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OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

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MEMORANDUM

SUBJECT: **REVISED** Ecological Risk Assessment for the Prothioconazole Section 3 New Use on Soybeans and Sugar Beets

TO: Tony Kish, Product Manager
Bryant Crow, Team Leader
Fungicide Branch
Registration Division (7505P)

FROM: Anita Pease, Senior Biologist 1/28/08
Marietta Echeverria, Risk Assessment Process Lead 1/23/08
Environmental Risk Branch IV
Environmental Fate and Effects Division (7507P)

REVIEWED BY: Melissa Panger, Ph.D., Biologist 1-28-08
Environmental Risk Branch IV
Environmental Fate and Effects Division (7507P)

APPROVED BY: Elizabeth Behl, Branch Chief 1/28/08
Environmental Risk Branch IV
Environmental Fate and Effects Division (7507P)

The Environmental Fate and Effects Division (EFED) has reviewed the proposed label for the use of prothioconazole (JAU64746; 2-(2-(1-chlorocylocpropyl)-3-(2-chlorophenyl)-2-hydroxy-propyl)-2,4-dihydro(1,2,4)-triazol-3-thion; CAS#: 178928-70-6; PC Code: 113961), and its end-use product PROLINE® 480SC (41.0 % a.i.) fungicide on soybeans and sugar beets. **This assessment replaces a previous version submitted on December 17, 2007 by correcting the toxicity endpoints and associated risk conclusions for aquatic freshwater non-vascular plants.**

The results of this screening-level risk assessment indicate that the proposed new uses of prothioconazole on soybeans and sugar beets have the potential for direct adverse effects on listed and non-listed estuarine/marine non-molluskan invertebrates, listed freshwater vascular and non-vascular plants, listed and non-listed saltwater non-vascular plants, listed and non-listed mammals (chronic), and listed semi-aquatic dicot plants.

1. Executive Summary

EFED has completed a review of the Section 3 new use request for the use of prothioconazole (JAU64746; 2-(2-(1-chlorocylocpropyl)-3-(2-chlorophenyl)-2-hydroxy-propyl)-2,4-dihydro(1,2,4)-triazol-3-thion; CAS#: 178928-70-6; PC Code: 113961), and its end-use product PROLINE® 480SC (41.0 % a.i.) fungicide on soybeans and sugar beets. Prothioconazle is a broad-spectrum, systemic fungicide. The compound is in the conazole (triazolinthione) class of fungicides and acts through disruption of normal fungal cell membrane structure and function via interaction or inhibition of ergosterol synthesis. Prothioconazole is currently registered for use on barley, canola, chickpea, dried shell peas and beans, lentils, oilseed crop, peanut, and numerous varieties of wheat. An ecological risk assessment of these registered uses was completed in June of 2006 (U.S. EPA, 2006; DP 324660).

The proposed maximum application rates for prothioconazole use on soybeans and sugar beets range from 0.09375 to 0.1781 lbs a.i./A. Prothioconazole may be applied via ground and/or aerial spray, up to three times per year, for both of the proposed new uses. The minimum application intervals for soybeans and sugar beets are 10 and 14 days, respectively. Application rates for the proposed new uses are lower than the maximum seasonal rate currently registered for prothioconazole of 0.71 lbs a.i./A (for peanuts). In addition, the proposed application rate and number of applications for sugar beets (0.1781 lbs a.i./A; 3 applications/year) are the same as currently registered application rates for chickpeas, dried shell peas and beans, and lentils.

Prothioconazole appears to degrade relatively quickly in the environment; however, its degradates, primarily prothioconazole-desthio and prothioconazole-S-methyl, are persistent and of similar toxicity as the parent. Based on uncertainties associated with biotic degradation rates for prothioconazole alone, due to ineffective extraction methods in soil and sediment metabolism studies, a total toxic residues approach was used for aquatic exposure modeling. Combined residues of concern include prothioconazole, prothioconazole-desthio, and prothioconazole-S-methyl.

Although a total toxic residues approach is used for estimation of prothioconazole for aquatic species, the total mass of applied material is used to estimate exposure to terrestrial organisms. Tools are not currently available that would allow terrestrial exposure to be compartmentalized into the contributions of parent and degradates.

The toxicity of prothioconazole is based on registrant-submitted data on the parent, prothioconazole, and its major degradates (-desthio and –S-methyl), as well as open

literature data from the ECOTOX database. Given the uncertainties associated with accurately predicting the concentrations of parent prothioconazole and its degradates, the lowest available toxicity endpoint, regardless of the exposure chemical, is used in this assessment. The acute toxicological profile indicates that prothioconazole and its degradates are practically non-toxic to mammals, birds, and non-target insects, and moderately toxic to freshwater animals. The degradate, prothioconazole-desthio, is highly toxic to some taxa; the most sensitive taxa appear to be aquatic plants followed by estuarine/marine non-molluskan invertebrates. In addition, prothioconazole-desthio may cause growth and reproductive effects in mammals when chronically exposed.

The results of this screening-level risk assessment indicate that the proposed new uses of prothioconazole on sugar beets and soybeans have the potential for direct adverse effects on listed and non-listed estuarine/marine non-molluskan invertebrates, listed freshwater vascular and non-vascular plants, listed and non-listed saltwater non-vascular plants, listed and non-listed mammals (chronic), and listed semi-aquatic dicot plants.

Potential effects to federally-listed endangered and threatened species (listed species) based on LOC exceedances require an in-depth listed species evaluation determining the potential co-occurrence of listed species and the areas in which sugar beets and soybeans are grown. Identified potential risks to listed species are summarized in **Table 1.1.**

Table 1.1. Listed Species Risks Associated with Potential Direct or Indirect Effects Due to the Proposed Applications of Prothioconazole on Sugar Beets and Soybeans

Listed Species Taxonomic Group of Concern	Direct Effects	Indirect Effects[1]
Aquatic vascular plants	Acute: growth	YES
Non-vascular plants	Acute: cell density	YES
Estuarine/marine non-vascular plants	Acute: biomass	YES
Dicot terrestrial plants[2]	Acute: plant growth	YES
Monocot terrestrial plants	None	YES
Freshwater fish	None	YES
Saltwater fish	None	YES
Freshwater invertebrates	None	YES
Estuarine/marine invertebrates	Acute: mortality Chronic: reproduction	YES

Table 1.1. Listed Species Risks Associated with Potential Direct or Indirect Effects Due to the Proposed Applications of Prothioconazole on Sugar Beets and Soybeans		
Listed Species Taxonomic Group of Concern	**Direct Effects**	**Indirect Effects[1]**
Mollusks	None	YES
Mammals	Chronic: reproduction, growth	YES
Birds	None	YES
Terrestrial invertebrates	None	YES

[1] The potential for adverse effects to those species that rely on a specific plant or animal species (specifically aquatic plants, terrestrial dicots, mammals, or estuarine/marine invertebrates) or multiple plant or animal species (specifically aquatic plants, terrestrial dicots, mammals, or estuarine/marine invertebrates) cannot be precluded. Indirect effects may include general habitat modification, host plant loss, and food supply disruption.
[2] Direct effects to listed dicot plants are relevant for only semi-aquatic plant species. Direct effects to listed terrestrial upland plants are not expected.

2. Problem Formulation

This assessment evaluates the potential risks to non-target species associated with the proposed use of prothioconazole (JAU64746; 2-(2-(1-chlorocylocpropyl)-3-(2-chlorophenyl)-2-hydroxy-propyl)-2,4-dihydro(1,2,4)-triazol-3-thion; CAS#: 178928-70-6; PC Code: 113961), and its end-use product PROLINE® 480SC (41.0 % a.i.) fungicide on soybeans and sugar beets. The proposed maximum application rate for soybeans is 0.09375 lbs a.i./acre/application with a minimum interval of 10 days between applications. The maximum proposed single application rate to sugar beets is 0.1781 lbs a.i./acre with a minimum interval of 14 days between applications. The proposed methods of application are ground and aerial sprays, and the maximum number of applications allowed per year for both soybeans and sugar beets is three. Prothioconazole is already labeled as a pre- or post-infection fungicide for barley, canola, chickpea, dried shell peas and beans, lentils, oilseed crop, peanut, and numerous varieties of wheat (USEPA, 2006).

This assessment utilizes environmental fate and toxicity data for prothioconazole and two primary degradates, prothioconazole-desthio and prothioconazole-S-methyl. A total toxics residue approach was used to estimate exposure levels for aquatic organisms. Given the uncertainties associated with accurately predicting the concentrations of parent prothioconazole or its degradates, the lowest available toxicity endpoint, regardless of the exposure chemical (i.e., parent or degradate), is used in this assessment.

2.1. Mode of Action

Prothioconazole is a broad-spectrum, systemic fungicide belonging to the conazole (triazolinthione) class of fungicides. Conazole fungicides act through disruption of normal fungal cell membrane structure and function primarily through interactions or inhibitions of ergosterol synthesis, the predominant membrane sterol component. Specifically, fungicidal activity occurs through inhibiting the action of cytochrome P450 (CYP)-51 (lanosterol 14α-demethylase), which converts squalene to ergosterol. In mammals, the CYP51 reaction is part of the pathway leading to the biosynthesis of cholesterol (White et al., 1998). Cholesterol is the primary sterol in the cell membrane of mammalian cells, and is also required to make sex steroid hormones (Payne and Hales, 2004).

