

US EPA ARCHIVE DOCUMENT

DP Barcode : D189238  
PC Code No : 109303  
EEB Out :

APR 13 1993

To: Rebecca Cool  
Product Manager 41  
Registration Division (H7505C)

From: Anthony F. Maciorowski, Chief  
Ecological Effects Branch/EFED (H7507C)

Attached, please find the EEB review of...

Reg./File # : 93TX0013  
Chemical Name : Esfenvalerate  
Type Product : Insecticide - pyrethroid  
Product Name : Asana XL  
Company Name : State of Texas  
Purpose : Section 18 for use on sorghum

Action Code : 510 Date Due : 04/06/93  
Reviewer : Renee Lamb

EEB Guideline/MRID Summary Table: The review in this package contains an evaluation of the following:

GDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT
71-1(A)			72-2(A)			72-7(A)		
71-1(B)			72-2(B)			72-7(B)		
71-2(A)			72-3(A)			122-1(A)		
71-2(B)			72-3(B)			122-1(B)		
71-3			72-3(C)			122-2		
71-4(A)			72-3(D)			123-1(A)		
71-4(B)			72-3(E)			123-1(B)		
71-5(A)			72-3(F)			123-2		
71-5(B)			72-4(A)			124-1		
72-1(A)			72-4(B)			124-2		
72-1(B)			72-5			141-1		
72-1(C)			72-6			141-2		
72-1(C)						141-5		

Y=Acceptable (Study satisfied Guideline)/Concur  
P=Partial (Study partially fulfilled Guideline but additional information is needed)  
S=Supplemental (Study provided useful information but Guideline was not satisfied)  
N=Unacceptable (Study was rejected)/Nonconcur

DP BARCODE: D189238

CASE: 284484  
SUBMISSION: S436586

DATA PACKAGE RECORD  
BEAN SHEET

DATE: 03/17/93  
Page 1 of 1

\* \* \* CASE/SUBMISSION INFORMATION \* \* \*

CASE TYPE: EMERGENCY EXEMP ACTION: 510 SEC18-OC F/F USE  
CHEMICALS: 109303 Fenvalerate

ID#: 93TX0013

COMPANY:

PRODUCT MANAGER: 41 REBECCA COOL 703-305-7717 ROOM: CM2 720  
PM TEAM REVIEWER: LIBBY PEMBERTON 703-305-5309 ROOM: CM2 716A  
RECEIVED DATE: 03/08/93 DUE OUT DATE: 04/27/93

\* \* \* DATA PACKAGE INFORMATION \* \* \*

DP BARCODE: 189238 EXPEDITE: N DATE SENT: 03/17/93 DATE RET.: / /

CHEMICAL: 109303 Fenvalerate

DP TYPE: 001 Submission Related Data Package

ADMIN DUE DATE: 04/06/93

CSF: N

LABEL: Y

ASSIGNED TO	DATE IN	DATE OUT
DIV : EFED	3/12/93	/ /
BRAN: EEB	03/12/93	APR 13 1993
SECT:	/ /	/ /
REVR :	/ /	/ /
CONTR:	/ /	/ /

\* \* \* DATA REVIEW INSTRUCTIONS \* \* \*

Please see last paragraph of our issuing 92 mailgram. Has Applicant satisfied our concerns? Also see 1992 USDI concerns recieved too late for consideration in 1992. Also, note that Applicant is proposing more applications this yr even though total ai stays the same - Please update last yrs review.

\* \* \* ADDITIONAL DATA PACKAGES FOR THIS SUBMISSION \* \* \*

DP BC	BRANCH/SECTION	DATE OUT	DUE BACK	INS	CSF	LABEL
189235	BAB	03/17/93	04/06/93	Y	N	Y
189237	EAB	03/17/93	04/06/93	Y	N	Y

**EEB REVIEW  
ASANA**

100.0 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The Texas Department of Agriculture is requesting a specific exemption (Section 18) for the use of esfenvalerate (ASANA) to control the sorghum midge and headworm complex on sorghum in the entire state of Texas. The use season would be from May 10 through September 30, 1993.

100.2 Formulation and Information

Active Ingredients:

Asana* . . . . .	.8.4%
Inert Ingredient. . . . .	.91.6%
	100.0%

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\*(S)-cyano (3-phenoxyphenyl) methyl-(S)-4-chloro-alpha-(1-methylethyl)benzeneacetate

100.3 Application Rate/Methods/Directions

Esfenvalerate is to be applied at a rate of 3.8 to 9.6 fl oz (0.02 to 0.05 lbs ai) per acre of sorghum not to exceed a maximum season rate of 0.1 lb ai (19.2 oz) per acre in the 1993 growing season. At the lowest rate, as many as five applications could be made (0.02 lbs x 5 = 0.1 lbs ai).

100.4 Target Organisms

Sorghum midge *Contarinia sorghicola* (Coquillett)  
Corn earworms (headworms) *Helicoverpa sea* (Boddie)

100.5 Precautionary Labeling

"This product is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water or wetlands (swamps, bogs, marshes and potholes). Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops if bees are visiting the treatment area."

## 101.0 Hazard Assessment

### Discussion

The State of Texas is requesting an emergency exemption for the use of ASANA on Sorghum. This section 18 calls for a maximum seasonal application of 0.1 lb ai/A. A maximum of 489,000 acres - 25% of the sorghum acreage for 1993 of 1,896,000 within the requested sites plus 15,000 acres of sorghum grown for seed production only, in the Texas High Plains. This amounts to about a 50% to 80% increase in the current registered use. If all of the 489,000 acres is treated using the maximum season rate of 0.1 lb ai/A, then a maximum of 48,900 lb ai, would be required.

### Aquatic Toxicity

Fenvalerate, a second generation pyrethroid, degrades in soil with a half-life of six months and undergoes hydrolysis after 24 days at ph 7.2. Fenvalerate can strongly bind to sediment/particulate and result in a soil/water partition coefficient of greater than 15,000. Fenvalerate is a neurotoxicant and effector of ion permeability, (Miller and Adams 1982) and may interact with sodium gates (Lawrence and Casida 1983). Laboratory testing has shown that fenvalerate is very highly toxic to freshwater aquatic organisms as noted in acute toxicity values that ranged from 0.032  $\mu\text{g/L}$  (Daphnia magna) to 2.35  $\mu\text{g/L}$  (fathead minnow) (Mayer and Ellersieck 1986). This very high toxicity has also been documented in acute marine studies. Schimmel et al. (1983) found that fenvalerate was acutely toxic to mysid shrimp, Mysidopsis bahia at 0.008 (0.005 - 0.01)  $\mu\text{g/L}$  and pink shrimp, Penaeus duorarum at 0.84 (0.66 - 1.2)  $\mu\text{g/L}$ . They further found that acute toxicity values for estuarine fish ranged from 5.0 (0.55 - 5.3)  $\mu\text{g/L}$  sheepshead minnow, Cyprinodon variegatus, and 0.31 (0.21 - 0.40)  $\mu\text{g/L}$  for Atlantic silversides, Menidia menidia.

An evaluation of sublethal fenvalerate exposure to aquatic invertebrate larval development and metabolism was conducted by McKenney and Hamaker (1984). They concluded that exposure to 0.0001 and 0.0002  $\mu\text{g/L}$  can result in alterations of metabolic-salinity patterns of larval grass shrimp, Palaemonetes pugio. This effect reduces the homeostasis at a critical life stage by limiting the organisms capacity to adapt to fluctuating salinity conditions that are normally encountered in estuarine waters.

Estuarine sediments are the ultimate sink for many kinds of pesticides that flush from urban and

agricultural watersheds. Lipophilic compounds, like esFenvalerate, can rapidly bind to suspended matter in the water column (i.e. clays, organic colloids, organic particulates) and be deposited as a sediment. This resulting contaminated sediment load usually persists for long periods of time (i.e. months to years), while the overlying water may undergo more rapid depuration (day to weeks) once pesticide input has subsided. Therefore, a major concern in assessing risk is the evaluation of effects to benthic organisms living and feeding on this pesticide-laden sediment. Although this data base is limited, Chandler (1990) noted that sediment-bound residues of Fenvalerate can affect survival and reproduction of copepods. He found that sediment-bound residues as low as 25 ppb significantly depressed egg production (50-100% reduction) and mean clutch sizes (40% - 100% reduction) of Fertile Microarthridion littorale and Paronychocamptus wilsoni (copepods that are important in food-chain dynamics). Although the toxicity of Fenvalerate may be reduced as a result of sorption to sediment, Coulon (1982) found that this reduction was only 2-fold, and does not eliminate the potential for aquatic hazard. Smith et al. (1983) noted that Fenvalerate concentrations in agricultural runoff from a sugarcane-insect IPM system could present a toxicity risk to aquatic organisms in adjacent bodies of water.

In 1992, Webber et al evaluated the effects of esfenvalerate on an aquatic mesocosm with defined littoral and limnetic zones. Treatments (low, medium, high) consisted of 10 weekly drift and five biweekly runoff events of formulated esfenvalerate (Asana XL 0.66 EC) that simulated the actual application rate, as well as 0.2 % and 20% of application. They found that during the ten week exposure period, microinvertebrates exposed to the medium application level (rate used on cotton) underwent a significant reduction in numbers while bluegill young showed a decline in biomass. This mesocosm study confirms the laboratory effects data.

