Appendix 2.1: Ecological Resources Supplemental Information

Table A2.1-1: Representative Plants of Four Plant Communities at ABIA

RIPARIAN WOODS & FOREST		UPLAND WOODS		UPLAND PARKLAND/SAVANNAH		MAINTAINED (MOWED) GRASSLANDS	
Black Willow	*Salix nigra*	Cedar Elm	*Ulmus crassifolia*	Bermuda grass	*Cynodon dactylon*	Bermudagrass	*Cynodon dactylon*
Sycamore	*Platanus occidentalis*	Chinese tallow	*Triadica sebifera*	Johnsongrass	*Sorghum halepense*	St. Augustine grass	*Stenotaphrum secundatum*
Green ash	*Fraxinus pennsylvanica*	Chinaberry	*Melia azedarach*	Bumelia	*Sideroxylon lanuginosum*	Buffalograss	*Boutelous dactyloides*
Cottonwood	*Populus deltoides*	Hackberry	*Celtis laevigata*	King Ranch bluestem	*Bothriochloa ischaemum*	Texas bluegrass	*Poa arachnifera*
Hackberry	*Celtis laevigata*	Green ash	*Fraxinus pennsylvanica*	Prairie threeawn	*Aristida oligantha*	Brownseed paspalum	*Paspalum plicatulum*
Coma	*Sideroxylon celastrinum*	Mesquite	*Prosopis glandulosa*	Prostrate lawn flower	*Calyptocarpus vialis*	Crabgrass	*Digitaria texana*
Chinaberry	*Melia azedarach*	Bumelia	*Sideroxylon lanuginosum*	Western ragweed	*Ambrosia cumanensis*	Prostrate lawn flower	*Calyptocarpus vialis*
Cedar elm	*Ulmus crassifolia*	Greenbriar	*Smilax bona-nox*	Giant ragweed	*Ambrosia trifida*	Western ragweed	*Ambrosia psilostachya*
American elm	*Ulmus americana*	Poison ivy	*Toxicodendron radicans*	Knotroot bristlegrass	*Setaria parviflora*	Johnsongrass	*Sorghum halepense*
Box elder	*Acer negundo*	Mustang grape	*Vitis mustangensis*	Queen Anne's lace	*Daucus carota*	King Ranch bluestem	*Bothriochloa ischaemum*
Green ash	*Fraxinus pennsylvanica*	Lime prickly ash	*Zanthoxylum fagara*	Brownseed paspalum	*Paspalum plicatulum*	-	-
Soapberry	*Sapindus saponaria*	Chinese elm	*Ulmus parvifolia*	Doveweed	*Croton texensis*	-	-
Pecan	*Carya illinoiensis*	Mulberry	*Morus microphyulla*	Marestail	*Equisetum sp.*	-	-
Chinese privet	*Ligustrum sinense*	Chinese privet	*Ligustrum sinense*	Annual sunflower	*Helianthus annuus*	-	-

Table A2.1-1 Representative Plants of Four Plant Communities at ABIA (continued)

RIPARIAN WOODS & FOREST		UPLAND WOODS		UPLAND PARKLAND/SAVANNAH		MAINTAINED (MOWED) GRASSLANDS	
Red Mulberry	*Moras rubra*	Retama	*Parkinsonia aculeata*	Bamboo	*Phyllosachys aurea*	-	-
Rough-leaf dogwood	*Cornus drummondii*	Poverty weed	*Baccharis neglecta*	Indian blanket	*Gaillardia pulchella*	-	-
Wax-leaf ligustrum	*Ligustrum japonicum*	American beautyberry	*Callicarpa americana*	Indian blanket	*Gaillardia pulchella*	-	-
Chinese elm	*Ulmus parvifolia*	Texas lantana	*Lantana horrida*	Morningglory	*Ipomea* spp.	-	-
Chinese tallow	*Triadica sebifera*	Yaupon	*Ilex vomitoria*	Western ragweed	*Ambrosia psilosachya*	-	-
Greenbriar	*Smilax bona-nox*	Possumhaw	*Ilex decidua*	Silverleaf nightshade	*Solanum elaeagnifolium*	-	-
Elbowbush	*Forestiera pubescens*	Wax-leaf ligustrum	*Ligustrum japonicum*	Prairie verbena	*Glandularia bipinnatifida*	-	-
Bumelia	*Sideroxylon lanuginosum*	Frostweed	*Verbesina viginica*	Frostweed	*Verbesina viginica*	-	-
Texas walnut	*Juglans microcarpa*	Inland Woodoats Woo	*Chasmanthium latifolium*	Annual broomweed	*Amphiachyris dracunculoides*	-	-
Western soapberry	*Sapindus drumondii*	Poverty weed	*Baccharis neglecta*	King Ranch Bluestem	*Bothriochloa ischaemum*	-	-
Prickly pear	*Opuntia spp.*	Inland woodoats	*Chasmanthium latifolium*	Little bluestem	*Schizachyrium scoparium*	-	-
Mustang grape	*Vitis mustangensis*	Canada wildrye	*Elymus canadensis*	Dewberry	*Rubus trivialis*	-	-
Winter grape	*Vitis cinerea* var. *helleri*	King Ranch bluestem	*Bothriochloa ischaemum*	Mesquite	*Prosopis glandulosa*	-	-
Virginia creeper	*Parthenocissus quinquefolia*	Little bluestem	*Schizachyrium scoparium*	Hackberry	*Celtis laevigata*	-	-