2.2. Use Characterization

Prothioconazole is currently used as a pre- or post-infection fungicide on barley, canola, chickpea, dried shell peas and beans, lentils, oilseed crop, peanut, and numerous varieties of wheat. Application rates for the proposed new uses are presented below in **Table 2.1.** Application rates for the previously registered uses assessed in the June 2006 ecological risk assessment (U.S. EPA, 2006; DP 324660) are presented in **Table 2.2.**

Table 2.1. Summary of Use Information for the Proposed New Uses of Prothioconazole

Crop Type	Maximum Rate per Application (lbs a.i./A) and Max. Number of Applications	Maximum Seasonal Application Rate (lbs a.i./A/season)	Application Interval (days)	Pre-Harvest Interval (days)	Application Methods(s)
Soybeans	0.09375 (3)	0.2813	10-21	21	Aerial and ground spray
Sugar beets	0.1781 (3)	0.5343	14-30	7	Aerial and ground spray

Table 2.2. Summary of Use Information for Previously Assessed Prothioconazole Uses, Based on PROLINE® 480SC Fungicide Label

Crop Type	Max. Application Rate (lbs. a.i./A)	Max. No. of Applic.	Max. Seasonal Applic. Rate (lbs. a.i./A)	Applic. Interval (days)	Application Method(s)
Peanut	0.1781	4	0.7124	14	Aerial and ground spray
Chickpea	0.1781	3	0.5343	10 to 14	Aerial and ground spray

Dried shell pea & bean	0.1781	3	0.5343	5 to 14	Aerial and ground spray
Lentil	0.1781	3	0.5343	10 to 14	Aerial and ground spray
Barley	0.1781	2	0.2928	7 to 14	Aerial and ground spray
Canola	0.1781	2	0.3563	5 to 7	Aerial and ground spray
Oilseed crop subgroup	0.1781	2	0.3563	5 to 7	Aerial and ground spray
Wheat	0.1781	2	0.2928	7 to 14	Aerial and ground spray

2.3. Conceptual Model

The conceptual model used to depict the potential ecological risk associated with the proposed use of prothioconazole on soybeans and sugar beets assumes that, as a fungicide, prothioconazole is capable of adversely affecting terrestrial and aquatic animals, provided environmental concentrations are sufficiently elevated as a result of proposed label uses. Based on the preliminary risk screening and past ecological risk assessment, the degradate prothioconazole-desthio is highly toxic to aquatic plants and to estuarine/marine invertebrates on an acute exposure basis and causes potential growth and reproductive effects in mammals when chronically exposed.

The hypothesis for the risks of prothioconazole to non-target animals (depicted in **Figure 2.1**) focuses on both aquatic and terrestrial environments via potential exposure to the parent and/or its degradate from direct spray, spray drift, and runoff. Risk to terrestrial plants is also considered in this screening-level assessment. For terrestrial organisms, the major route of exposure is consumption of food items, such as plant leaves or insects, which contain prothioconazole residues as a result of direct application and/or spray drift. For aquatic animal species, the major routes of exposure are direct contact via the respiratory surface (gills) or the integument. Aquatic vascular and non-vascular plants may also be exposed via direct uptake and adsorption. Estimated exposure concentrations for all organisms are obtained through the use of several Agency exposure models.

The following risk hypothesis is presumed for this screening level assessment:

> *Based on the application method, mode of action, and the sensitivity of non-target aquatic and terrestrial species, the proposed prothioconazole use on soybeans and sugar beets has the potential to reduce survival, reproduction, and/or growth in terrestrial and aquatic organisms.*

In order for a chemical to pose an ecological risk, it must reach non-target organisms at concentrations found to cause adverse effects. The exposure pathway is the means by which a pesticide moves in the environment from the application site to non-target organisms. The assessment of ecological exposure pathways in this assessment includes an examination of the source and routes of transport and dissipation for prothioconazole,

and the determination of potential exposure routes to non-target species, as depicted in **Figure 2.1**.

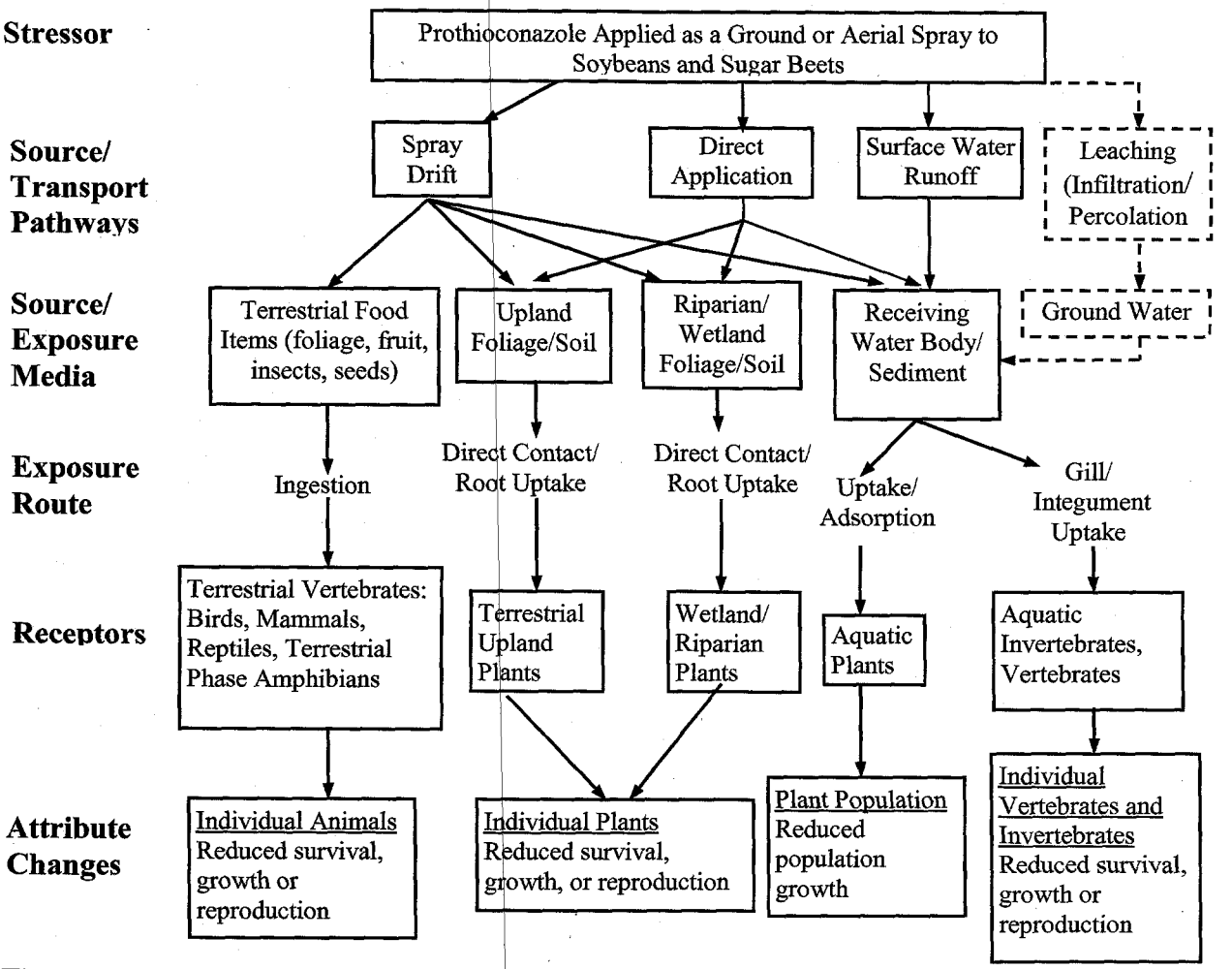

Figure 2.1. Conceptual Model of the Transport and Effects of Prothioconazole in the Environment

*Dotted lines indicate that, although this exposure route/media was considered, its contribution to the fate and transport of prothioconazole is expected to be negligible

2.4. Analysis Plan

2.4.1. Integration of Exposure and Effects

Available exposure and toxicity data are used to evaluate the risks of adverse ecological effects on non-target species. For this screening-level assessment, the risk quotient (RQ) method is used to compare exposure and toxicity values. The RQ method involves dividing estimated environmental concentrations (EECs) by acute and chronic toxicity values. The resulting RQs are then compared to the Agency's levels of concern LOCs (U.S. EPA, 2004; **Table 2.3**). These criteria are used to determine whether new uses for

prothioconazole, as directed on the proposed label, have the potential to cause adverse effects to non-target organisms.

TABLE 2.3. Agency Risk Quotient (RQ) Metrics and Levels of Concern (LOC) Per Risk Class			
RISK CLASS	**RISK DESCRIPTION**	**RQ**	**LOC**
Aquatic Animals (fish and invertebrates)			
Acute	Potential for effects to non-listed animals from acute exposures	Peak EEC/LC_{50}[1]	0.5
Acute Restricted Use	Potential for effects to animals from acute exposures Risks may be mitigated through restricted use classification	Peak EEC/LC_{50}[1]	0.1
Acute Listed Species	Listed species may be potentially affected by acute exposures	Peak EEC/LC_{50}[1]	0.05
Chronic	Potential for effects to non-listed and listed animals from chronic exposures	60-day EEC/NOAEC (fish) 21-day EEC/NOAEC (invertebrates)	1
Aquatic Plants			
Non-Listed	Potential for effects to non-listed plants from exposures	Peak EEC/LC_{50}[1]	1
Listed	Potential for effects to listed plants from exposures	Peak EEC/NOAEL	1
Terrestrial Animals (mammals and birds)			
Acute	Potential for effects to non-listed animals from acute exposures	EEC^2/LC_{50} (Dietary) EEC/LD_{50} (Dose)	0.5
Acute Restricted Use	Potential for effects to animals from acute exposures Risks may be mitigated through restricted use classification	EEC^2/LC_{50} (Dietary) EEC/LD_{50} (Dose)	0.2
Acute Listed Species	Listed species may be potentially affected by acute exposures	EEC^2/LC_{50} (Dietary) EEC/LD_{50} (Dose)	0.1
Chronic	Potential for effects to non-listed and listed animals from chronic exposures	EEC^2/NOAEC	1
Terrestrial and Semi-Aquatic Plants			
Non-Listed	Potential for effects to non-target, non-listed plants from exposures	EEC/ EC_{25}	1
Listed Plant	Potential for effects to non-target, listed plants from exposures	EEC/ NOEC EEC/ EC_{05}	1

[1] LC_{50} or EC_{50}.
[2] Based on upper bound Kenaga values.