In evaluating potential risk of a pesticide to aquatic systems, the Ecological Effects Branch (EEB) relies upon actual field residue data, when available, and/or a model generated estimated environmental concentration (EEC). Evaluating the effects of ground and aerial application of ASANA from a 10 acre drainage basin to 0.05 lb ai/A, the calculated EEC's are 0.03 and 0.15  $\mu\text{g/L}$ , respectively (Appendix I). A comparison of these estimates with EEB's Regulatory Criteria suggests that ASANA use on sorghum could result in environmental residues that exceed aquatic toxicity concerns via

runoff and drift from sprayed fields that are adjacent to aquatic systems.

The acute/chronic laboratory tests, mesocosm studies and the computer generated EEC values indicate that esfenvalerate use in the environment will have both long and short term toxicity effects on various species of aquatic invertebrate populations. Fish larval and juvenile stages can be directly affected if application of the pesticide coincides with spawning and early development periods. Secondary effects can occur to fish during these sensitive developmental stages as aquatic invertebrate populations decline and prey organisms become scarce.

### Avian Toxicity

The available data suggests that fenvalerate is practically non-toxic to birds at an acute level (mallard  $LC_{50}$  = 9,932 ppm; Bobwhite quail  $LC_{50}$  = 10,000 ppm). However, avian reproductive effects were found at 25 ppm. In assessing acute toxicity of ASANA to avian wildlife, EEB has estimated the potential avian exposure from residues by using Hoerger's and Kenaga's (1972) table of typical maximum residues on differing categories of vegetation (Table 1).

Table 1: Maximum Expected Fenvalerate Residues on Avian Food and Dietary Intake (ppm) after an Application of 0.05 lb ai/A on Sorghum

<u>Food Type</u>	<u>Residue (ppm)</u>
Short grass	12.0
Dense Foliage/Small Insects	2.7
Large Insects	0.6

The maximum expected residues from the consumption of vegetation and insects (application rate of 0.05 lb ai/A) are expected to range from 0.6 to 12.0 ppm. These values show that ASANA use on sorghum should not present a direct toxicity threat to birds (expected residues are 6 to 3 orders of magnitude less than acute and chronic toxicity values). However, the high toxicity of ASANA to aquatic invertebrates and the possibility of exposure to aquatic environments from runoff and drift can result in an indirect effect to waterfowl recruitment by impacting a significant food base.

Endangered Species

The Texas Department of Agriculture has consulted with the USFWS regarding impacts from the use of Asana to endangered species in Texas. Since this Section 18 would include the entire state of Texas, attached is the county by county list of federally listed threatened and endangered species from each Ecological Services Field Office of the USFWS in Texas. Also attached, is a list of statewide migratory listed species.

The USFWS has "serious concerns regarding this exemption application." They believe other registered alternative pesticides should be used. Sorghum is grown in areas known to be in the vicinity of both terrestrial and aquatic threatened and endangered species. Plants can also be indirectly impacted by loss of pollinators critical for propagation. The Service believes buffer zones should be developed for both aerial and ground applications in order to ensure no adverse impacts upon federally listed species as well as other wildlife and fish resources.

The USFWS believes there is "potential detrimental effects to both" endangered and non endangered species from the use of this chemical. Also, they feel special consideration should be given to areas near state and federal fish hatcheries since some of them harbor listed species that could be affected by the application of Asana. Therefore, the USFWS recommends "that this exemption be valid only for areas with proven infestations and where other available registered pesticides would not control the pest effectively."

The following EEC's and endangered species triggers were calculated for Asana:

	<u>Toxicity values</u>	<u>Risk criteria</u>	<u>Max EEC</u>
Avian	LC <sub>50</sub> = 10,000 ppm	1/10 LC <sub>50</sub> = 1,000 ppm	12 ppm
Fish	LC <sub>50</sub> = 0.31 µg/L	1/20 LC <sub>50</sub> = 0.015 µg/L	0.154 µg/L
Invert.	LC <sub>50</sub> = 0.032 µg/L	1/20 LC <sub>50</sub> = 0.0016 µg/L	0.154 µg/L

The above EEC calculations suggest that Asana exposure exceeds the risk criteria for endangered/threatened fish and terrestrial and aquatic invertebrates. Results from the mesocosm study confirm laboratory data, therefore the use of this chemical could result in adverse effects to threatened/endangered aquatic fish and terrestrial and aquatic invertebrates.



Conclusions

EEB has completed the evaluation of the Section 18 request for the use of ASANA on sorghum in Texas. Expected EEC values were calculated in order to assess the potential hazards of ASANA to avian and aquatic species. The expected residues from field runoff and drift exceed acute/chronic toxicity values by one to two orders of magnitude. In addition, fish kills caused by agricultural runoff of fenvalerate have also been documented. Based on these factors, and the toxicity of the chemical, EEB concludes that the use of Asana on sorghum in the state of Texas, could result in undue risk to nontarget organisms, including threatened and endangered species.

The State of Texas applied for an emergency exemption for the use of Asana on sorghum in 1992. The response from OPP, signed by Doug Campt, Director, on May 29, 1992, stated the exemption would be granted with certain restrictions. The Texas Department of Agriculture has addressed these restrictions and provisions on the use of Asana for this exemption in order to reduce risk to nontarget organisms, including the following:

"Applications of esfenvalerate are prohibited in treatment areas within 200 feet of moving water, or public waters either moving or standing for ground applications and 1/4 mile for aerial applications. Applications are prohibited if weather conditions favorable for runoff are predicted in the treatment area for the time period for which application is scheduled. Applications are prohibited within 5 miles of the Gulf of Mexico."

This buffer zone is adequate, however, the 5 mile zone is insufficient to protect estuarine habitats, therefore, applications are prohibited within 25 miles of the Gulf of Mexico. Labeling should be changed accordingly.

In addition, in order to address the concerns of the USFWS regarding endangered species, the same buffer zone restrictions must apply to habitats of endangered/threatened species. Including the state and federal fish hatcheries such as those in Uvalde and San Marcos counties.

Renee Lamb *Renee Lamb* 4/7/93  
Biologist  
EFED/EEB (H7507C)

Ann Stavola *Ann Stavola*  
Head, Section 5  
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*Anthony F. Maciorowski*  
Anthony F. Maciorowski  
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Appendix I: EEC Calculations for ASANA Use on Sorghum

1) Ground Application

Assumptions

0.1% runoff

10 acre drainage basin

0.05 lb ai/A

Runoff

$0.05 \text{ lb ai/A} \times 0.001 \times 10 \text{ A} = 0.0005 \text{ lb ai total runoff}$

EEC of 1 lb ai, direct application to 1 A pond

6 ft deep = 61 g/L

Therefore:  $\text{EEC} = \frac{61 \text{ g/L}}{1 \text{ lb ai}} \times \frac{0.0005 \text{ lb ai}}{1} = \underline{0.03 \text{ g/L}}$

II. Aerial Application

Assumptions:

0.1% runoff

60% application efficiency

10 acre drainage basin

5% drift

0.05 lb ai/A

Runoff

$0.05 \text{ lb ai/A} \times 0.6 \times 0.0001 \times 10 \text{ A} = 0.00003 \text{ lb ai in runoff}$

Drift

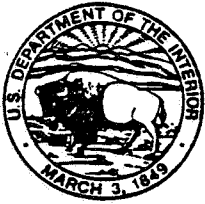
$0.05 \text{ lb ai/A} \times 0.05 = 0.0025 \text{ lb ai in drift}$

Therefore,  $\text{EEC} = \frac{61 \text{ g/L}}{1 \text{ lb ai}} \times \frac{0.0025 \text{ lb ai}}{1} = \underline{0.15 \text{ g/L}}$

## REFERENCES

- Chandler, T.G. 1990. Effects of sediment-bound residues of the pyrethroid insecticide Fenvalerate on survival and reproduction of meiobenthic copepods. *Mar. Env. Res.* 29:65-76
- Lawrence, L.J., J.E. Casida. 1983 Stereospecific action of pyrethroid insecticides on the  $\gamma$ -aminobutyric acid receptor-ionophore complex. *Science* 221:1399-1401.
- Mayer, F.L. and M.R. Ellersieck. 1986. Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals. U.S. Dept., of the Interior, Publication 160:234-285.
- McKenney, C.L. and D.B. Hamaker. 1984. Effects of Fenvalerate on larval development of *Palamonetes pugio* (Holthuis) and on larval metabolism during osotic stress. *Aquat. Tox.* 5:343-355.
- Miller, T.A. and M.E. Adams 1982. Mode of action of pyrethroids. In *Insecticide Mode of Action* (J.R. Coats, ed.) pp. 3-24, Academic Press, New York.
- Schimmel, S.C.; R.L. Garnas, J.M. Patrick and J.C. Moore. 1983. Acute Toxicity, bioconcentration, and persistence of AC 222, 705, Bentiocarb, Chlorpyrifos, Fenvalerate, Methyl Parathion, and Permethrin in the estuarine environment. *J. Agric. Food Chem.* 31(1):104-113.
- Smith, A.G., J.J. Stoudt and J.B. Gallop. 1964. Prairie potholes and marshes. In *Waterfowl Tomorrow*. U.S. Government Printing Office, Washington, D. C. 770 pp.
- Webber, E.C., Deutsch, W.G., Bayne, D.R. and Seesock, W.C. 1992. Ecosystem-level testing of a synthetic pyrethroid insecticide in aquatic mesocosms. *Environ. Tox. Chem.* 11:87-105.

