No	No Impact	Habitat not present.
Osage Plains false foxglove (<i>Agalinis densiflora</i>)		SGCN	GLOBAL RANK: G3; Most records are from grasslands on shallow, gravelly, well drained, calcareous soils; Prairies, dry limestone soils; Annual; Flowering Aug-Oct	No	No Impact	Habitat not present.

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present?	Species Affected?	Pertinent Information
Parks' jointweed (<i>Polygonella parksii</i>)		SGCN	Texas endemic; 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	No	No Impact	Habitat not present.
Plateau loosestrife (<i>Lythrum ovalifolium</i>)		SGCN	GLOBAL RANK: G4; Banks and gravelly beds of perennial (or strong intermittent) streams on the Edwards Plateau, Llano Uplift and Lampasas Cutplain; Perennial; Flowering/Fruiting April-Nov	No	No Impact	Habitat not present. Project site is not situated on the Edwards Plateau region favored by this species.
Plateau milkvine (<i>Matelea edwardsensis</i>)		SGCN	GLOBAL RANK: G3 ; Occurs in various types of juniper-oak and oak-juniper woodlands; Perennial; Flowering March-Oct; Fruiting May-June	No	No Impact	Habitat not present.
Sandhill woollywhite (<i>Hymenopappus carrizoanus</i>)		SGCN	Texas endemic; 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	No	No Impact	Habitat not present.
Siler's huaco (<i>Manfreda sileri</i>)		SGCN	GLOBAL RANK: G3; Rare in a variety of grasslands and shrublands on dry sites; Perennial; Flowering April-July; Fruiting June-July	No	No Impact	Habitat not present.
Spreading leastdaisy (<i>Chaetopappa effuse</i>)		SGCN	GLOBAL RANK: G3; 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	No	No Impact	Habitat not present.
Sycamore-leaf snowbell (<i>Styrax platanifolius ssp. Platanifolius</i>)		SGCN	GLOBAL RANK: G3T3; 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	No	No Impact	Habitat not present.
Texas almond (<i>Prunus minutiflora</i>)		SGCN	GLOBAL RANK: G3; 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 & Oct; Fruiting Feb-Sept	No	No Impact	Habitat not present.
Texas amorphia (<i>Amorpha roemeriana</i>)		SGCN	GLOBAL RANK: G3; Juniper-oak woodlands or shrublands on rocky limestone slopes, sometimes on dry shelves above creeks; Perennial; Flowering May-June; Fruiting June-Oct	No	No Impact	Habitat not present.

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present?	Species Affected?	Pertinent Information
Texas fescue (<i>Festuca versuta</i>)		SGCN	GLOBAL RANK: G3; Occurs in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes; Perennial; Flowering/Fruiting April-June	No	No Impact	Habitat not present.
Texas peachbush (<i>Prunus texana</i>)		SGCN	GLOBAL RANK: G3; 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	No	No Impact	Habitat not present.
Texas seymeria (<i>Seymeria texana</i>)		SGCN	GLOBAL RANK: G3; 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	No	No Impact	Habitat not present.
Tree dodder (<i>Cuscuta exaltata</i>)		SGCN	GLOBAL RANK: G3; 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	No	No Impact	Habitat not present.
All listing data from TPWD. Sources downloaded 12/20/2017.						
LE, LT - Federally Listed Endangered/Threatened C – Candidate Species T/SA – Listed by similarity of appearance E, T - State Listed Endangered/Threatened SGCN - Species of Greatest Conservation Need but with no regulatory listing status						

None of the above listed species were observed during site reconnaissance. As indicated in the above table, the occurrence of state or federal T/E species on the Study Area or within the surrounding vicinity is relatively low.

Should state or federal T/E species or their habitat be identified during site development, project activities should immediately cease in that area, and representatives of USFWS or TPWD should be consulted for additional instructions.