3. Analysis

3.1. Exposure Characterization

3.1.1. Environmental Fate and Transport Characterization

Prothioconazole is stable to hydrolysis and degrades by aqueous photolysis ($t_{1/2}$ = 9 d) to prothioconazole-desthio, which appears to resist further photolytic degradation (combined $t_{1/2}$ = 101 d). Prothioconazole and its degradates are not expected to volatilize (vapor pressure < 4 x10^{-7} Pa). Based on available data, prothioconazole together with its major degradates appear to be persistent to microbial degradation in soil ($t_{1/2}$ = 462 – 1386 d) and water ($t_{1/2}$ = 67 – 433 d). Prothioconazole degrades relatively quickly to two major persistent degradates, prothioconazole-desthio and prothioconazole-S-methyl, which are of similar toxicity to that of the parent. Prothioconazole's mobility is unable to be characterized due to quick degradation in mobility studies, but one major degradate formed in large amounts (prothioconazole-desthio) is moderately mobile (K_{oc} = 523 – 625 ml/g_{oc}). The other major degradate formed in smaller amounts (prothioconazole-S-methyl) is slightly mobile (K_{oc} = 1973 – 2993 ml/g_{oc}). Because these two major degradates are considered to be of similar toxicity to the parent, they are included in the aquatic exposure estimates. Also, ineffective extraction methods in soil and aquatic metabolism studies resulted in large amounts of unextracted material, leading to uncertainties in the composition and bioavailability of such and precluding accurate determinations of the biotic degradation rate for parent prothioconazole. Therefore, a total toxic residues method, including unextracted material, was utilized for environmental exposure modeling. This adds considerable uncertainty to the assessment regarding the bioavailability and the biotic degradation rates for prothioconazole residues. If additional data regarding the persistence of the degradates and the nature of the unextracted residues become available, the exposure estimates may be refined. Additional details regarding the environmental fate and transport of prothioconazole and its degradates can be found in the June 1, 2006 Ecological Risk Assessment (U.S. EPA, 2006; DP 324660). **Table 3.1** provides a detailed summary table of physical/chemical and environmental fate/transport properties of prothioconazole combined residues of concern. **Tables 3.2** summarizes the major degradation products formed by each degradation process in the studies reviewed.

Table 3.1. Summary of Physical/Chemical and Environmental Fate and Transport Properties of Prothioconazole Combined Residues of Concern

PARAMETER	VALUE(S) (units)	SOURCE MRID	COMMENT
Chemical Name	Prothioconazole: 2-[2-(1-Chlorocyclopropyl)-3-(2-chlorophenyl)-2-hydroxypropyl]-1,2-dihydro-3H-1,2,4-triazole-3-thione;	46246003 46477401	Prothioconazole-desthio: 2-[2-(1-Chlorocyclopropyl)-3-(2-chlorophenyl)-2-hydroxy-propyl]-1,2-dihydro-3H-1,2,4-triazole Prothioconazole-S-methyl: alpha-1(1-chlorocyclopropyl)-alpha-[(2-chlorophenyl)methyl]-3-(methylthio)-1H-1,2,4-triazole-1-ethanol

Table 3.1. Summary of Physical/Chemical and Environmental Fate and Transport Properties of Prothioconazole Combined Residues of Concern

PARAMETER	VALUE(S) (units)	SOURCE MRID	COMMENT
Molecular Weight	Prothioconazole: 344.264	46246003 46477401	Prothioconazole-desthio: 312.2 Prothioconazole-S-methyl: 358.3
Solubility (pH 4 (20 °C)) (pH 8 (20 °C)) (pH 9 (20 °C))	Prothioconazole: 5 mg/L or ppm 300 mg/L or ppm 2000 mg/L or ppm	46246003	
Vapor Pressure (20 °C and 25 °C)	Prothioconazole: $<<4 \times 10^{-7}$ Pa	46246003	Relatively non-volatile under field conditions.
Henry's Law constant (20 °C)	Prothioconazole: $<2.96 \times 10^{-10}$ atm-m^3/mol	46246003	Estimated from vapor pressure and water solubility.
pKa (20 °C)	Prothioconazole: 6.9	46246003	Weak acid, anion at neutral and alkaline pHs.
Octanol-Water Partition Coefficient (log K_{OW}, at 20 °C) Unbuffered pH 4 pH7 pH9	Prothioconazole: 4.05 4.16 3.82 2.00	46246003	Potential for bioaccumulation at neutral and acidic pH.
Hydrolysis Half-life (pH 4, 7, 9; (25 °C))	Prothioconazole and Prothiconazole-desthio: stable (Prothioconazole-S-methyl is not formed from prothioconaozle hydrolysis.)	46246505 46246506	
Aqueous Photolysis Half-life (pH 7, at 25 °C)	Prothioconazole: $t_{1/2}$ = 9.7 days Prothioconazole-desthio: Increasing at study termination Prothioconazole and Prothiconazole-desthio: $t_{1/2}$ = 101.9 days (Prothioconazole-S-methyl is not formed from prothioconaozle aqueous photolysis.)	46246507	Value corrected to represent natural sunlight at 40°N latitude;
Soil Photolysis Half-life	Prothioconazole and Prothiconazole-desthio: stable (Prothioconazole-S-methyl is not formed from prothioconaozle soil photolysis.)	46246510	Half-life could not be calculated as parent degraded faster in dark samples than in irradiated samples.
Aerobic Soil Metabolism Half-life	Prothioconazole combined residues of concern: $t_{1/2}$ = 533.2 days (silt; phenyl), 866.4 days (silt; triazole). 990.2 days (loamy sand; phenyl), 1386.3 days (loamy sand; triazole), 866.4 days (sandy loam; phenyl) , 462.1 days (silty clay loam; phenyl).	46246511 46246512	Half-lives are calculated combining amounts of prothioconazole, prothioconazole-desthio, and prothioconazole-S-methyl per sampling interval. Non-extractable residues included.

Table 3.1. Summary of Physical/Chemical and Environmental Fate and Transport Properties of Prothioconazole Combined Residues of Concern

PARAMETER	VALUE(S) (units)					SOURCE MRID	COMMENT
Anaerobic Aquatic Metabolism Half-life	Prothioconazole combined residues of concern: $t_{1/2}$ = stable (total system); 56.8 days (water layer).					46246516	Half-lives are combining amounts of prothioconazole, prothioconazole-desthio, and prothioconazole-S-methyl per sampling interval. Non-extractable residues included.
Aerobic Aquatic Metabolism Half-life	Prothioconazole combined residues of concern: $t_{1/2}$ = 433.2 days (H, total system, p), 346.6 days (H, total system, t), 106.6 days (A, total system, p), 67.3 days (A, total system, t).					46246515	Two systems tested: (H) Honniger Weiher pond (loam/water) and (A) Anglerweiher lake (loamy sand/water). Both phenyl (p) and triazole (t) labels in each system. Half-lives are calculated combining amounts of prothioconazole, prothioconazole-desthio, and prothioconazole-S-methyl per sampling interval. Non-extractable residues included.
Organic Carbon Partition Coefficient (K_{OC})	(mL/g_{OC})	LS	SCL	SL	S		
	Prothioconzole	--	--	--	--	46246539 46246504	Parent mobility cannot be determined due to instability
	Prothioconzole -desthio	523	536	617	625	46246450	Conducted on prothioconazole-desthio Used four soils: loamy sand (LS) at 0.79%OC, silty clay loam (SCL) at 1.66%OC, sandy loam (SL) at 2.02%OC, silt (S) at 2.14%OC.
	Prothioconzole -S-methyl	1973	2484	2772	2995	46246501	Conducted on prothioconazole-S-methyl Used same soils as MRID: 46246450.
Soil Partition Coefficient (K_d)	(mL/g)	LS	SCL	SL	S		
	Prothioconzole	--	--	--	--	46246539 46246504	Same as for K_{OC}.
	Prothioconzole -desthio	4.13	8.90	12.46	13.38	46246450	Same as for K_{OC}.
	Prothioconzole -S-methyl	15.6	41.2	56.0	64.1	46246501	Same as for K_{OC}.

Table 3.1. Summary of Physical/Chemical and Environmental Fate and Transport Properties of Prothioconazole Combined Residues of Concern

PARAMETER	VALUE(S) (units)	SOURCE MRID	COMMENT
Terrestrial Field Dissipation Half-life[1]	**California (sandy loam/loam):** Prothioconazole: $t_{1/2}$ (in surface soil)= 2.2 days; Not detected above LOD below a depth of 15 cm nor after 7DAT. Prothioconazole-desthio: $t_{1/2}$ (in surface soil)= 84.5 days; Detected above LOD to a depth of 45 cm and through 307DAT. **Georgia (sand/sandy loam):** Prothioconazole: $t_{1/2}$ (in surface soil)= 4.7 days; Not detected above LOD below a depth of 15 cm nor after 14DAT. Prothioconazole-desthio: $t_{1/2}$ (in surface soil)= 96.3 days; Detected above LOD to a depth of 30 cm through 7DAT. **New York (loamy sand):** Prothioconazole: $t_{1/2}$ (in surface soil)= 96.3 days; Not detected above LOD below a depth of 15 cm nor after 211DAT. Prothioconazole-desthio: $t_{1/2}$ (in surface soil)= 315.1 days; Not detected above LOD below a depth of 15 cm (except for one sampling interval (211DAT) where detected above LOD to 30 cm); detected above LOD through study completion (567DAT).	46246517 46246518 46246519	Studies conducted on prothioconazole as parent. For half-lives calculated for degradates from parent dissipation studies, day of max concentration of degradate is used as day zero in regression.
Aquatic Field Dissipation Half-life[1]	**California (clay):** Prothioconazole: $t_{1/2}$ (in sediment)= 203.9 days; $t_{1/2}$ (in paddy water)= 1.7 days. Prothioconazole-desthio: $t_{1/2}$ (in sediment)= 122 days. **Arkansas (loam):** Prothioconazole: $t_{1/2}$ (in sediment)= too few detections; $t_{1/2}$ (in paddy water)= 0.9 days. Prothioconazole-desthio: $t_{1/2}$ (in sediment)= 121.6 days. **Arkansas-cropped (loam):** Prothioconazole: $t_{1/2}$ (in sediment)= too few detections; $t_{1/2}$ (in paddy water)= 0.6 days. Prothioconazole-desthio: $t_{1/2}$ (in sediment)= 90.0 days.	46246522 46246523 46246524	Studies conducted on prothioconazole as parent. For half-lives calculated for degradates from parent dissipation studies, day of max concentration of degradate is used as day zero in regression.
Bioconcentration Factor (BCF)	Prothioconazole and prothioconazole-desthio do not appear to bioaccumulate.	46246034 46246035	BCF cannot be calculated due to lack of a clear accumulation plateau.