*Comments on 1772*



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

611 E. Sixth Street  
Grant Bldg., Suite 407  
Austin, Texas 78701

OCT 27 1992

2-15-92-I-011

Mr. Terry Mitchell  
Texas Department of Agriculture  
Pesticide Registration Program  
P.O. Box 12847  
Austin, Texas 78711

*Concerns voiced  
by USD I with  
respect to 92 use  
too late for our  
consideration in 92*

Dear Mr. Mitchell:

This responds to your letter of July 28, 1992, notifying the U.S. Fish and Wildlife Service (Service) of your application to the Environmental Protection Agency (EPA) for an amendment to the Section 18 specific exemption for the use of esfenvalerate (Asana XL) to include the entire state of Texas. Please find enclosed (Enclosures 1, 2, 3, and 4) a county by county list of federally listed threatened and endangered species from each Ecological Services Field Office (see enclosed map). We are also including (Enclosure 5) a list of statewide migratory listed species to assist EPA in determining possible impacts related to the application of this chemical.

→ However, the Service has serious concerns regarding this exemption application under Section 18 for the use of this highly toxic insecticide. Further, we believe there are other registered pesticides that could be used as alternatives. ←

This chemical label carries precautionary statements regarding fish and wildlife. Dupont's label for Asana XL states it is toxic to wildlife, extremely toxic to fish, and highly toxic to bees. In the aquatic environment, Asana is 1) rapidly dissipated in the water column (half-life of 12 hours), 2) toxic to fish and invertebrates as low as 0.1 ug/L (super toxic), 3) toxic to caged bluegill as low as 1.7 ug/L, 4) nontoxic to algae, and 5) toxic to zooplankton at all concentrations tested. Bluegills absorb more esfenvalerate in tanks which contain sediments than in tanks with the same water concentration but no sediments.

→ Sorghum is grown in areas known to be in the vicinity of both terrestrial and aquatic threatened and endangered species. Plants can also be indirectly impacted by loss of pollinators which are critical for propagation. Therefore, we believe that the following steps should be taken to ensure no adverse impacts to threatened and endangered species and other fish and wildlife resources: ←

- 1. buffer zones should be developed to ensure no adverse impacts on threatened and endangered species or fish and wildlife resources

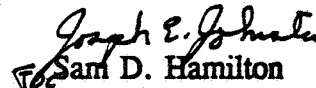
Mr. Terry Mitchell

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2. these buffer zones should be developed for both ground and aerial application effects.

We believe there is potential for detrimental effects to both threatened and endangered species and other fish and wildlife resources by the application of this chemical. Additionally, we believe that special consideration should be given to areas near both State and Federal fish hatcheries since some of them harbor listed species that could be affected by application of this chemical. We recommend that this exemption be valid only for areas with proven infestations and where other available registered pesticides would not control the pest effectively. We thank you for the opportunity to provide comments and appreciate your concerns regarding threatened and endangered species and other fish and wildlife resources. If you have any questions, please contact Bryan Arroyo at 512/482-5436.

Sincerely,

  
For Sam D. Hamilton  
State Administrator

cc: Regional Director, FWS, Albuquerque, NM  
Field Supervisors, FWS, Arlington, Corpus Christi, Clear Lake, TX  
Regional Administrator, EPA, Dallas, TX  
Executive Director, TPWD, Austin, TX  
Fish Hatchery Directors, San Marcos and Uvalde, TX