Table A2.1-1 Representative Plants of Four Plant Communities at ABIA (continued)

RIPARIAN WOODS & FOREST		UPLAND WOODS		UPLAND PARKLAND/SAVANNAH		MAINTAINED (MOWED) GRASSLANDS	
Poison ivy	*Toxicodendron radicans*	Western ragweed	*Ambrosia psilostachya*	Poverty weed	*Baccharis neglecta*	-	-
Giant ragweed	*Ambrosia trifida*	-	-	Cedar elm	*Ulmus crassifolia*	-	-
Inland Woodoats Woo	*Chasmanthium latifolium*	-	-	Live oak	*Quercus virginiana*	-	-
Canada wildrye	*Elymus canadensis*	-	-	-	-	-	-
Knotroot bristlegrass	*Setaria parviflora*	-	-	-	-	-	-

Source: Hicks & Company field investigations, June 2017.

Table A2.1-2: Threatened & Endangered Species of Potential Occurrence in Travis County

SPECIES	FEDERAL STATUS	STATE STATUS	DESCRIPTION OF SUITABLE HABITAT	HABITAT PRESENT?
PLANTS				
Bracted twistflower *Steptanthus bracteatus*	C	NL	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; several known soils include Tarrant, Brackett, or Speck over Edwards; Glen Rose and Walnut geologic formations.	No
Basin bellflower *Campanula reverchonii*	NL	SGCN	Texas endemic; among scattered vegetation on loose gravel, gravelly sand, and rock outcrops on open slopes with exposures of igneous and metamorphic rocks; may also occur on sandbars and other alluvial deposits along major rivers; flowering May–July.	Potentially occurs but not confirmed
Boerne bean *Phaseolus texensis*	NL	SGCN	Narrowly endemic to rocky canyons in eastern and southern Edwards Plateau; occurring on limestone soils in mixed woodlands, on limestone cliffs and outcrops, and frequently along creeks.	No
Arrow-leaf milkvine *Matelea sagittifolia*	NL	SGCN	Most consistently encountered in thornscrub in South Texas.	No
Buckley tridens *Tridens buckleyanus*	NL	SGCN	Occurs in juniper-oak woodlands on rocky limestone slopes.	No
Glass Mountains coral-root *Hexalectris nitida*	NL	SGCN	Found in mixed woodlands in canyons in Brewster County and in juniper woodlands over limestone in the Edwards Plateau.	No
Gravelbar brickellbush *Brickellia dentata*	NL	SGCN	Restricted to frequently scoured gravelly alluvial beds in creek and river bottoms.	Potentially occurs but not confirmed
Heller's marbleseed *Onosmodium helleri*	NL	SGCN	Occurs in loamy, calcareous soils in oak-juniper woodlands on rocky limestone slopes.	No
Low spurge *Euphorbia peplidion*	NL	SGCN	Occurs in a variety of vernally moist areas.	Potentially occurs but not confirmed

Table A2.1-2 Threatened & Endangered Species of Potential Occurrence in Travis County (continued)