[1]DAT= days after treatment.

Table 3.2. Summary of Major Degradate Formation from Degradation of Prothioconazole

STUDY TYPE	MAJOR DEGRADATE and MAXIMUM CONCENTRATION				SOURCE
	Prothioconazole-desthio (SXX0665) (% applied)	**Prothioconazole-S-methyl (WAK7861) (% applied)**	**Prothioconazole-thiazocine (% applied)**	**1,2,4-triazole (% applied)**	
Hydrolysis	5.7% at 168 days	–	–	Not able to be detected.	MRID: 46246505.
Aqueous Photolysis	55.7% at 11 days (triazole label)	–	14.1% at 5 days (phenyl label)	11.9% at 18 days (triazole label)	MRID: 46246507.
Soil Photolysis	39.0 % at 15 days (29.4% max at 15 days in dark control)	–	–	Not able to be detected.	MRID: 46246510.
Aerobic Soil Metabolism	49.4% at 7 days (triazole label)	14.6% at 7 days (triazole label)	–	<2.0% at 120, 272, & 365 days (triazole label)	MRID: 46246511, 46246512.
Aerobic Aquatic Metabolism	26.9% at 14 days in sediment (both labels) 32.3% at 7 days in water (phenyl label) 54.6% at 7 days in total system (phenyl label)	9.6% at 7 days in sediment (triazole label) 3.1% at 7 days in water (triazole label) 12.7 % at 7 days in total system (triazole label)	–	6.1% at 121 days in sediment (triazole label) 37.2% at 121 days in water (triazole label) 41.8 % at 121 days in total system (triazole label)	MRID: 46246515.
Anaerobic Aquatic Metabolism	Not determined; -desthio formation determined to be artifact of storage and, therefore, added to parent (parent+desthio at 95.2% in total system at 0 days)	78.2% at 240 days in sediment 9.9% at 30 days in water 78.2% at 240 days in total system	–	Not able to be detected.	MRID: 46246516.
Terrestrial Field Dissipation	223.9 ug/kg soil at 3 days, 0-15 cm soil depth (CA) 84.9 ug/kg soil at 3 days, 0-15 cm soil depth (GA) 273.0 ug/kg soil at 28 days, 0-15 cm soil depth (NY)	15.9 ug/kg soil at 3 days, 0-15cm soil depth (CA) 12.3 ug/kg soil at 7 days, 0-15 cm soil depth (GA) 58.9 ug/kg soil at 28 days, 0-15 cm soil depth (NY)	–	7.3 ug/kg soil at 29 days, 0-15cm soil depth (CA) 5.3 ug/kg soil at 120 days, 0-15cm soil depth (GA) 3.5 ug/kg soil at 422 days, 0-15 cm soil depth (NY)	MRID: 46246517, 46246518, 46246519.
Aquatic Field Dissipation	32.7 ug/kg sediment at 14 days, 0-3 in.; 50.3 ug/L paddy water at 3 days (CA)	10.2 ug/kg sediment at 122 days, 0-3 in.; 1.04 ug/L paddy water at 3 days (CA)	–	3.3 ug/kg sediment at 364 days, 0-3 in.; 0.13 ug/L paddy water at 7 days (CA)	MRID: 46246522, 46246523, 46246524.

Data are reported in single replicates.

Studies conducted with both phenyl and triazole radiolabels include: aerobic soil metabolism (MRID: 46246511 only), aerobic aquatic metabolism, and aqueous photolysis. All other studies are conducted with phenyl radiolabel only (ie., hydrolysis, soil photolysis, other aerobic soil metabolism (MRID: 46246512 only), anaerobic aquatic metabolism). The 1,2,4-triazole degradate is not able to be detected in studies using the phenyl radiolabel. (The 1,2,4-triazole degradate column for studies which did not use the triazole label are designated "Not able to be detected.")

Field studies not radiolabelled. The only degradates tracked in field studies are: prothioconazole-desthio, prothioconazole-S-methyl, prothioconazole-thiazocine, and 1,2,4-triazole. Maximum concentrations in the field studies are determined after the 6th (CA, NY) or 2nd (GA) application. (DAT= days after 6th or 2nd treatment); 800 ug/kg, 400 ug/kg, and 1000 ug/kg total prothioconazole applied in CA, GA, and NY, respectively. Blank boxes represent degradates which are not detected above MDL.

3.1.2. Measures of Aquatic Exposure

Tier II modeling for scenarios representing all proposed uses was used to generate EECs. For Tier II, two models are used in tandem: the Pesticide Root Zone Model, (PRZM, Carsel *et al.*, 2005) and the Exposure Analysis Modeling System (EXAMS, Burns, 2004). PRZM (version 3.12.2 dated May 12, 2005) simulates fate and transport on the agricultural field, and EXAMS (version 2.98.04.06 dated April 25, 2005) simulates the fate and resulting daily concentrations in a standard model water body. Simulations are carried out with the linkage program shell, PE 5.0 (November 15, 2006), which incorporates the standard crop and orchard scenarios developed by EFED. Simulations are run for multiple (usually 30) years, and the EECs represent peak values that are expected once every ten years, based on the thirty years of daily values generated during the simulation. Additional information on these models can be found at: http://www.epa.gov/oppefed1/models/water/index.htm.

For aquatic endpoints, the exposure is estimated for the maximum application pattern to a 10-ha field bordering a 1-ha pond, 2-m deep (20,000 m^3) with no outlet. Exposure estimates generated using this standard pond are intended to represent a wide variety of vulnerable water bodies that occur at the top of watersheds including prairie pot holes, playa lakes, wetlands, vernal pools, man-made and natural ponds, and intermittent and first-order streams. As a group, there are factors that make these water bodies more or less vulnerable than the standard surrogate pond. Static water bodies that have larger ratios of pesticide-treated drainage area to water body volume would be expected to have higher peak EECs than the standard pond. These water bodies will be either smaller in size or have large drainage areas. Smaller water bodies have limited storage capacity and thus may overflow and carry pesticide in the discharge, whereas the standard pond has no discharge. As watershed size increases beyond 10-ha, it becomes increasingly unlikely that the entire watershed is planted with a non-major single crop that is all treated simultaneously with the pesticide. Headwater streams can also have peak concentrations higher than the standard pond, but they likely persist for only short periods of time and are then carried and dissipated downstream.

Input Parameters

Input parameters for the PRZM/EXAMS models are listed in **Table 3.3**. Explanations of various model input parameters are discussed below.

Table 3.3. Input Values Used for Prothioconazole Tier II Surface Water Modeling with PRZM/EXAMS

Parameter (units)	Value (s)	Source	Comments
PRZM Scenario	MN Sugar beets MS soybeans	--	Standard PRZM crop scenarios
Application Rate (kg a.i./ha)	Sugar beets: 0.2 Soybeans: 0.105	Proposed label.	Represents the maximum single application rate per crop season (year).

Table 3.3. Input Values Used for Prothioconazole Tier II Surface Water Modeling with PRZM/EXAMS			
Parameter (units)	**Value (s)**	**Source**	**Comments**
Number of Applications	Sugar beets: 3 Soybeans: 3	Proposed label.	Represents the maximum applications per crop season (year).
Interval between Applications (days)	Sugar beets: 14 Soybeans: 10	Proposed label.	Represents the minimum interval between applications per crop season (year).
Molecular weight (g/mol)	344.3	MRID: 46246003, 46477401.	For parent prothioconazole only.
Henry's Law Constant (atm-m^3/mol)	2.96×10^{-10}	MRID: 46246003.	For parent prothioconazole only.
Vapor Pressure (Torr)	3×10^{-9}	MRID: 46246003.	For parent prothioconazole only.
Solubility in Water @ 20 ^{o}C, pH 8 (mg/L or ppm)	300	MRID: 46246003.	–
Soil Partition Coefficient (K_{OC} (mL/g_{OC}))	523.0	MRID: 46246450.	Represents the lowest non-sand K_{OC} value among four values ranging from 523.0 to 625.3 mL/ g_{OC} for prothioconazole-desthio.
CAM (Chemical Application Method)	2	Proposed label.	Linear foliar based on crop canopy: proposed label allows aerial spray and ground spray.
Depth of Incorporation (inches)	0	Proposed label.	–
Application efficiency (decimal)	Aerial spray: 0.95 Ground spray: 0.99	Input Guidance.	–
Spray drift fraction (decimal)	Aerial spray: 0.05 Ground spray: 0.01	Input Guidance.	–
Application date (day/month)	Sugar beets: 24/August Soybeans: 15/May	Proposed label and PRZM scenarios.	–
Hydrolysis Half-life @ pH 4, 7, 9 (days)	0	MRIDs: 46246505, 46246506.	Two studies show that both prothioconazole and prothioconazole-desthio are stable to hydrolysis.

Table 3.3. Input Values Used for Prothioconazole Tier II Surface Water Modeling with PRZM/EXAMS			
Parameter (units)	**Value (s)**	**Source**	**Comments**
Aqueous Photolysis Half-life @ pH 7 (days)	101.9	MRID: 46246507.	Maximum, dark-controlled, value for prothioconazole total toxic residues, corrected to represent natural sunlight at 40°N latitude.
Aerobic Aquatic Metabolism Half-life (days)	385.2	MRID: 46246515.	Represents the 90th percentile confidence bound on the mean of four total system half-life values (238.4; range: 67.3-346.6) calculated using prothioconazole total toxic residues.
Anaerobic Aquatic Metabolism Half-life (days)	0	MRID: 46246516.	Represents one total system half-life value (stable) or three times one total system half-life value (1386.3) calculated using prothioconazole total toxic residues.
Aerobic Soil Metabolism Half-life (days)	1052.2	MRIDs: 46246511, 46246512.	Represents the 90th percentile confidence bound on the mean of six values for the aerobic soil metabolism of prothioconazole total toxic residues.