**ENCLOSURE 1  
COUNTY BY COUNTY LIST  
ARLINGTON ECOLOGICAL SERVICES FIELD OFFICES**

**Anderson**

Bald eagle (E) - Haliaeetus leucocephalus

**Archer**

Whooping crane (E) - Grus americana

**Armstrong**

Bald eagle (E) - Haliaeetus leucocephalus

Whooping crane (E) - Grus americana

**Bailey**

American peregrine falcon (E) - Falco peregrinus anatum

Bald eagle (E) - Haliaeetus leucocephalus

**Bosque**

Bald eagle (E) - Haliaeetus leucocephalus

Black-capped vireo (E) - Vireo atricapillus

Whooping crane (E) - Grus americana

Golden-cheeked warbler (E) - Dendroica chrysoparia

**Bowie**

Bald eagle (E) - Haliaeetus leucocephalus

Red-cockaded woodpecker (E) - Picoides borealis

Interior least tern (E) - Sterna antillarum

**Briscoe**

Bald eagle (E) - Haliaeetus leucocephalus

**Carson**

Bald eagle (E) - Haliaeetus leucocephalus

Whooping crane (E) - Grus americana

**Cass**

Bald eagle (E) - Haliaeetus leucocephalus

Red-cockaded woodpecker (E) - Picoides borealis

**Cherokee**

Bald eagle (E) - Haliaeetus leucocephalus

Red-cockaded woodpecker (E) - Picoides borealis

**Childress**

Interior least tern (E) - Sterna antillarum

**Clay**

Bald eagle (E) - Haliaeetus leucocephalus

Whooping crane (E) - Grus americana

Interior least tern (E) - Sterna antillarum

**Coke**

Black-capped vireo (E) - Vireo atricapillus

Concho water snake (T) - Nerodia harteri paucimaculata

Texas poppy-mallow (E) - Callirhoe scabriuscula

**Crosby**

Whooping crane (E) - Grus americana

**Dallas**

Black-capped vireo (E) - Vireo atricapillus

**Deaf Smith**

Bald Eagle (E) - Haliaeetus leucocephalus

**Denton**

Whooping crane (E) - Grus americana

Bald eagle (E) - Haliaeetus leucocephalus

**Donley**

Bald eagle (E) - Haliaeetus leucocephalus

**Eastland**

Black-capped vireo (E) - Vireo atricapillus

Golden-cheeked warbler (E) - Dendroica chrysoparia

**Ellis**

Black-capped vireo (E) - Vireo atricapillus

**Erath**

Black-capped vireo (E) - Vireo atricapillus

Whooping crane (E) - Grus americana

Golden-cheeked warbler (E) - Dendroica chrysoparia

**Fannin**

Bald eagle (E) - Haliaeetus leucocephalus

Interior least tern (E) - Sterna antillarum

Floyd

Bald eagle (E) - Haliaeetus leucocephalus

Franklin

Bald eagle (E) - Haliaeetus leucocephalus

Gray

Whooping crane (E) - Grus americana

Grayson

Bald eagle (E) - Haliaeetus leucocephalus

Black-capped vireo (E) - Vireo atricapillus

Piping plover (T) - Charadrius melodus

Interior least tern (E) - Sterna antillarum

Gregg

Bald eagle (E) - Haliaeetus leucocephalus

Hall

Interior least tern (E) - Sterna antillarum

Hardeman

Interior least tern (E) - Sterna antillarum

Harrison

Bald eagle (E) - Haliaeetus leucocephalus

Hemphill

Bald eagle (E) - Haliaeetus leucocephalus

Interior least tern (E) - Sterna antillarum

Henderson

Bald eagle (E) - Haliaeetus leucocephalus

Hood

Bald eagle (E) - Haliaeetus leucocephalus

Golden-cheeked warbler (E) - Dendroica chrysoparia

Hunt

Bald eagle (E) - Haliaeetus leucocephalus

Hutchinson

Bald eagle (E) - Haliaeetus leucocephalus

Interior least tern (E) - Sterna antillarum



Johnson

Whooping crane (E) - Grus americana

Kaufman

Bald eagle (E) - Haliaeetus leucocephalus

Lamar

Bald eagle (E) - Haliaeetus leucocephalus

Whooping crane (E) - Grus americana

Interior least tern (E) - Sterna antillarum

Lubbock

Whooping crane (E) - Grus americana

Lynn

Whooping crane (E) - Grus americana

Marion

Bald eagle (E) - Haliaeetus leucocephalus

Montague

Bald eagle (E) - Haliaeetus leucocephalus

Interior least tern (E) - Sterna antillarum

Moore

Bald eagle (E) - Haliaeetus leucocephalus

Morris

Bald eagle (E) - Haliaeetus leucocephalus

Nacogdoches

Bald eagle (E) - Haliaeetus leucocephalus

Red-cockaded woodpecker (E) - Picoides borealis

Palo Pinto

Bald eagle (E) - Haliaeetus leucocephalus

Black-capped vireo (E) - Vireo atricapillus

Golden-cheeked warbler (E) - Dendroica chrysoparia

Panola

Bald eagle (E) - Haliaeetus leucocephalus

Parker

Black-capped vireo (E) - Vireo atricapillus

Potter

Bald eagle (E) - Haliaeetus leucocephalus

Whooping crane (E) - Grus americana

Rains

Bald eagle (E) - Haliaeetus leucocephalus

Randall

Bald eagle (E) - Haliaeetus leucocephalus

Whooping crane (E) - Grus americana

Red River

Bald eagle (E) - Haliaeetus leucocephalus

Red-cockaded woodpecker (E) - Picoides borealis

Interior least tern (E) - Sterna antillarum

Roberts

Interior least tern (E) - Sterna antillarum

Rusk

Bald eagle (E) - Haliaeetus leucocephalus

Shackelford

Bald eagle (E) - Haliaeetus leucocephalus

Shelby

Bald eagle (E) - Haliaeetus leucocephalus

Red-cockaded woodpecker (E) - Picoides borealis

Smith

Bald eagle (E) - Haliaeetus leucocephalus

Somervell

Black-capped vireo (E) - Vireo atricapillus

Golden-cheeked warbler (E) - Dendroica chrysoparia

Stephens

Golden-cheeked warbler (E) - Dendroica chrysoparia

Swisher

Bald eagle (E) - Haliaeetus leucocephalus

Tarrant

Black-capped vireo (E) - Vireo atricapillus

Piping plover (T) - Charadrius melodus

Whooping crane (E) - Grus americana

Terry

American peregrine falcon (E) - Falco peregrinus anatum

Black-capped vireo (E) - Vireo atricapillus

Bunched cory cactus (T) - Coryphantha ramillosa

Throckmorton

Interior least tern (E) - Sterna antillarum

Titus

Bald eagle (E) - Haliaeetus leucocephalus

Upshur

Bald eagle (E) - Haliaeetus leucocephalus

Van Zandt

Bald Eagle (E) - Haliaeetus leucocephalus

Wichita

Interior least tern (E) - Sterna antillarum

Whooping crane (E) - Grus americana

Wilbarger

Interior least tern (E) - Sterna antillarum

Wood

Bald eagle (E) - Haliaeetus leucocephalus

ENCLOSURE 2  
COUNTY BY COUNTY LIST  
AUSTIN ECOLOGICAL SERVICES FIELD OFFICES

**BANDERA**

Black-capped vireo (E) - Vireo atricapillus  
Golden-cheeked warbler (E) - Dendroica chrysoparia  
Tobusch fishhook cactus (E) - Ancistrocactus tobuschii

**BASTROP**

Bald eagle (E) - Haliaeetus leucocephalus  
Houston toad (E) - Bufo houstonensis

**BELL**

Bald eagle (E) - Haliaeetus leucocephalus  
Black-capped vireo (E) - Vireo atricapillus  
Whooping crane (E) - Grus americana  
Golden-cheeked warbler (E) - Dendroica chrysoparia

**BEXAR**

Golden-cheeked warbler (E) - Dendroica chrysoparia  
Black-capped vireo (E) - Vireo atricapillus

**BLANCO**

Black-capped vireo (E) - Vireo atricapillus  
Golden-cheeked warbler (E) - Dendroica chrysoparia

**BRAZOS**

Bald eagle (E) - Haliaeetus leucocephalus  
Navasota ladies'-tresses (E) - Spiranthes parksii

**BREWSTER**

American peregrine falcon (E) - Falco peregrinus anatum  
Black-capped vireo (E) - Vireo atricapillus  
Mexican long-nosed bat (E) - Leptonycteris nivalis  
Big Bend gambusia (E) - Gambusia gaigei  
Bunched cory cactus (T) - Coryphantha ramillosa  
Chisos Mt. hedgehog cactus (T) - Echinocereus chisosensis var. chisosensis  
Davis' green pitaya (E) - Echinocereus viridiflorus var. davisii  
Lloyd's hedgehog cactus (E) - Echinocereus lloydii  
Lloyd's mariposa cactus (T) - Neolloydia mariposensis  
Nellie cory cactus (E) - Coryphantha minima  
Terlingua Creek cat's-eye (E) - Cryptantha crassipes  
Whooping crane (E) - Grus americana

**BROWN**

Concho water snake (T) - Nerodia harteri paucimaculata

**BURLESON**

Bald eagle (E) - Haliaeetus leucocephalus

Houston toad (E) - Bufo houstonensis

Navasota ladies'-tresses (E) - Spiranthes parksii

**BURNET**

Bald eagle (E) - Haliaeetus leucocephalus

Black-capped vireo (E) - Vireo atricapillus

Golden-cheeked warbler (E) - Dendroica chrysoparia

**CALDWELL**

Fountain darter (E) - Etheostoma fonticola

**CALLAHAN**

Black-capped vireo (E) - Vireo atricapillus

Whooping crane (E) - Grus americana

**COKE**

Black-capped vireo (E) - Vireo atricapillus

Concho water snake (T) - Nerodia harteri paucimaculata

Texas poppy-mallow (E) - Callirhoe scabriuscula

**COLEMAN**

Bald eagle (E) - Haliaeetus leucocephalus

Concho water snake (T) - Nerodia harteri paucimaculata

**COMAL**

Fountain darter (E) - Etheostoma fonticola

Golden-cheeked warbler (E) - Dendroica chrysoparia

**COMANCHE**

Black-capped vireo (E) - Vireo atricapillus

Whooping crane (E) - Grus americana

Golden-cheeked warbler (E) - Dendroica chrysoparia

**CONCHO**

Bald eagle (E) - Haliaeetus leucocephalus

Concho water snake (T) - Nerodia harteri paucimaculata

**CORYELL**

Black-capped vireo (E) - Vireo atricapillus

Whooping crane (E) - Grus americana

Golden-cheeked warbler (E) - Dendroica chrysoparia

## CROCKETT

Black-capped vireo (E) - Vireo atricapillus

## CULBERTSON

American peregrine falcon (E) - Falco peregrinus anatum

Lloyd's hedgehog cactus (E) - Echinocereus lloydii

Sneed pincushion cactus (E) - Coryphantha sneedii var. sneedii

McKittrick pennyroyal (T) - Hedeoma apiculatum

## EDWARDS

Black-capped vireo (E) - Vireo atricapillus

Golden-cheeked warbler (E) - Dendroica chrysoparia

Tobusch fishhook cactus (E) Ancistrocactus tobuschii

Texas snowbells (E) - Styrax texana

## EL PASO

Sneed pincushion cactus (E) - Coryphantha sneedii var. sneedii

American peregrine falcon (E) - Falco peregrinus anatum

## FALLS

Whooping crane (E) - Grus americana

## FREESTONE

Bald eagle (E) - Haliaeetus leucocephalus

Houston toad (E) - Bufo houstonensis

Large-fruited sand verbena (E) - Abronia macrocarpa

## GILLESPIE

Bald eagle (E) - Haliaeetus leucocephalus

Golden-cheeked warbler (E) - Dendroica chrysoparia

Tobusch fishhook cactus (E) - Ancistrocactus tobuschii

Whooping crane (E) - Grus americana

## GRIMES

Bald eagle (E) - Haliaeetus leucocephalus

Navasota ladies'-tresses (E) - Spiranthes parksii

## GUADALUPE

Fountain darter (E) - Etheostoma fonticola

## HAMILTON

Golden-cheeked warbler (E) - Dendroica chrysoparia

## HAYS

Black-capped vireo (E) - Vireo atricapillus

Fountain darter (E) - Etheostoma fonticola

San Marcos gambusia (E) - Gambusia georgei  
San Marcos salamander (T) - Eurycea nana  
Texas blind salamander (E) - Typhlomolge rathbuni  
Texas wild-rice (E) - Zizania texana  
Golden-cheeked warbler (E) - Dendroica chrysoparia

#### HOWARD

Whooping crane (E) - Grus americana

#### HUDSPETH

American peregrine falcon (E) - Falco peregrinus anatum  
Lloyd's hedgehog cactus (E) - Echinocereus lloydii  
Sneed pincushion cactus (E) - Coryphantha sneedii var. sneedii

#### IRION

Black-capped vireo (E) - Vireo atricapillus  
Concho water snake (T) - Nerodia harteri paucimaculata

#### JEFF DAVIS

American peregrine falcon (E) - Falco peregrinus anatum  
Bald eagle (E) - Haliaeetus leucocephalus  
Comanche springs pupfish (E) - Cyprinodon elegans  
Little Aguja Creek pondweed (E) - Potamogeton clystocarpus  
Pecos gambusia (E) - Gambusia nobilis

#### KENDALL

Golden-cheeked warbler (E) - Dendroica chrysoparia  
Black-capped vireo (E) - Vireo atricapillus

#### KERR

Golden-cheeked warbler (E) - Dendroica chrysoparia  
Black-capped vireo (E) - Vireo atricapillus  
Tobusch fishhook cactus (E) - Ancistrocactus tobuschii

#### KIMBLE

Black-capped vireo (E) - Vireo atricapillus  
Golden-cheeked warbler (E) - Dendroica chrysoparia  
Tobusch fishhook cactus (E) - Ancistrocactus tobuschii  
Texas snowbells (E) - Styrax texana