SPECIES	FEDERAL STATUS	STATE STATUS	DESCRIPTION OF SUITABLE HABITAT	HABITAT PRESENT?
Narrowleaf brickellbush *Brickellia eupatorioides* var. *gracillima*	NL	SGCN	Occurs in moist to dry gravelly alluvial soils along riverbanks and on limestone slopes.	Potentially occurs but not confirmed
Net-leaf bundleflower *Desmanthus reticulatus*	NL	SGCN	Mostly found on clay prairies in the coastal plain of central and south Texas.	Potentially occurs but not confirmed
Plateau loosestrife *Lythrum ovalifolium*	NL	SGCN	Occurs on banks and gravelly beds of perennial streams or strongly intermittent streams of the Edwards Plateau.	No
Plateau milkvine Matelea edwardsensis	NL	SGCN	Found in juniper-oak and oak-juniper woodlands.	No
Rock grape *Vitis rupestris*	NL	SGCN	Occurs on rocky limestone slopes and in streambeds.	No
Scarlet leather-flower *Clematis texensis*	NL	SGCN	Found in oak-juniper woodlands in mesic rocky limestone canyons.	No
Stanfield's beebalm *Monarda punctata var.stanfieldii*	NL	SGCN	Occurs in granite sands along the middle Colorado River and tributaries.	No
Sycamore-leaf snowbell *Styrax platanifolius* var *stanfieldii*	NL	SGCN	Found in oak-juniper woodlands on steep, rocky banks.	No
Texas almond *Prunus minutiflora*	NL	SGCN	Occurs on grassland and shrublands, mostly on calcareous soil underlain by limestone but occasionally on sandier soils underlain by granite.	Potentially occurs but not confirmed
Texas amorpha *Amorpha roemeriana*	NL	SGCN	Found in juniper-oak woodlands on rocky limestone slopes.	No
Texas barberry *Berberis swaseyi*	NL	SGCN	Occurs in shallow, calcareous stony clay of upland grassland/shrublands over limestone and in loamier soils in wooded canyons on creek terraces.	No

Table A2.1-2 Threatened & Endangered Species of Potential Occurrence in Travis County (continued)

SPECIES	FEDERAL STATUS	STATE STATUS	DESCRIPTION OF SUITABLE HABITAT	HABITAT PRESENT?
Texas fescue *Festuca versuta*	NL	SGCN	Occurs in mesic woodlands on limestone-derived soils on stream terraces and canyon slopes.	No
Texas milkvetch *Astragalus reflexus*	NL	SGCN	Occurs in grasslands and prairies on calcareous and clay substrates.	Potentially occurs but not confirmed
Texas seymeria *Seymeria texana*	NL	SGCN	Found in grassy openings in juniper-oak woodlands on dry rocky slopes and on rocky outcrops in shaded canyons.	No
Tree dodder *Cuscuta exaltata*	NL	SGCN	Parasitic on various Quercus, Juglans, Rhus, Vitis, Ulmus and Diospyros species as well as Acacia berlandieri and other woody plants	Potentially occurs but not confirmed
Correll's false dragon-head *Physostegia correllii*	NL	SGCN	Found in wet, silty clay loams on stream sides; 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 creeks in central Texas.	Potentially occurs but not confirmed
Texabama croton *Croton alabamensis var texensis*	NL	SGCN	Texas endemic; in duff-covered loamy clay soils on rocky slopes in forested, mesic limestone canyons; locally abundant on deeper soils on small terraces in canyon bottoms, often forming large colonies and dominating the shrub layer; scattered individuals are occasionally on sunny margins of such forests; also found in contrasting habitat of deep, friable soils of limestone uplands, mostly in the shade of evergreen woodland mottes.	No

Table A2.1-2 Threatened & Endangered Species of Potential Occurrence in Travis County (continued)