Currently approved standard PRZM crop scenarios were used in modeling. The MN sugar beets and MS soybean scenarios were used to simulate applications to sugar beets and soybeans. In cases when multiple scenarios from various geographic areas were available, east coast scenarios were chosen, if available, because they generally have greater rainfall which drives off-site transport.

Application methods and rates were obtained from the proposed supplemental labels. Application timing of prothioconazole is related to various fungal pressures. For the purposes of this assessment, it was assumed that applications are made two weeks after crop emergence (as specified in the standard scenarios). Applications were modeled with aerial and ground application input values as specified on the label.

Chemical property input values were chosen in accordance with current input parameter guidance (USEPA, 2002b). The upper 90% confidence bound on the mean of the total residues of concern was selected for the aerobic soil metabolism half-life (1052 d) and aerobic aquatic metabolism half-life (385 d), as per current input parameter guidance. The hydrolysis and anaerobic aquatic metabolism were modeled as stable, and photolysis was modeled at 102 d (total residues of concern). The lowest non-sand K_{oc} (523mL/g_{OC}) for prothioconazole-desthio was used for PRZM/EXAMS.

Modeling Results

Proposed use patterns were modeled for surface water exposure estimates, as described above. The maximum use patterns for sugar beets yielded the maximum surface water EECs listed below in **Table 3.4**. Model input/output data for these estimates are attached in **Appendix A**.

Table 3.4. PRZM/EXAMS-Predicted Aquatic 1-in-10 Year Estimated Environmental Concentrations (EECs) for the Total Residues of Concern Resulting from Application of Prothioconazole					
Uses (modeled rate)	**PRZM Scenario**	**Application**	**Peak (ppb)**	**21-d (ppb)**	**60-d (ppb)**
Sugar beets (0.53 lb/A/yr)	MN sugar beets	Aerial	25.0	24.8	24.4
		Ground	21.5	21.2	20.7
Soybeans (0.28 lb/A/yr)	MS soybeans	Aerial	11.4	11.1	10.6
		Ground	10.3	9.89	9.42

3.1.3. Measures of Terrestrial Exposure

3.1.3.1. Terrestrial Animals

T-REX (version 1.2.3) is used to calculate dietary and dose-based EECs of prothioconazole for mammals and birds. Input values for T-REX are located in **Table 3.5**. Upper-bound Kenaga nomogram values are used to derive EECs for prothioconazole exposures to terrestrial mammals and birds (**Table 3.6**). An example output from the T-REX model is provided in **Appendix B**. As discussed in the June 2006 ecological risk assessment (U.S. EPA, 2006), a 90th percentile foliar dissipation half-life of 6.44 days from the combined parent and prothioconazole-desthio was used in order to be consistent with the approach used for fate input data. Label-specified minimum application intervals of 10 and 14 days were modeled for soybeans and sugar beets, respectively. A 1-year time period is simulated. Consideration is given to different types of feeding strategies for mammals and birds, including herbivores, insectivores and granivores. For dose-based exposures, three weight classes of mammals (15, 35 and 1000 g) and birds (20, 100, and 1000 g) are considered.

Table 3.5. Input Parameters for Deriving Terrestrial EECs for Prothioconazole Use on Soybeans and Sugar Beets Using T-REX		
Parameter Description	**Values**	
	Soybeans	**Sugar Beets**
Prothioconazole Application Rate (lbs a.i./A)	0.09375	0.1781
Foliar Dissipation Half-life (days)	6.44	6.44
Minimum Application Interval (days)	10	14
Number of Applications	3	3

Table 3.6. T-REX Calculated EECs of Prothioconazole on Food Residues		
Food Type	**Maximum EEC (mg/kg)**	
	Soybeans	**Sugar Beets**
Short Grass	32.75	54.32
Tall Grass	15.03	24.89
Broadleaf plants/sm insects	18.44	30.55
Fruits/pods/lg insects	2.05	3.39

3.1.3.2. Terrestrial Plants

Prothioconazole exposure to terrestrial and semi-aquatic plants is estimated using the TerrPlant (version 1.2.2) model. The model generates EECs for plants residing near a use area that may be exposed via runoff and/or spray drift. The EECs are generated from one application at the maximum rate for a particular use and compound-specific solubility information. Only a single application is considered because it is assumed that for plants, toxic effects are likely to manifest shortly after the initial exposure and that subsequent exposures do not contribute to the response. Hence, the model estimates EECs based on application rate, the solubility factor, and default assumptions of drift. The EECs for terrestrial and semi-aquatic plants for a single application of prothioconazole at the maximum label rate for the proposed uses on soybeans and sugar beets are presented in **Table 3.7**. An example output from the TerrPlant model is provided in **Appendix C**.

Table 3.7. EECs for Terrestrial and Semi-Aquatic Plants Near New Prothioconazole Use Areas							
Crop	**Single Max. Application Rate (lbs a.i./A)**	**EECs (lbs a.i./A) (Ground Spray, Aerial Spray)**					
		Total Loading to Adjacent Areas (sheet runoff + drift)		**Total Loading to Semi-Aquatic Areas (channelized runoff + drift)**		**Drift EEC**	
		Ground spray	**Aerial spray**	**Ground spray**	**Aerial spray**	**Ground spray**	**Aerial spray**
Soybeans	0.09375	0.0056	0.0094	0.0478	0.0516	0.0009	0.0516
Sugar Beets	0.1781	0.0107	0.0178	0.0908	0.0979	0.0018	0.0089

3.2. Ecological Effects Characterization

The ecological effects characterization for prothioconazole is based on registrant-submitted toxicity data on the parent, prothioconazole, and its major degradates (-desthio and –S-methyl). In addition to the registrant-submitted data, the ECOTOX database (http:/www/epa.gov/ecotox) was used to identify additional toxicity data from the open literature. Given the complexities associated with the fate, transport, and toxicity of prothioconazole in the environment, a total toxics residue approach is used to evaluate the potential risks of both parent and metabolites. Therefore, the lowest available toxicity

value for a taxon and duration (e.g., acute freshwater fish) is used to calculate RQs. Generally, prothioconazole-desthio was the most toxic chemical tested, and toxicity resulting from exposure to this degradate was predominantly used for RQ calculations. Results from submitted toxicity studies are not likely to capture the toxicity of prothioconazole and metabolites to all species of birds, mammals, plants, or aquatic organisms. Only a few surrogate species are used to represent all fish, birds, mammals, invertebrates, and plants. Furthermore, there are no currently required toxicity tests for amphibians or reptiles; therefore, birds are used as surrogates for reptiles and terrestrial-phase amphibians, and freshwater fish are used as surrogates for aquatic-phase amphibians. In general, the representation of numerous species by a few commonly used laboratory species, which are often chosen for amenability to laboratory study, is a source of uncertainty.

A brief description of available aquatic and terrestrial toxicity data used to calculate RQs is provided below in Sections 3.2.1 and 3.2.2. All toxicity data used to derive RQs is based on registrant-submitted studies. Futher details on all of the available toxicity studies for prothioconazole and its degradates, including registrant-submitted studies and open literature data from ECOTOX, are provided in the June 2006 ecological risk assessment (U.S., EPA, 2006).

3.2.1. Aquatic Effects Characterization

Aquatic toxicity data for animals and plants are summarized in **Tables 3.8** and **3.9**, respectively.

For aquatic freshwater animals, prothioconazole and its degradates are moderately toxic. For estuarine/marine fish and invertebrates, the toxicity ranges from slightly to very highly toxic under acute exposure conditions. However, there is uncertainty associated with the very highly toxic designation for estuarine/marine invertebrates because the chronic NOAEC for mysid shrimp is actually higher than the concentration that killed 50% of mysid shrimp following a 96-hr acute exposure, suggesting that the lethal (LC_{50}) and sub-lethal (NOAEC) effects occur at similar concentrations for the same chemical. The available acute toxicity data suggest that there is considerable variation in the response of mysids to prothioconazole-desthio, and it is possible that the life cycle test may not have adequately captured the potential sensitivity of mysids. To address this uncertainty, an acute-to-chronic ratio was used to estimate the chronic toxicity endpoint from the lowest available msyid LC_{50}. The acute-to-chronic ratio from freshwater daphnids is 11.7 (EC_{50}/ NOAEC: 1200 ppb/103 ppb). Using this factor and adjusting the mysid LC_{50} of 60 ppb yields an estimated NOAEC of 5.2 ppb.

On a chronic basis, prothioconazole-desio results in reduced larval/juvenile survival, spawning frequency, and growth of fathead minnow (*Pimephales promelas*) and reduced offspring production in water fleas (*Daphnia magna*) at LOAEC concentrations ranging from 206 to 297 ppb; the corresponding NOAEC values for freshwater fish and invertebrates are 148 ppb and 103 ppb, respectively.

Aquatic plants appear particularly sensitive to both the parent, and especially prothioconazole-desthio. With respect to freshwater aquatic plants, duckweed (*Lemna gibba*) and green algae (*Scenedesmus subspicatus*) are most sensitive to prothioconazole-desthio with respective EC_{50} values of 35 ppb and 74 ppb. Non-vascular estuarine/marine diatoms (Skeletonema costatum) are most sensitive to prothioconazole with a 96-h EC_{50} of 21 ppb.