#### KINNEY

Golden-cheeked warbler (E) - Dendroica chrysoparia  
Black-capped vireo (E) - Vireo atricapillus

#### LAMPASAS

Bald eagle (E) - Haliaeetus leucocephalus

Black-capped vireo (E) - Vireo atricapillus  
Concho water snake (T) - Nerodia harteri paucimaculata  
Golden-cheeked warbler (E) - Dendroica chrysoparia  
Whooping crane (E) - Grus americana

#### LEE

Houston toad (E) - Bufo houstonensis  
Navasota ladies'-tresses (E) - Spiranthes parksii

#### LEON

Bald eagle (E) - Haliaeetus leucocephalus  
Large-fruited sand verbena (E) - Abronia macrocarpa  
Navasota ladies'-tresses (E) - Spiranthes parksii  
Houston toad (E) - Bufo houstonensis

#### LIMESTONE

Bald eagle (E) - Haliaeetus leucocephalus

#### LLANO

Bald eagle (E) - Haliaeetus leucocephalus  
Golden-cheeked warbler (E) - Dendroica chrysoparia

#### MADISON

Navasota ladies'-tress (E) - Spiranthes parksii

#### MASON

Golden-cheeked warbler (E) - Dendroica chrysoparia

#### McCULLOCH

Concho water snake (T) - Nerodia harteri paucimaculata

#### McLENNAN

Bald eagle (E) - Haliaeetus leucocephalus  
Black-capped vireo (E) - Vireo atricapillus  
Golden-cheeked warbler (E) - Dendroica chrysoparia

#### MEDINA

Golden-cheeked warbler (E) - Dendroica chrysoparia

#### MENARD

Black-capped vireo (E) - Vireo atricapillus  
Clear Creek gambusia (E) - Gambusia heterochir

#### MILAM

Houston toad (E) - Bufo houstonensis  
Whooping crane (E) - Grus americana



## MILLS

Black-capped vireo (E) - Vireo atricapillus  
Concho watersnake (T) - Nerodia harteri paucimaculata

## MITCHELL

Texas poppy-mallow (E) - Callirhoe scabriuscula

## PECOS

American peregrine falcon (E) - Falco peregrinus anatum  
Black-capped vireo (E) - Vireo atricapillus  
Leon Springs pupfish (E) - Cyprinodon bovinus  
Pecos gambusia (E) - Gambusia nobilis  
Lloyd's hedgehog cactus (E) - Echinocereus lloydii

## PRESIDIO

American peregrine falcon (E) - Falco peregrinus anatum  
Mexican long-nosed bat (E) - Leptonycteris nivalis  
Lloyd's mariposa cactus (T) - Neolloydia mariposensis  
Lloyd's hedgehog cactus (E) - Echinocereus lloydii  
Hinkley's oak (T) - Quercus hinckleyi

## REAGAN

Black-capped vireo (E) - Vireo atricapillus

## REAL

Golden-cheeked warbler (E) - Dendroica chrysoparia  
Black-capped vireo (E) - Vireo atricapillus  
Tobusch fishhook cactus (E) Ancistrocactus tobuschii  
Texas snowbells (E) - Styrax texana

## REEVES

American peregrine falcon (E) - Falco peregrinus anatum  
Comanche Springs pupfish (E) - Cyprinodon elegans  
Pecos gambusia (E) - Gambusia nobilis

## ROBERTSON

Bald eagle (E) - Haliaeetus leucocephalus  
Navasota ladies'-tresses (E) - Spiranthes parksii  
Large-fruited sand verbena (E) - Abronia macrocarpa  
Houston toad (E) - Bufo houstonensis

## RUNNELS

Concho watersnake (T) - Nerodia harteri paucimaculata  
Texas poppy-mallow (E) - Callirhoe scabriuscula

Rusk

Bald eagle (E) - Haliaeetus leucocephalus

SAN SABA

Bald eagle (E) - Haliaeetus leucocephalus

Black-capped vireo (E) - Vireo atricapillus

Golden-cheeked warbler (E) - Dendroica chrysoparia

Concho watersnake (T) - Nerodia harteri paucimaculata

Whooping crane (E) - Grus americana

STERLING

Concho watersnake (T) - Nerodia harteri paucimaculata

SUTTON

Black-capped vireo (E) - Vireo atricapillus

Golden-cheeked warbler (E) - Dendroica chrysoparia

TAYLOR

Black-capped vireo (E) - Vireo atricapillus

TERRELL

American peregrine falcon (E) - Falco peregrinus anatum

Black-capped vireo (E) - Vireo atricapillus

Bunched cory cactus (T) - Coryphantha ramillosa

TOM GREEN

Bald eagle (E) - Haliaeetus leucocephalus

Black-capped vireo (E) - Vireo atricapillus

Concho watersnake (T) - Nerodia harteri paucimaculata

TRAVIS

Black-capped vireo (E) - Vireo atricapillus

Golden-cheeked warbler (E) - Dendroica chrysoparia

Whooping crane (E) - Grus americana

Bee Creek cave harvestman (E) - Texella reddelli

Kretschmarr cave mold beetle (E) - Texamaurops reddelli

Tooth cave pseudoscorpion (E) - Microcreagris texana

Tooth cave ground beetle (E) - Rhadine persephone

Tooth cave spider (E) - Leptoneta myopica

UVALDE

Comanche Springs pupfish (E) - Cyprinodon elegans

Golden-cheeked warbler (E) - Dendroica chrysoparia

Black-capped vireo (E) - Vireo atricapillus

Tobusch fishhook cactus (E) - Ancistrocactus tobuschii

Texas snowbells (E) - Styrax texana

VAL VERDE

Bald eagle (E) - Haliaeetus leucocephalus

Black-capped vireo (E) - Vireo atricapillus

Interior least tern (E) - Sterna antillarum

Texas snowbells (E) - Styrax texana

Tobusch fishhook cactus (E) - Ancistrocactus tobuschii

WASHINGTON

Attwater's greater prairie chicken (E) - Tympanuchus cupido attwateri

Bald eagle (E) - Haliaeetus leucocephalus

Navasota ladies'-tresses (E) - Spiranthes parksii

WILLIAMSON

Black-capped vireo (E) - Vireo atricapillus

Golden-cheeked warbler (E) - Dendroica chrysoparia

Bee Creek cave harvestman (E) - Texella reddelli

Tooth Cave ground beetle (E) - Rhadine persephone

Kretschmarr Cave mold beetle (E) - Texamaurops reddelli

Whooping crane (E) - Grus americana

ENCLOSURE 3  
 COUNTY BY COUNTY LIST  
 CLEAR LAKE ECOLOGICAL SERVICES FIELD OFFICES

FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES

IN CLEAR LAKE, TEXAS, FIELD OFFICE AREA

Common Name	Occurrence Scientific Name	(in CL area)
<b><u>PLANTS:</u></b>		
E Navasota ladies'- tresses	<u>Spiranthes parksii</u>	Jasper
E Prairie dawn	<u>Hymenoxys texana</u>	Fort Bend Harris
E Texas trailing phlox	<u>Phlox nivalis</u> var. <u>texensis</u>	Hardin Polk (H) Tyler
E White bladderpod	<u>Lesquerella pallida</u>	San Augustine
<b><u>AMPHIBIANS:</u></b>		
E/CH Houston toad	<u>Bufo houstonensis</u>	C—Austin Colorado H—Fort Bend Harris Liberty P—Montgomery Polk San Jacinto Walker Waller
<b><u>REPTILES:</u></b>		
T Green sea turtle	<u>Chelonia mydas</u>	

E/CH Hawksbill sea turtle  
E Kemp's ridley sea turtle  
E/CH Leatherback sea turtle  
T Loggerhead sea turtle

Eretmochelys imbricata  
Lepidochelys kempii  
Dermochelys coriacea  
Caretta caretta

|  
All coastal  
areas  
|

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**MAMMALS:**

T Louisiana black bear

Ursus americanus  
luteolus

All  
counties (H)

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## Listed Species - continued

Status	Common Name	Scientific Name	Occurrence (in CL area)
<b>BIRDS:</b>			
T	Arctic peregrine falcon (spring/fall migrant, winter resident)	<u>Falco peregrinus</u> <u>tundrius</u>	All counties
E	Attwater's greater prairie-chicken (year-round resident)	<u>Tympanuchus cupido</u> <u>attwateri</u>	Austin Colorado Galveston
E	Bald eagle (nesting, winter resident, spring/fall migrant)	<u>Haliaeetus leucocephalus</u>	All counties
E	Brown pelican (year-round resident)	<u>Pelecanus occidentalis</u>	All coastal areas
E	Eskimo Curlew (possible spring migrant)	<u>Numenius borealis</u>	Chambers Galveston
T	Piping plover (winter resident)	<u>Charadrius melodus</u>	All coastal areas
E	Red-cockaded woodpecker (year-round resident)	<u>Picoides borealis</u>	Angelina (Cherokee) Hardin/Harris Houston/Jasper Liberty Montgomery Nacogdoches Newton/Polk Sabine/San Augustine/ San Jacinto Shelby/Trinity Tyler/Walker
E/CH	Whooping crane (possible winter visitor)	<u>Grus americana</u>	Brazoria Matagorda