SPECIES	FEDERAL STATUS	STATE STATUS	DESCRIPTION OF SUITABLE HABITAT	HABITAT PRESENT?
Warnock's coral-root *Hexalectris warnockii*	NL	SGCN	Found in leaf litter and humus in oak-juniper woodlands on shaded slopes and intermittent, rocky creek beds in canyons; in the Trans Pecos in oak-pinyon-juniper woodlands in higher mesic canyons (to 2000 meters [6550 feet]), primarily on igneous substrates; in Terrell County under *Quercus fusiformis* mottes on terraces of spring-fed perennial streams, draining an otherwise xeric limestone landscape; on the Callahan Divide (Taylor County), the White Rock Escarpment (Dallas County), and the Edwards Plateau in oak-juniper woodlands on limestone slopes; in Gillespie County on igneous substrates of the Llano Uplift.	No
MOLLUSKS				
False spike mussel *Quincuncina mitchelli*	NL	T	Found in substrates of cobble and mud with water lilies present; in the Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins.	No
Smooth pimpleback *Quadrula houstonensis*	C	T	Found in small to moderate streams and rivers as well as moderate size reservoirs; mixed mud, sand, and fine gravel; tolerates very slow to moderate flow rates; appears not to tolerate dramatic water level fluctuations; scoured bedrock substrates or shifting sand bottoms; lower Trinity (questionable), Brazos, and Colorado River basins.	None confirmed
Texas fatmucket *Lampsilis bracteata*	C	T	Found in streams and rivers on sand, mud, and gravel substrates; intolerant of impoundment; broken bedrock and coarse gravel or sand in moderately flowing water; Colorado and Guadalupe River basins.	Potentially occurs within the Colorado River and Onion Creek but not confirmed
Texas fawnsfoot *Truncilla macrodon*	C	T	Little known; possibly rivers and larger streams; intolerant of impoundment; flowing rice irrigation canals; possibly sand, gravel, and perhaps sandy-mud bottoms in moderate flows; Brazos and Colorado River basins.	None confirmed
Texas pimpleback *Quadrula petrina*	C	T	Occurs in mud, gravel, and sand substrates; generally in areas with slow flow rates; Colorado and Guadalupe river basins.	None confirmed

Table A2.1-2 Threatened & Endangered Species of Potential Occurrence in Travis County (continued)

SPECIES	FEDERAL STATUS	STATE STATUS	DESCRIPTION OF SUITABLE HABITAT	HABITAT PRESENT?
CRUSTACEANS				
An amphipod *Stygobromus russelli*	NL	SGCN	Found in subterranean waters, usually in caves and limestone aquifers; resident of numerous caves in ca. 10 counties of the Edwards Plateau.	No
Balcones Cave amphipod *Stygobromus balconis*	NL	SGCN	Subaquatic, subterranean obligate amphipod.	No
Bifurcated cave amphipod *Stygobromus bifurcatus*	NL	SGCN	Found in cave pools.	No
INSECTS				
Kretschmarr Cave mold beetle *Texamaurops reddelli*	E	NL	Small, cave-adapted beetle found under rocks buried in silt; small, Edwards Limestone caves in of the Jollyville Plateau, a division of the Edwards Plateau.	No
Tooth Cave blind rove beetle *Cylindropsis sp 1*	NL	SGCN	One specimen collected from Tooth Cave; only known North American collection of this genus.	No
Tooth Cave ground beetle *Rhadine persephone*	E	NL	Resident, small, cave-adapted beetle found in small Edwards Limestone caves in Travis and Williamson counties.	No
ARACHNIDS				
Bandit Cave spider *Cicurina bandida*	NL	SGCN	Very small, subterrestrial, subterranean obligate.	No
Bee Creek Cave harvestman *Texella reddelli*	E	NL	Small, blind, cave-adapted harvestman endemic to a few caves in Travis and Williamson counties.	No
Bone Cave harvestman *Texella reyesi*	E	NL	Small, blind, cave-adapted harvestman endemic to a few caves in Travis and Williamson counties.	No
Tooth Cave pseudoscorpion *Tartarocreagris texana*	E	NL	Small, cave-adapted, known from small limestone caves of the Edwards Plateau.	No

Table A2.1-2 Threatened & Endangered Species of Potential Occurrence in Travis County (continued)