Table 3.8. Summary of Acute and Chronic Toxicity Data for Aquatic Animals Exposed to Prothioconazole and Prothioconazole-Metabolites

Species/ Chemical	Acute Toxicity			Chronic Toxicity	
	96-hr LC_{50}/EC_{50} (µg a.i./L)	48-hr EC_{50} (µg a.i./L)	Toxicity Classification (MRID)	NOAEC/ LOAEC (µg a.i./L)	Endpoints (MRID)
Rainbow trout *Oncorhynchus mykiss* Prothioconazole	1690	--	Moderately Toxic (462460-19)	--	--
Fathead Minnow *Pimephales promelas* prothioconazole-desthio	--	--	--	148 / 296	Survival, spawn freq., growth (462460-33)
Waterflea *Daphnia magna* Prothioconazole (parent)	--	1200	Moderately Toxic (462460-09)	--	--
Water flea *Daphnia magna* Prothioconazole-desthio	--	--	--	103 / 206	Reproductive output (462460-29)
Sheepshead minnow *Cyprinidon variegates* Prothioconazole (parent)	>10300	--	Slightly Toxic (462460-27)	--	--
Eastern Oyster *Crassostrea virginica* Prothioconazole (parent)	3000	--	Moderately Toxic (462460-14)		--
Mysid shrimp *Americamysis bahia* Prothioconazole-desthio	60	--	Very Highly Toxic (462460-17)	--	--
Mysid shrimp *Americamysis bahia* Prothioconazole-desthio	--	--	--	64	Reproductive output (462460-30)
Mysid shrimp *Americamysis bahia*	--	--	--	5.2	Derived using acute-to-chronic ratio

Table 3.9. Summary of Aquatic Plant Toxicity Data for Prothioconazole and Prothioconazole Metabolites

Species/ Chemical	Acute Toxicity			
	96-hr LC_{50} (µg a.i./L)	7-day EC_{50} (µg a.i./L)	NOAEC/ EC_{05} (µg a.i./L)	Endpoints (MRID)
Duckweed *Lemna gibba* Prothioconazole-desthio	--	35	5.8/3.9	Frond Number (462461-04)
Green algae *Scenedesmus subspicatus* Prothioconazole-desthio	74	--	<10/11	Cell Density (462461-08)

Diatom *Skeletonema costatum* Prothioconazole	21	--	7.3/7.7	Biomass (462461-10)

3.2.2. Terrestrial Effects Characterization

Toxicity values for terrestrial animals and plants are summarized in **Tables 3.10** and **3.11**, respectively.

Prothioconazole and its degradates (-desthio, and -S-methyl) are, for the most part, practically non-toxic to mammals, birds, and honeybees under acute exposure conditions. However, it should be noted that 70% mortality was observed in bobwhite quail in the acute dietary study involving exposure to prothioconazole-desthio at the highest exposure level of 5,215 mg/kg-diet; the LC_{50} is 4,252 mg/kg-diet, and the compound is classified as slightly toxic. Sub-lethal effects including decreased food consumption and/or body weight were observed in both the acute avian oral and dietary studies. In chronic avian studies, no significant effects of the parent or degradates were reported at concentrations up to 449 mg/kg. In chronic mammalian tests on prothioconazole-desthio, reproductive effects including decreased pup viability and decreased pup weight were observed at a LOAEL of 640 mg/kg-diet with a corresponding NOAEL of 160 mg/kg-diet. The NOAEL is equivalent to a dose of 9.5 mg/kg bw/day in female rats.

Tier I plant studies were conducted with 10 species of plants exposed to 0.272 lbs a.i./A, which is greater than the highest proposed single application rate of 0.178 lbs a.i./A. With the exception of cucumbers, effects did not exceed a 25% inhibition for any other species. For cucumber plants, there was a greater than 25% effect on shoot length and dry weight in the seedling emergence study. Although effects in cucumbers did not exceed 25% in the vegetative vigor study, the percent inhibition for this species was generally among the highest. Based on the results of the Tier I study, a Tier II study for cucumber was required.

In the Tier II study, no effects exceeded a 25% inhibition compared to control for cucumbers for the highest test concentration of 0.272 lbs ai/A. However, there were significant effects on both shoot height and dry weight with the lowest NOAEC associated with shoot height. The NOAEC and EC_{05} for shoot height are equivalent to application rates of 0.03 and 0.08 lbs ai/A, respectively; the NOAEC is used to calculate RQs.

Table 3.10. Summary of Acute and Chronic Toxicity Data for Terrestrial Animals Exposed to Prothioconazole and Prothioconazole-Metabolites

Species/ Chemical	Acute Toxicity				Chronic Toxicity	
	48-hr LD_{50} µg/bee	14-day LD_{50} (mg/kg bw)	8-day LC_{50} (mg/kg feed (ppm))	Toxicity Classification (MRID)	NOAEC/LOAEC (mg/kg feed (ppm))	Endpoints (MRID)
Bobwhite quail *Colinus virginianus* Prothioconazole	--	> 2000	--	Practically Non-toxic (462460-19)	--	--
Bobwhite quail *Colinus virginianus*	--	--	4252	Slightly Toxic (462460-39)	--	--

Prothioconazole-desthio						
Mallard Duck *Anas platyrhynchos* Prothioconazole-desthio	--	--	--	--	449/ >449	No Effects (462460-45)
Laboratory Rat *Rattus norvegicus* (Sprague-Dawley) Prothioconazole-desthio	--	2506	--	Practically Non-toxic (462462-31)	--	--
Laboratory Rat *Rattus norvegicus* (Sprague-Dawley) Prothioconazole-desthio	--	--	--	--	160/640 (9.5 mg/kg bw/d)	Offspring (462463-33)
Honeybee *Apis mellifera* Prothioconazole	>71	--	--	Practically Non-toxic (462460-48)	--	--

Table 3.11. Summary of the Effects of Prothioconazole and Metabolites on Terrestrial Plants

Plant Type	Study Species	% Reduction Compared to Controls				
		Seedling Emergence			Vegetative Vigor	
		Seedling Emergence	Shoot Length	Dry Weight	Shoot Length	Dry Weight
Tier I Results (0.272 lbs a.i./A)						
Monocots	Buckwheat	--	5.2	20.9	--	--
	Corn	5.0	1.1	4.7	0.2	6.3
	Onion	2.1	--	--	--	--
	Ryegrass	8.0	4.5	--	--	--
	Wheat	2.0	5.1	--	1.9	7.1
Dicots	Cucumber	--	**25.6**	**31.1**	22.0	10.3
	Soybean	--	9.2	11.1	1.2	6.6
	Sunflower	7.0	1.8	8.1	--	5.3
	Tomato	--	12.7	16.1	--	11.2
	Turnip	--	8.1	7.1	8.1	4.8

Tier II Results					
Plant Type	Study Species	Shoot Length NOAEC / EC_{05} (lbs a.i./A)		Dry Weight NOAEC / EC_{05} (lbs ai/A)	
Dicot	Cucumber	0.03	0.08	0.272	0.03

4. Risk Characterization

4.1. Risk Estimation

4.1.1. Aquatic Organisms

The peak EECs in surface water generated from the PRZM/EXAMS model represents acute exposure to fish, aquatic invertebrates, and aquatic plants, and the highest 21-day and 60-day average EECs represents chronic exposure to aquatic invertebrates and fish, respectively. Scenarios are evaluated for prothioconazole to sugar beets and soybeans via aerial applications, and also for ground applications when RQs derived using aerial EECs

exceed LOCs. Acute and chronic RQs for freshwater and estuarine/marine organisms are summarized in **Tables 4.1** and **4.2**, respectively. RQs for fresh- and saltwater aquatic plants are presented in **Table 4.3**.

4.1.1.1. Freshwater Fish and Invertebrates

As shown in **Table 4.1**, acute and chronic RQs are well below LOCs (**Table 2.3**) for freshwater fish and invertebrates; therefore, risks associated with exposure to the proposed prothioconazole uses on sugar beets and soybeans are not expected to occur for freshwater fish and invertebrates.

Table 4.1. Acute and Chronic RQs for Freshwater Fish and Invertebrates Exposed to Prothioconazole

Use (App. Method)	Application Rate lbs a.i./A (#app/interval)	EECs (ppb)			Fish and Amphibian RQs LC_{50} = 1690 ppb NOAEC = 148 ppb		Invertebrate RQs LC_{50} = 1200 ppb NOAEC = 103 ppb	
		Peak	21-day	60-day	Acute	Chronic	Acute	Chronic
Sugar beets (aerial)	0.1781 (3/14)	25.0	24.8	24.4	0.01	0.16	0.02	0.24
Soybeans (aerial)	0.09375 (3/10)	11.4	11.1	10.6	<0.01	0.07	0.01	0.11

4.1.1.2. Estuarine/Marine Fish and Invertebrates

As shown in **Table 4.2**, acute RQs for estuarine/marine fish and mollusks are well below the listed species LOC of 0.05. Chronic toxicity data were not available for estuarine/marine fish; therefore, chronic RQs could not be calculated. Based on the mysid shrimp toxicity data, the listed species LOC (RQ $\geq$ 0.05) is exceeded for ground and aerial applications of prothioconazole on sugar beets and soybeans; the non-listed species acute restricted use LOC (RQ $\geq$ 0.2) is also exceeded for ground and aerial applications on sugar beets. In addition, the chronic LOC (RQ $\geq$ 1) is exceeded for non-molluskan estuarine/marine invertebrates, with RQ values ranging from 1.90 to 4.76.

Table 4.2. Acute and Chronic RQs for Estuarine/Marine Fish and Invertebrates Exposed to Prothioconazole

Use	Application Rate lbs ai/A (#app/interval)	EECs (ppb)		Fish RQs LC_{50} = >10300 ppb NOAEC = N/A	Invertebrate RQs LC_{50} = 60 ppb NOAEC = 5.2 ppb		Mollusk RQs EC_{50}= 3000 ppb
		Peak	21-day	Acute	Acute	Chronic	Acute
Sugar beets (aerial)	0.1781 (3/14)	25.0	24.8	<0.01	**0.41****	**4.76**	<0.01

Sugar beets (ground)		21.5	21.2	<0.01	**0.36****	**4.08**	<0.01
Soybeans (aerial)	0.09375 (3/10)	11.4	11.1	<0.01	**0.19***	**2.13**	<0.01
Soybeans (ground)		10.3	9.89	<0.01	**0.17***	**1.90**	<0.01

*Exceeds the acute listed species LOC (RQ≥0.05)
**Exceeds the acute listed species LOC (RQ≥0.05) and the non-listed species acute restricted use LOC (RQ≥0.2)
Bolded chronic RQs exceed the listed and non-listed species chronic risk LOC (RQ≥1.0)

4.1.1.3. Aquatic Plants

As shown in **Table 4.3**, RQs for all freshwater and saltwater plants exceed the acute listed species LOC for ground and aerial applications of prothioconazole to sugar beets and soybeans, with the exception of ground application to soybeans. In addition, non-listed species LOCs are also exceeded for saltwater non-vascular plants for prothioconazole use on sugar beets.