**E = Listed as endangered**  
**T = Listed as threatened**  
**C = Confirmed occurrence**  
**H = Historical occurrence only (no known extant population)**  
**P = Potential occurrence (if habitat exists)**  
**CH = Federally-designated critical habitat exists for species**

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**ENCLOSURE 4**  
**COUNTY BY COUNTY LIST**  
**CORPUS CHRISTI ECOLOGICAL SERVICES FIELD OFFICES**

**Aransas**

American peregrine falcon (*Falco peregrinus anatum*) - E  
Attwater's prairie chicken (*Tympanuchus cupido attwateri*) - E  
bald eagle (*Haliaeetus leucocephalus*) - E  
brown pelican (*Pelecanus occidentalis*) - E  
hawksbill sea turtle (*Eretmochelys imbricata*) - E  
jaguarundi (*Felis yagouaroundi*) - E  
Kemp's ridley sea turtle (*Lepidochelys kemp*) - E  
leatherback sea turtle (*Dermochelys coriacea*) - E  
ocelot (*Felis pardalis*) - E  
whooping crane (*Grus americana*) - E  
Arctic peregrine falcon (*Falco peregrinus tundrius*) - T  
green sea turtle (*Chelonia mydas*) - T  
loggerhead sea turtle (*Caretta caretta*) - T  
piping plover (*Charadrius melodus*) - T  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Gulf salt marsh snake (*Nerodia clarki*) - C2  
Aransas short-tailed shrew (*Blarina hylophaga plumbea*) - C2  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
black-spotted newt (*Notophthalmus meridionalis*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
mountain plover (*Charadrius montanus*) - C2  
reddish egret (*Egretta rufescens*) - C2  
Texas Botteri's sparrow (*Aimophila botterii texana*) - C2  
Texas diamondback terrapin (*Malaclemys terrapin littoralis*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2  
western snowy plover (*Charadrius alexandrinus nivosus*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

**Atascosa**

ocelot (*Felis pardalis*) - E  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2



mountain plover (*Charadrius montanus*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2

#### Bee

Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
mountain plover (*Charadrius montanus*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

#### Brooks

jaguarundi (*Felis yagouaroundi*) - E  
ocelot (*Felis pardalis*) - E  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
Bailey's ballmoss (*Tillandsia baileyi*) - C2  
Falfurrias milkvine (*Matelea radiata*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
prostrate milkweed (*Asclepias prostrata*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2

#### Calhoun

American peregrine falcon (*Falco peregrinus anatum*) - E  
bald eagle (*Haliaeetus leucocephalus*) - E  
brown pelican (*Pelecanus occidentalis*) - E  
hawksbill sea turtle (*Eretmochelys imbricata*) - E  
Kemp's ridley sea turtle (*Lepidochelys kemp*) - E  
leatherback sea turtle (*Dermochelys coriacea*) - E  
whooping crane (*Grus americana*) - E  
Arctic peregrine falcon (*Falco peregrinus tundrius*) - T  
green sea turtle (*Chelonia mydas*) - T

loggerhead sea turtle (*Caretta caretta*) - T  
piping plover (*Charadrius melodus*) - T  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
ferruginous hawk (*Buteo regalis*) - C2  
Gulf salt marsh snake (*Nerodia clarki*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
reddish egret (*Egretta rufescens*) - C2  
Texas diamondback terrapin (*Malaclemys terrapin littoralis*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
western snowy plover (*Charadrius alexandrinus nivosus*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

### Cameron

American peregrine falcon (*Falco peregrinus anatum*) - E  
bald eagle (*Haliaeetus leucocephalus*) - E  
brown pelican (*Pelecanus occidentalis*) - E  
hawksbill sea turtle (*Eretmochelys imbricata*) - E  
jaguarundi (*Felis yagouaroundi*) - E  
Kemp's ridley sea turtle (*Lepidochelys kemp*) - E  
leatherback sea turtle (*Dermochelys coriacea*) - E  
northern aplomado falcon (*Falco femoralis septentrionalis*) - E  
ocelot (*Felis pardalis*) - E  
Arctic peregrine falcon (*Falco peregrinus tundrius*) - T  
green sea turtle (*Chelonia mydas*) - T  
loggerhead sea turtle (*Caretta caretta*) - T  
piping plover (*Charadrius melodus*) - T  
cactus ferruginous pygmy owl (*Glauucidium brasiliarium cactorum*) - C1  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
South Texas ambrosia (*Ambrosia cheiranthifolia*) - C1  
Texas ayenia (*Ayenia limitaris*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
Bailey's ballmoss (*Tillandsia baileyi*) - C2  
black-spotted newt (*Notophthalmus meridionalis*) - C2  
Brownsville common yellowthroat (*Geothlypis trichas insperata*) - C2  
Chandler craig-lily (*Anthericum chandleri*) - C2  
Coue's rice rat (*Oryzomys couesi aquaticus*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
marshelder dodder (*Cuscuta attenuata*) - C2  
mountain plover (*Charadrius montanus*) - C2  
northern gray hawk (*Buteo nitidus*) - C2  
reddish egret (*Egretta rufescens*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2

Runyon's water-willow (*Justicia runyonii*) - C2  
Sennett's hooded oriole (*Icterus cucullatus sennettii*) - C2  
short-fruited spikerush (*Eleocharis brachycarpa*) - C2  
Texas Botteri's sparrow (*Aimophila botterii texana*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
tropical parula (*Parula pitiayumi nigrilora*) - C2  
western snowy plover (*Charadrius alexandrinus nivosus*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

#### Dewitt

Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
Cagle's map turtle (*Graptemys caglei*) - C2

#### Dimmit

ocelot (*Felis pardalis*) - E  
Carrizo Springs pocket gopher (*Geomys personatus streckeri*) - C2  
Dimmit sunflower (*Helianthus praecox* var. *hirtus*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
Mexican hooded oriole (*Icterus cucullatus cucullatus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
mountain plover (*Charadrius montanus*) - C2  
reticulate collared lizard (*Crotaphytus reticulatus*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2

#### Duval

ocelot (*Felis pardalis*) - E  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
reticulate collared lizard (*Crotaphytus reticulatus*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2

Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2

### Frio

northern aplomado falcon (*Falco femoralis septentrionalis*) - E

ferruginous hawk (*Buteo regalis*) - C2

long-billed curlew (*Numenius americanus*) - C2

loggerhead shrike (*Lanius ludovicianus*) - C2

reticulate collared lizard (*Crotaphytus reticulatus*) - C2

Texas horned lizard (*Phrynosoma cornutum*) - C2

### Goliad

Attwater's prairie chicken (*Tympanuchus cupido attwateri*) - E

bald eagle (*Haliaeetus leucocephalus*) - E

Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1

long-billed curlew (*Numenius americanus*) - C2

Runyon's water-willow (*Justicia runyonii*) - C2

Texas horned lizard (*Phrynosoma cornutum*) - C2

### Gonzales

Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1

Cagle's map turtle (*Graptemys caglei*) - C2

ferruginous hawk (*Buteo regalis*) - C2

Guadalupe bass (*Micropterus treculi*) - C2

Houston meadowrue (*Thalictrum texanum*) - C2

loggerhead shrike (*Lanius ludovicianus*) - C2

Texas horned lizard (*Phrynosoma cornutum*) - C2

### Hidalgo

American peregrine falcon (*Falco peregrinus anatum*) - E

jaguarundi (*Felis yagouaroundi*) - E

northern aplomado falcon (*Falco femoralis septentrionalis*) - E

ocelot (*Felis pardalis*) - E

Walker's manioc (*Manihot walkerae*) - E

Arctic peregrine falcon (*Falco peregrinus tundrius*) - T

cactus ferruginous pygmy owl (*Glaucidium brasiliarium cactorum*) - C1

Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Texas ayenia (*Ayenia limitaris*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
black-spotted newt (*Notophthalmus meridionalis*) - C2  
Bailey's ballmoss (*Tillandsia baileyi*) - C2  
Brownsville common yellowthroat (*Geothlypis trichas insperata*) - C2  
Coue's rice rat (*Oryzomys couesi aquaticus*) - C2  
Falfurrias milkvine (*Matelea radiata*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
mountain plover (*Charadrius montanus*) - C2  
northern gray hawk (*Buteo nitidus*) - C2  
reticulate collared lizard (*Crotaphytus reticulatus*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Runyon's huaco (*Manfreda longiflora*) - C2  
Runyon's water-willow (*Justicia runyonii*) - C2  
Sennett's hooded oriole (*Icterus cucullatus sennettii*) - C2  
small papillosus (*Echinocereus papillosus* var. *angusticeps*) - C2  
Texas Botteri's sparrow (*Aimophila botterii texana*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2  
Texas windmill grass (*Chloris texensis*) - C2  
tropical parula (*Parula pitiayumi nigrilora*) - C2  
western snowy plover (*Charadrius alexandrinus nivosus*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

#### Jackson

bald eagle (*Haliaeetus leucocephalus*) - E  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
ferruginous hawk (*Buteo regalis*) - C2  
Gulf salt marsh snake (*Nerodia clarki*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
marshelder dodder (*Cuscuta attenuata*) - C2  
reddish egret (*Egretta rufescens*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