SPECIES	FEDERAL STATUS	STATE STATUS	DESCRIPTION OF SUITABLE HABITAT	HABITAT PRESENT?
Tooth Cave Spider *Leptoneta myopica*	E	NL	Very small, cave-adapted spider.	No
Wharton's cave meshweaver *Cicurina wartoni*	NL	SGCN	Very small, cave-adapted spider.	No
FISH				
Guadalupe bass *Micropterus treculii*	NL	SGCN	Endemic to perennial streams of the Edward's Plateau region; introduced in Nueces River system.	Likely to occur but not confirmed
AMPHIBIANS				
Austin blind salamander *Eurycea waterlooensis*	E	NL	Mostly restricted to subterranean cavities of the Edwards Aquifer; dependent upon water flow/quality from the Barton Springs segment of the Edwards Aquifer; only known from the outlets of Barton Springs.	No
Barton Springs salamander *Eurycea sosorum*	E	E	Dependent upon water flow/quality from the Barton Springs segment of the Edwards Aquifer; only known from the outlets of Barton Springs; spring dweller, but ranges into subterranean water-filled caverns.	No
Jollyville Plateau salamander *Eurycea tonkawae*	T	NL	Known from springs and waters of some caves north of the Colorado River.	No
Pedernales River springs salamander *Eurycea sp 6*	NL	SGCN	Endemic; known only from springs.	No
REPTILES				
Spot-tailed earless lizard *Holbrookia lacerata*	NL	SGCN	Found in central and southern Texas and adjacent Mexico; moderately open prairie brushland; flat areas free of vegetation or other obstructions, including disturbed areas.	No
Texas garter snake *Thamnophis sirtalis annectens*	NL	SGCN	Found in, but not restricted to, wet or moist microhabitats that are conducive to the species occurrence; hibernates underground or in/under surface cover.	Yes

Table A2.1-2 Threatened & Endangered Species of Potential Occurrence in Travis County (continued)

SPECIES	FEDERAL STATUS	STATE STATUS	DESCRIPTION OF SUITABLE HABITAT	HABITAT PRESENT?
Texas horned lizard *Phrynosoma cornutum*	NL	T	Found in pen, 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
BIRDS				
American peregrine falcon *Falco peregrinus anatum*	DL	T	Year-round resident and local breeder in west Texas; also, migrant across the state from more northern breeding areas in U.S. and Canada; winters along the coast and farther south; occupies a 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.	Yes
Arctic peregrine Falcon *Falco peregrinus tundrius*	DL	NL	Migrant throughout the 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.	Yes
Bald eagle *Haliaeetus leucocephalus*	DL	T	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter.	Yes
Black-capped vireo *Vireo atricapilla*	E	E	Found in oak-juniper woodlands with patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; nesting season March-late summer.	No
Golden-cheeked warbler *Setophaga chrysoparia*	E	E	Found in juniper-oak woodlands; dependent on mature Ashe juniper for long fine bark strips used in nest construction; nesting season late March–early summer.	No
Mountain plover *Charadrius montanus*	NL	SGCN	Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; non-breeding: shortgrass plains and bare, dirt (plowed) fields.	No

Table A2.1-2 Threatened & Endangered Species of Potential Occurrence in Travis County (continued)

SPECIES	FEDERAL STATUS	STATE STATUS	DESCRIPTION OF SUITABLE HABITAT	HABITAT PRESENT?
Peregrine falcon *Falco peregrinus*	DL	T	Both subspecies migrate across the state from more northern breeding areas in the US and Canada to winter along the coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing status 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.	Yes
Piping plover *Charadrius melodus*	T	NL	Winter migrant arriving in late July or early August; will remain for up to nine months; prefers sandy beaches and lakeshores.	No
Western burrowing owl *Athene cunicularia hypugaea*	NL	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
Whooping crane *Grus americana*	E	E	Potential migrant via plains throughout most of the state to the coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.	No
MAMMALS				
Cave myotis bat *Myotis velifer*	NL	SGCN	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.	Yes
Plains spotted skunk *Spilogale putorius interrupta*	NL	SGCN	Catholic; found in open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie.	Yes

Notes: E – Endangered, T = Threatened, C = Candidate for Listing, SGCN = Species of Greatest Conservation Need, DL = Delisted; DL, M = Delisted, Monitoring, NL = Not Listed; rare, but with no current regulatory protection

Source: U.S. Fish and Wildlife Service List of Species by County for Texas. Available at: http://www.fws.gov/endangered/. Accessed June 13, 2017. U.S. Fish and Wildlife Service Environmental Conservation On-line Service (ECOS) species profiles. Available at: https://ecos.fws.gov/ecp0/profile/speciesProfile. Accessed June 23, 2017. Texas Parks and Wildlife Department Annotated County Lists of Rare Species: Travis County, last revision May 16, 2017. Available at: http://www.tpwd.state.tx.us/gis/ris/es/. Accessed June 13, 2017.