Table 4.3. Acute RQs for Freshwater and Estuarine/Marine Aquatic Plants Exposed to Prothioconazole

Use	Application Rate lbs (ai/A (#app/interval)	Peak EECs (ppb)	Freshwater Vascular Plant RQs EC_{50} = 35 ppb NOAEC = 5.8		Freshwater Non-vascular Plant RQs EC_{50} = 74 ppb EC_{05} = 11 ppb		Saltwater Non-vascular Plant RQs EC_{50} = 21 ppb NOAEC = 7.3 ppb	
			Acute Non-listed Species	Acute Listed Species	Acute Non-listed Species	Acute Listed Species	Acute Non-listed Species	Acute Listed Species
Sugar beets (aerial)	0.1781 (3/14)	25.0	0.71	**4.31***	0.34	**2.27***	**1.19***	**3.42***
Sugar beets (ground)		21.5	0.61	**3.71**	0.29	**1.95***	**1.02**	**2.95**
Soybeans (aerial)	0.09375 (3/10)	11.4	0.33	**1.97***	0.15	**1.04***	0.54	**1.56***
Soybeans (ground)		10.3	0.29	**1.78***	0.14	0.94	0.49	**1.41***

*Exceeds the acute listed species or non-listed species LOC (RQ≥ 1.0)

4.1.2. Terrestrial Organisms

4.1.2.1. Birds

Prothioconazole is classified as 'practically nontoxic' to birds on an acute oral basis, and 'slightly toxic' on a sub-acute dietary exposure basis. However, in the submitted avian acute and sub-acute toxicity studies, sublethal effects including decreased food consumption and reduction in body weight were observed. Acute dose- and dietary-based and chronic dietary-based RQs were calculated for priothioconazole use on sugar beets (0.1781 lb a.i.A; 3 applications; minimum application interval of 14 days), which

has the higher application rate and EECs (Table 3.6) of the two proposed uses evaluated as part of this assessment. As shown in **Table 4.4**, the acute and chronic RQs are well below LOCs for avian receptors; therefore, the proposed uses of prothioconazole are not expected to adversely affect birds. An example output of avian RQs from the T-REX model is provided in **Appendix B**.

Table 4.4. Avian Acute and Chronic RQ Values for Prothioconazole Use on Sugar Beets

Dietary Category	Acute RQs				Chronic Dietary-based RQs
	Dose-based RQs			Dietary-based RQs	
	20 g	100 g	1000 g		
Short Grass	0.04	0.02	0.01	0.01	0.12
Tall Grass	0.02	0.01	<0.01	0.01	0.06
Broadleaf plants/sm insects	0.02	0.01	<0.01	0.01	0.07
Fruits/pods/seeds/lg insects	<0.01	<0.01	<0.01	<0.01	0.01

The acute LOC for listed avian species is RQ $\geq$ 0.1.
The chronic LOC for non-listed and listed avian species is RQ$\geq$1.0

4.1.2.2. Mammals

Table 4.5 lists dose-based acute mammalian RQs for the proposed use of prothioconazole on sugarbeets because this use pattern results in the highest EECs on food residues (Table 3.6). No acute LOCs are exceeded with RQs ranging from <0.01 to 0.01.

Table 4.5. Mammalian Dose-Based Acute RQ Values for Uses of Prothioconazole on Sugar Beets

Use	Application Rate lbs ai/A #app/interval(d)	Body Weight (g)	Avian Acute RQs for Specified Food Items				
			Short Grass	Tall Grass	Broadleaf Plants/Small Insects	Fruits/Pods/ Lg Insects	Seeds
Sugar beets	0.1781 (3/14)	15	0.01	<0.01	0.01	<0.01	<0.01
		35	0.01	<0.01	<0.01	<0.01	<0.01
		1000	<0.01	<0.01	<0.01	<0.01	<0.01

The acute listed species LOC for mammalian species is RQ $\geq$ 0.1

Table 4.6 lists the dose-based chronic mammalian RQs for the proposed uses of prothioconazole. The chronic LOC (RQ $\geq$ 1.0) is exceeded for both proposed new uses of priothioconazole on sugar beets and soybeans. However, LOC exceedances are specific to food items including shortgrass (for both uses) and tall grass and broadleaf plants/small insects for the sugar beet use only. RQs are higher for smaller mammals due to an increased food ingestion rate associated with the higher metabolic rate of smaller mammals.

Table 4.6. Mammalian Dose-Based Chronic RQ Values for Uses of Prothioconazole							
Use	Application Rate lbs ai/A #app/interval(d)	Body Weight (g)	Dose-based Chronic Mammalian RQs for Specified Food Items				
			Short Grass	Tall Grass	Broadleaf Plants/Small Insects	Fruits/Pods/ Lg Insects	Seeds
Sugar beets	0.1781 (3/14)	15	**2.48**	**1.14**	**1.40**	0.16	0.03
		35	**2.12**	0.97	**1.19**	0.13	0.03
		1000	**1.14**	0.52	0.64	0.07	0.02
Soybeans	0.09375 (3/10)	15	**1.50**	0.69	0.84	0.09	0.02
		35	**1.28**	0.59	0.72	0.08	0.02
		1000	0.69	0.31	0.39	0.04	0.01

Bolded values exceed the chronic risk LOC (RQ ≥ 1.0) for non-listed and listed mammalian species

Table 4.7 summarizes chronic dietary-based mammalian RQs for proposed uses of prothioconazole. These RQs are based on effects associated with chemical concentrations in feed. The chronic dietary-based RQs do not exceed LOCs for any of the proposed new uses of prothioconazole.

Table 4.7. Chronic Dietary-Based RQ Values for Mammals Exposed to Prothioconazole				
Use	Application Rate lbs ai/A #app/interval(d)	Food Items	EEC (mg/kg)	Chronic Dietary RQ
Sugar beets	0.1781 (3/14)	Short Grass	54.32	0.34
		Tall Grass	24.89	0.16
		Broadleaf plants / small insects	30.55	0.19
		Fruits, pods, seeds, large insects	3.39	0.02
Soybeans	0.09375 (3/10)	Short Grass	32.78	0.20
		Tall Grass	15.03	0.09
		Broadleaf plants / small insects	18.44	0.12
		Fruits, pods, seeds, large insects	2.05	0.01

The chronic risk LOC for non-listed and listed mammalian species is RQ≥1.0

An example output of mammalian acute and chronic RQs derived from the T-REX model is provided in **Appendix B**.

4.1.2.3. Terrestrial Invertebrates

Prothioconazole is classified as 'practically nontoxic' to non-target terrestrial insects including honey bees on an acute exposure basis. Screening-level risk assessments do not typically evaluate risks to terrestrial invertebrates; however, toxicity information for beneficial insects is used to develop precautionary label language where necessary. Based on the available data, precautionary label language for bees does not appear necessary.

4.1.2.4. Plants

Table 4.8 summarizes the terrestrial and semi-aquatic plant RQs for the proposed new uses of prothioconazole. RQs exceed the listed species LOC (RQ ≥ 1.0) for semi-aquatic listed plants. RQs for non-listed terrestrial and semi-aquatic plant species are not calculated because an EC_{25} (> 0.272 lbs a.i./A; highest test concentration) could not be

estimated from the Tier II study. An example output terrestrial and semi-aquatic plant RQs derived from the TerrPlant model is provided in **Appendix C**.

Table 4.8 RQ Values for Listed Terrestrial and Semi-Aquatic Plants Exposed to Prothioconazole

Use(s)	Single Application Rate (lbs a.i./A)	RQs Based on Tier II Seedling Emergence Study on Cucumber (EC_{25}>0.272 lbs a.i./A; NOAEC = 0.03 lbs a.i./A)			
		Adjacent		Semi-Aquatic	
		Ground spray	Aerial spray	Ground spray	Aerial spray
Sugar beets	0.178	0.36	0.59	**3.03**	**3.26**
Soy beans	0.09375	0.19	0.31	**1.59**	**1.72**

Bolded values exceed listed plant acute risk LOC (RQ≥1.0)

4.2. Risk Description

The results of this screening-level risk assessment indicate that the proposed new use of prothioconazole on sugar beets and soybeans has the potential for direct adverse effects to listed and non-listed estuarine/marine non-molluskan invertebrates, listed freshwater vascular and non-vascular plants, listed and non-listed saltwater non-vascular plants, listed and non-listed mammals (chronic), and listed semi-aquatic dicot plants. Therefore, the risk hypothesis [*...the proposed prothioconazole uses on sugar beets and soybeans has the potential to reduce survival, reproduction, and/or growth in terrestrial and aquatic organisms*] is supported. These results are based on the maximum application rate for these proposed uses. Although direct adverse effects to freshwater and saltwater fish, freshwater invertebrates, mollusks, birds, and non-target insects from prothioconazole uses are not expected, indirect effects to all animals are possible, given the potential for effects on semi-aquatic and aquatic plant species.

4.2.1. *Risks to Aquatic Organisms*

Acute and chronic RQs for freshwater fish and invertebrates, and acute RQs for estuarine/marine fish and mollusks are well below the listed species LOC of 0.05; therefore, direct effects to these taxonomic groups from the proposed new uses of prothioconazole are not expected. Although no chronic estuarine/marine fish data are available for prothioconazole or its degradates, the likelihood of chronic effects in saltwater fish is expected to be low, given the low potential for acute adverse effects and low potential for chronic effects to freshwater species.