#### Jim Hogg

ocelot (*Felis pardalis*) - E  
bushy whitlow-wort (*Paronychia congesta*) - C1

Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
northern gray hawk (*Buteo nitidus*) - C2  
reticulate collared lizard (*Crotaphytus reticulatus*) - C2  
Sennett's hooded oriole (*Icterus cucullatus sennettii*) - C2  
small papillosus (*Echinocereus papillosus* var. *angusticeps*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2

#### Jim Wells

black-lace cactus (*Echinocereus reichenbachii* var. *albertii*) - E  
jaguarundi (*Felis yagouaroundi*) - E  
ocelot (*Felis pardalis*) - E  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
South Texas ambrosia (*Ambrosia cheiranthifolia*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
mountain plover (*Charadrius montanus*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Sennett's hooded oriole (*Icterus cucullatus sennettii*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2

#### Karnes

Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
loggerhead shrike (*Lanius ludovicianus*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2

#### Kenedy

American peregrine falcon (*Falco peregrinus anatum*) - E  
brown pelican (*Pelecanus occidentalis*) - E  
hawksbill sea turtle (*Eretmochelys imbricata*) - E  
jaguarundi (*Felis yagouaroundi*) - E  
Kemp's ridley sea turtle (*Lepidochelys kempi*) - E  
leatherback sea turtle (*Dermochelys coriacea*) - E  
ocelot (*Felis pardalis*) - E  
Arctic peregrine falcon (*Falco peregrinus tundrius*) - T  
green sea turtle (*Chelonia mydas*) - T

loggerhead sea turtle (*Caretta caretta*) - T  
piping plover (*Charadrius melodus*) - T  
cactus ferruginous pygmy owl (*Glaucidium brasiliarium cactorum*) - C1  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
Bailey's ballmoss (*Tillandsia baileyi*) - C2  
black-spotted newt (*Notophthalmus meridionalis*) - C2  
Coue's rice rat (*Oryzomys couesi aquaticus*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
reddish egret (*Egretta rufescens*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
rough-seed sea purslane (*Sesuvium trianthemoides*) - C2  
Sennett's hooded oriole (*Icterus cucullatus sennettii*) - C2  
Texas Botteri's sparrow (*Aimophila botterii texana*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2  
tropical parula (*Parula pitaiayumi nigrilora*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

#### Kleberg

American peregrine falcon (*Falco peregrinus anatum*) - E  
bald eagle (*Haliaeetus leucocephalus*) - E  
black-lace cactus (*Echinocereus reichenbachii* var. *albertii*) - E  
brown pelican (*Pelecanus occidentalis*) - E  
hawksbill sea turtle (*Eretmochelys imbricata*) - E  
jaguarundi (*Felis yagouaroundi*) - E  
Kemp's ridley sea turtle (*Lepidochelys kempii*) - E  
leatherback sea turtle (*Dermochelys coriacea*) - E  
ocelot (*Felis pardalis*) - E  
slender rushpea (*Hoffmannseggia tenella*) - E  
Arctic peregrine falcon (*Falco peregrinus tundrius*) - T  
green sea turtle (*Chelonia mydas*) - T  
loggerhead sea turtle (*Caretta caretta*) - T  
piping plover (*Charadrius melodus*) - T  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
South Texas ambrosia (*Ambrosia cheiranthifolia*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
Bailey's ballmoss (*Tillandsia baileyi*) - C2  
black-spotted newt (*Notophthalmus meridionalis*) - C2  
Chandler craig-lily (*Anthericum chandleri*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
mountain plover (*Charadrius montanus*) - C2

reddish egret (*Egretta rufescens*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Sennett's hooded oriole (*Icterus cucullatus sennettii*) - C2  
Texas Botteri's sparrow (*Aimophila botterii texana*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2  
western snowy plover (*Charadrius alexandrinus nivosus*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

### La Salle

Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2

### Lavaca

Houston toad (*Bufo houstonensis*) - E  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
loggerhead shrike (*Lanius ludovicianus*) - C2

### Live Oak

jaguarundi (*Felis yagouaroundi*) - E  
ocelot (*Felis pardalis*) - E  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
Mathis spiderling (*Boerhavia mathisiana*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2

### Maverick

ocelot (*Felis pardalis*) - E  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
Mexican hooded oriole (*Icterus cucullatus cucullatus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2



mountain plover (*Charadrius montanus*) - C2  
northern gray hawk (*Buteo nitidus*) - C2  
reticulate collared lizard (*Crotaphytus reticulatus*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas trumpets (*Acleisanthes crassifolia*) - C2

### McMullen

ocelot (*Felis pardalis*) - E  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
reticulate collared lizard (*Crotaphytus reticulatus*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2

### Nueces

American peregrine falcon (*Falco peregrinus anatum*) - E  
brown pelican (*Pelecanus occidentalis*) - E  
hawksbill sea turtle (*Eretmochelys imbricata*) - E  
jaguarundi (*Felis yagouaroundi*) - E  
Kemp's ridley sea turtle (*Lepidochelys kempii*) - E  
leatherback sea turtle (*Dermochelys coriacea*) - E  
ocelot (*Felis pardalis*) - E  
slender rushpea (*Hoffmannseggia tenella*) - E  
Arctic peregrine falcon (*Falco peregrinus tundrius*) - T  
green sea turtle (*Chelonia mydas*) - T  
loggerhead sea turtle (*Caretta caretta*) - T  
piping plover (*Charadrius melodus*) - T  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
South Texas ambrosia (*Ambrosia cheiranthifolia*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
black-spotted newt (*Notophthalmus meridionalis*) - C2  
Chandler craig-lily (*Anthericum chandleri*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
mountain plover (*Charadrius montanus*) - C2  
northern gray hawk (*Buteo nitidus*) - C2  
reddish egret (*Egretta rufescens*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Sennett's hooded oriole (*Icterus cucullatus sennettii*) - C2

Texas Botteri's sparrow (*Aimophila botterii texana*) - C2  
Texas diamondback terrapin (*Malaclemys terrapin littoralis*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas maritime pocket gopher (*Geomys personatus maritimus*) - C2  
Thieret's skullcap (*Scutellaria thieretii*) - C2  
western snowy plover (*Charadrius alexandrinus nivosus*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

### Refugio

Attwater's prairie chicken (*Tympanuchus cupido attwateri*) - E  
bald eagle (*Haliaeetus leucocephalus*) - E  
black-lace cactus (*Echinocereus reichenbachii* var. *albertii*) - E  
hawksbill sea turtle (*Eretmochelys imbricata*) - E  
Kemp's ridley sea turtle (*Lepidochelys kempii*) - E  
leatherback sea turtle (*Dermochelys coriacea*) - E  
whooping crane (*Grus americana*) - E  
green sea turtle (*Chelonia mydas*) - T  
loggerhead sea turtle (*Caretta caretta*) - T  
piping plover (*Charadrius melodus*) - T  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
black-spotted newt (*Notophthalmus meridionalis*) - C2  
Cagle's map turtle (*Graptemys caglei*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
mountain plover (*Charadrius montanus*) - C2  
northern gray hawk (*Buteo nitidus*) - C2  
reddish egret (*Egretta rufescens*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Texas diamondback terrapin (*Malaclemys terrapin littoralis*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2  
Texas windmill grass (*Chloris texensis*) - C2  
Welder spine aster (*Machaeranthera heterocarpa*) - C2  
western snowy plover (*Charadrius alexandrinus nivosus*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

### San Patricio

American peregrine falcon (*Falco peregrinus anatum*) - E  
brown pelican (*Pelecanus occidentalis*) - E  
hawksbill sea turtle (*Eretmochelys imbricata*) - E  
jaguarundi (*Felis yagouaroundi*) - E

Kemp's ridley sea turtle (*Lepidochelys kempi*) - E  
leatherback sea turtle (*Dermochelys coriacea*) - E  
ocelot (*Felis pardalis*) - E  
Arctic peregrine falcon (*Falco peregrinus tundrius*) - T  
green sea turtle (*Chelonia mydas*) - T  
loggerhead sea turtle (*Caretta caretta*) - T  
piping plover (*Charadrius melodus*) - T  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
black-spotted newt (*Notophthalmus meridionalis*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
Mathis spiderling (*Boerhavia mathisiana*) - C2  
mountain plover (*Charadrius montanus*) - C2  
reddish egret (*Egretta rufescens*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Sennett's hooded oriole (*Icterus cucullatus sennettii*) - C2  
Texas diamondback terrapin (*Malaclemys terrapin littoralis*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2  
Welder spine aster (*Machaeranthera heterocarpa*) - C2  
western snowy plover (*Charadrius alexandrinus nivosus*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

#### Starr

ashy dogweed (*Thymophylla tephroleuca*) - E  
interior least tern (*Sterna antillarum athalassos*) - E  
jaguarundi (*Felis yagouaroundi*) - E  
Johnston's frankenia (*Frankenia johnstonii*) - E  
ocelot (*Felis pardalis*) - E  
Walker's manioc (*Manihot walkerae*) - E  
cactus ferruginous pygmy owl (*Glaucidium brasiliarium cactorum*) - C1  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
star cactus (*Echinocactus asterias*) - C1  
Zapata bladderpod (*Lesquerella thamnophila*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
Brownsville common yellowthroat (*Geothlypis trichas insperata*) - C2  
Coue's rice rat (*Oryzomys couesi aquaticus*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
marble-fruited prickly pear (*Opuntia engelmannii* var. *flexospina*) - C2  
northern gray hawk (*Buteo nitidus*) - C2  
prostrate milkweed (*Asclepias prostrata*) - C2

reticulate collared lizard (*Crotaphytus reticulatus*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Runyon's huaco (*Manfreda longiflora*) - C2  
Sennett's hooded oriole (*Icterus cucullatus sennettii*) - C2  
small papillosus (*Echinocereus papillosus* var. *angusticeps*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
tropical parula (*Parula pitiayumi nigrilora*) - C2

## Victoria

Attwater's prairie chicken (*Tympanuchus cupido attwateri*) - E  
bald eagle (*Haliaeetus leucocephalus*) - E  
whooping crane (*Grus americana*) - E  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
black-spotted newt (*Notophthalmus meridionalis*) - C2  
Cagle's map turtle (*Graptemys caglei*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
Guadalupe bass (*Micropterus treculi*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
mountain plover (*Charadrius montanus*) - C2  
reddish egret (*Egretta rufescens*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

## Webb

ashy dogweed (*Thymophylla tephroleuca*) - E  
interior least tern (*Sterna antillarum athalassos*) - E  
ocelot (*Felis pardalis*) - E  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
Correll's false dragon-head (*Physostegia correllii*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
Maccart's whitlow-wort (*Paronychia maccartii*) - C2  
marble-fruited prickly pear (*Opuntia engelmannii* var. *flexospina*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
mountain plover (*Charadrius montanus*) - C2  
Nickel's pincushion (*Coryphantha sulcata* var. *nickelsiae*) - C2  
northern gray hawk (*Buteo nitidus*) - C2  
reticulate collared lizard (*Crotaphytus reticulatus*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Sennett's hooded oriole (*Icterus cucullatus sennettii*) - C2

Texas horned lizard (*Phrynosoma cornutum*) - C2

### Willacy

American peregrine falcon (*Falco peregrinus anatum*) - E  
brown pelican (*Pelecanus occidentalis*) - E  
hawksbill sea turtle (*Eretmochelys imbricata*) - E  
jaguarundi (*Felis yagouaroundi*) - E  
Kemp's ridley sea turtle (*Lepidochelys kempi*) - E  
leatherback sea turtle (*Dermochelys coriacea*) - E  
ocelot (*Felis pardalis*) - E  
Arctic peregrine falcon (*Falco peregrinus tundrius*) - T  
green sea turtle (*Chelonia mydas*) - T  
loggerhead sea turtle (*Caretta caretta*) - T  
piping plover (*Charadrius melodus*) - T  
cactus ferruginous pygmy owl (*Glaucidium brasiliarium cactorum*) - C1  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
Bailey's ballmoss (*Tillandsia baileyi*) - C2  
black-spotted newt (*Notophthalmus meridionalis*) - C2  
Brownsville common yellowthroat (*Geothlypis trichas insperata*) - C2  
Coue's rice rat (*Oryzomys couesi aquaticus*) - C2  
ferruginous hawk (*Buteo regalis*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
mountain plover (*Charadrius montanus*) - C2  
reddish egret (*Egretta rufescens*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Sennett's hooded oriole (*Icterus cucullatus sennettii*) - C2  
Texas Botteri's sparrow (*Aimophila botterii texana*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2  
western snowy plover (*Charadrius alexandrinus nivosus*) - C2  
white-faced ibis (*Plegadis chihi*) - C2

### Wilson

Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
big red sage (*Salvia penstemonoides*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2

### Zapata

ashy dogweed (*Thymophylla tephroleuca*) - E

interior least tern (*Sterna antillarum athalassos*) - E  
jaguarundi (*Felis yagouaroundi*) - E  
Johnston's frankenia (*Frankenia johnstonii*) - E  
ocelot (*Felis pardalis*) - E  
Gulf Coast hog-nosed skunk (*Conepatus leuconotus texensis*) - C1  
Zapata bladderpod (*Lesquerella thamnophila*) - C1  
Audubon's oriole (*Icterus graduacauda audubonii*) - C2  
Correll's false dragon-head (*Physostegia correllii*) - C2  
Dimmit sunflower (*Helianthus praecox* var. *hirtus*) - C2  
long-billed curlew (*Numenius americanus*) - C2  
marble-fruited prickly pear (*Opuntia engelmannii* var. *flexospina*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
northern gray hawk (*Buteo nitidus*) - C2  
prostrate milkweed (*Asclepias prostrata*) - C2  
reticulate collared lizard (*Crotaphytus reticulatus*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2  
Texas olive sparrow (*Arremonops rufivirgatus rufivirgatus*) - C2

#### Zavala

long-billed curlew (*Numenius americanus*) - C2  
Mexican hooded oriole (*Icterus cucullatus cucullatus*) - C2  
loggerhead shrike (*Lanius ludovicianus*) - C2  
Rio Grande lesser siren (*Siren intermedia texana*) - C2  
Texas horned lizard (*Phrynosoma cornutum*) - C2

**ENCLOSURE 5**  
**STATEWIDE MIGRATORY LISTED SPECIES**  
**Texas Department of Agriculture**

<u>Listed species</u>		<u>Status</u>
American peregrine falcon Statewide migrant	( <u>Falco peregrinus anatum</u> )	ENDANGERED
Arctic peregrine falcon Statewide migrant	( <u>Falco peregrinus tundrius</u> )	THREATENED
Bald eagle Statewide migrant	( <u>Haliaeetus leucocephalus</u> )	ENDANGERED
Interior least tern Statewide migrant	( <u>Sterna antillarum athalassos</u> )	ENDANGERED
Piping plover Statewide migrant	( <u>Charadrius melodus</u> )	THREATENED
Whooping crane Migrates through central Texas	( <u>Grus americana</u> )	ENDANGERED







TEXAS DEPARTMENT OF AGRICULTURE

RICK PERRY  
Commissioner

July 28, 1992

Mr. Sam Hamilton  
U.S. Fish & Wildlife Service  
Ecological Services  
611 East 6th Street, Suite 407  
Austin, Texas 78701

Dear Mr. Hamilton:

On May 29, 1992, EPA granted a specific exemption for the use of esfenvalerate (Asana XL, EPA Reg. No. 353-515) to control the sorghum midge/headworm complex in 131 counties in Texas, located primarily in East and South Texas. The Texas Department of Agriculture (TDA) hereby notifies your agency of its intent to submit an application to EPA, amending this specific exemption to include the entire state.

Texas Agricultural Extension Service entomologists have notified TDA that weather related events in the High and Rolling Plains of Texas have created a high probability for sorghum midge and headworm infestations causing significant economic loss. The situation is compounded by the loss of approximately 1 million acres of cotton, due to weather conditions. Grain sorghum will be the substitute crop for most of this acreage.

This letter constitutes an offer for you to express any concerns you may have regarding this proposed use. If you have any questions regarding this amendment, please contact me at (512) 463-7544 or Elvis Cozart at (512) 463-7544.

Sincerely,

Terry Mitchell  
Registration Specialist

TM/ERC/rb



TEXAS DEPARTMENT OF AGRICULTURE

April 15, 1992

RICK PERRY  
Commissioner

Mr. Sam Hamilton  
U.S. Fish & Wildlife Service  
Ecological Services  
611 East 6th Street, Suite 407  
Austin, Texas 78701

Dear Mr. Hamilton:

Pursuant to the requirements of 40 CFR 166.20(a)(8), the Texas Department of Agriculture (TDA) hereby notifies your agency of its intent to submit an application for an emergency specific exemption to the U. S. Environmental Protection Agency (EPA). If approved, the application will authorize the use of esfenvalerate (Asana XL, EPA Reg. No. 353-515) on grain sorghum to control the Sorghum midge/Sorghum headworm complex. This letter constitutes an offer for you to express any concerns you may have regarding this proposed use.

It is estimated that 25% of the requested site or approximately 580,000 acres of sorghum will not be planted early enough to avoid infestation of these insect pests, and may require treatment. Because of unusual wet conditions early uniform regional planting has not been possible. Uniform planting is the most significant management strategy for avoiding sorghum midge and panicle feeding caterpillars.

To aid in your deliberations, the following is provided:

- Label for Asana XL
- EPA Pesticide Fact Sheet for esfenvalerate
- Residue tolerance information
- A map of Texas that identifies the counties in the requested site
- A map of Texas that identifies the sorghum producing areas of the state

If you have any questions regarding the above information, please contact me at (512) 463-7545 or Elvis Cozart at (512) 463-7544.

Sincerely,

Terry Mitchell  
Registration Specialist

TM/ERC/rb

P.O. Box 12847, Austin, Texas 78711 • (512) 463-7476

Enclosures

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