Based on this screening-level analysis, the estuarine/marine non-molluskan invertebrate acute and chronic RQ values exceed their respective LOCs, with acute RQs ranging from 0.17 to 0.41 and chronic RQs ranging from 1.9 to 4.76. Peak EECs would have to be reduced from estimated modeling concentrations of 25 ppb to < 3 ppb (8.3-fold) to result in an acute RQ that is less than the listed species acute LOC of 0.05. The chronic endpoint for mysids is based on an acute-to-chronic ratio, given uncertainties associated

with the acute LC_{50} and NOAEC data for the mysid (i.e., the acute LC_{50} for the mysid is lower than the chronic NOAEC). Although repeating the mysid life cycle may reduce uncertainty associated with the NOAEC, any new data would not negate the results of the original mysid acute test, which serves as the basis for risk conclusions regarding saltwater non-molluskan invertebrates. Therefore, the proposed new uses of prothioconazole may cause direct effects to estuarine/marine non-molluskan invertebrates in areas where sugar beets and soybeans are grown near estuarine/marine environments.

Based on predicted prothioconazole total toxic residue EECs for the modeled new uses and available toxicity data, acute listed species LOCs are exceeded for all freshwater vascular and saltwater non-vascular aquatic plants. In addition, acute listed species LOCs are exceeded for freshwater non-vascular plants for proposed prothioconazole uses on sugarbeets and aerial applications on soybeans. Acute non-listed species LOCs are also exceeded for saltwater non-vascular plants for proposed use on sugarbeets. Based on the available information, it appears that the toxicity of prothioconazole and its degradates to aquatic plants is similar for freshwater vascular and saltwater non-vascular plants, and roughly two times less sensitive than these aquatic taxa for freshwater non-vascular plants.

Modeled aquatic EECs included combined residues of prothioocaonzole, and two primary degradates, prothioconazole-desthio and prothioconazole-S-methyl. EECs were then compared to the lowest toxicity value for any given endpoint regardless of the exposure chemical (i.e., parent or degradate). This approach is particularly conservative in cases where one compound is appreciably more toxic than the others. Additionaly, because of the considerable uncertainty surrounding soil extraction procedures, the unextracted material in the aerobic soil, aerobic aquatic, and anaerobic aquatic metabolism studies was added to parent in calculation of half-lives used in environmental fate modeling and fate characterization. Therefore, the persistence and bioavailability of prothioconazole is likely overestimated in this assessment; resulting in conservative estimated aquatic exposure.

4.2.2. *Risks to Terrestrial Organisms*

No avian acute or chronic LOCs are exceeded for the proposed new uses of prothioconazole on sugar beets and soybeans; therefore, direct effects to birds are not expected.

Similarly, no acute LOCs are exceeded for mammals, indicating that acute direct effects of the proposed new uses on mammals are unlikely. However, chronic dose-based RQs exceed LOCs for both proposed new uses for a number of combinations of mammalian body size and food item type. Generally, RQs are higher for smaller mammals that consume short grass, followed by consumers of broadleaf plants/small insects, and tall grass. No chronic risk LOCs are exceeded for mammals (35g-1000g) that consume tall grass, fruits, pods, large insects, and/or seeds. In order to reduce dose-based chronic RQs below the LOC for chronic mammalian risk for all new uses of prothioconazole, the application rate would have to be reduced from 0.1781 lb a.i./A to below 0.07 lb a.i./A

(assuming 3 applications with an interval of 14 days) and below 0.09 lb a.i./A (assuming one application). Although the chronic dietary-based RQs did not excced chronic mammalian LOCs, the basis of the risk conclusion is the dose-based chronic RQs because these values address differential food consumption and are body-weight specific. Adverse chronic effects to mammals are based on reduced pup viability and body weight and increased developmental defects in offspring.

EFED does not currently estimate RQs for terrestrial non-target invertebrates. However, a label statement is required to protect foraging honeybees when the LD_{50} is < 11 µg/bee. Based on the acute oral toxicity study to honeybees, the LD_{50} for prothioconazole is >71 µg/bee. In addition, available open literature data on the effects of prothioconazole on terrestrial invertebrates were addressed in the June 2006 ecological risk assessment (U.S. EPA, 2006); the results of this analysis show that predicted concentrations of prothioconazole in the soil are approximately 100 times lower than any acute toxicity value. Therefore, direct adverse effects to terrestrial invertebrates are not expected.

Based on the results summarized for terrestrial plants in **Table 4.8**, risks are predicted only for listed semi-aquatic dicot plants. The results of the Tier I plant studies showed no effect greater than 25% in any monocot plant species. In addition, Tier II testing with the only dicot plant species that showed >25% effect (cucumber) in the Tier I study did not show effects >25% up to the highest concentration tested; therefore, an EC_{25} could not be calculated. Only RQs for listed species using the NOAEC were presented because there were no effects greater than 25% in the Tier II study on cucumber. Assuming an EC_{25} of 0.272 lb a.i./A (the highest test concentration from the Tier I study) for dicots would result in RQs ranging from <0.1 to 0.36, well below the LOC for non-listed species (RQ $\geq$ 1.0). Therefore, adverse effects associated with the new uses of prothioconazole are unlikely for non-listed terrestrial plants and listed monocot semi-aquatic plants. However, listed semi-aquatic dicot plants may be affected.

4.2.3. Review of Incident Data

No incidents involving prothioconazole or its degradates were identified in the EIIS (Environmental Incident Information System) database for ecological incidents, based on a search conducted on November 30, 2007.

4.2.4. Federally Threatened and Endangered (Listed) Species Concerns

The results of this screening-level risk assessment indicate that the proposed new uses of prothioconazole on sugar beets and soybeans have the potential for direct adverse effects on listed and non-listed estuarine/marine non-molluskan invertebrates, listed freshwater vascular and non-vascular plants, listed and non-listed saltwater non-vascular plants, listed and non-listed mammals (chronic), and listed semi-aquatic dicot plants.

Because of the potential risk from direct effects to the listed and non-listed taxa described above, listed species in all taxa may potentially be affected indirectly due to alteration of habitat (*e.g.*, food sources, shelter, and areas to reproduce) should exposure occur.

4.2.4.1. Co-occurrence Analysis

The goal of the analysis for co-location is to determine whether sites of pesticide use are geographically associated with known locations of listed species [following the convention of the Services, the word 'species' in this assessment may actually apply to a 'species', 'subspecies', or an Evolutionary Significant Unit (ESU)]. At the screening level, this analysis is accomplished using the LOCATES (version 2.10.3) database. The database uses location information for listed species at the county level and compares it to agricultural census data (from 2002) for crop production at the same county level of resolution. The product is a listing of federally-listed species that are located within counties known to produce the crops upon which the pesticide will be used, in this case sugar beets and soybeans. For direct effects, only listed terrestrial plants, aquatic vascular and non-vascular plants, estuarine/marine invertebrates, and mammals are considered, because they were the only taxa to have RQs above the listed species LOC. However, all other taxa are considered for indirect effects, given that there is a potential for indirect effects to taxa that might rely on plants and/or mammals for some stage of their life-cycle.

LOCATES identified a total of 583 listed species that co-occur with areas where sugar beets and soybeans are grown. A total of 47 states have listed species associated with sugar beet and soybean crops on which prothioconazole is proposed for use. Hawaii has the highest number of listed species (108) that may co-occur with the proposed prothioconazole use areas. Alabama and California are second highest with 88 total species each, followed by Tennessee (83). A tabulation of the number of unique listed species in each state associated with the proposed new uses of prothioconazole is provided in **Table 4.9**. A summary of all listed species by state is provided in **Appendix D**.

Table 4.9. Tabulation by State and Taxonomic Group of Listed Species that Occur in Prothioconazole Use Areas for Sugar Beets and Soybeans

State	Amphibians	Arachnid	Birds	Bivalve	Conifer/cycads	Crustacean	Dicot	Ferns & allies	Fish	Gastropod	Insect	Lichen	Mammal	Marine	Monocot	Reptiles	Total
Alabama	2	0	3	29	0	1	9	2	15	10	0	0	4	2	3	8	88
Arkansas	0	0	2	5	0	1	3	0	3	1	1	0	1	0	0	0	17
California	4	0	9	0	1	4	29	0	13	0	4	0	8	5	4	7	88
Colorado	0	0	2	0	0	0	1	0	5	0	0	0	2	0	1	0	11
Connecticut	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	6	9
Delaware	0	0	1	0	0	0	0	0	1	0	0	0	1	3	2	6	14
Florida	1	0	7	7	1	0	23	0	2	0	0	1	4	5	1	8	60
Georgia	1	0	4	15	1	0	9	2	11	0	0	0	2	4	4	6	59
Hawaii	0	1	13	0	0	1	72	2	0	1	0	0	1	2	11	4	108
Idaho	0	0	0	0	0	0	0	0	3	6	0	0	0	0	0	0	9
Illinois	0	0	2	7	0	1	7	0	1	1	2	0	2	0	2	0	25
Indiana	0	0	2	11	0	0	4	0	0	0	2	0	2	0	1	1	23
Iowa	0	0	2	2	0	0	3	1	2	1	0	0	1	0	2	0	14
Kansas	0	0	3	0	0	0	1	0	4	0	1	0	2	0	1	0	12
Kentucky	0	0	6	22	0	1	10	0	5	0	1	0	3	0	0	0	48
Louisiana	0	0	5	3	0	0	2	0	2	0	0	0	1	3	0	6	22
Maine	0	0	2	0	0	0	1	0	1	0	0	0	1	3	2	1	11
Maryland	0	0	1	1	0	0	4	0	2	0	2	0	2	3	2	5	22
Massachusetts	0	0	2	0	0	0	0	0	1	0	1	0	1	2	1	5	13
Michigan	0	0	2	2	0	0	3	0	0	0	4	0	3	0	3	1	18
Minnesota	0	0	1	2	0	0	2	0	1	0	1	0	2	0	2	0	11
Mississippi	0	0	5	9	0	0	2	1	3	0	0	0	3	2	0	9	34
Missouri	0	0	2	6	0	1	7	0	7	1	2	0	2	0	1	0	29
Montana	0	0	3	0	0	0	0	0	1	0	0	0	3	0	0	0	7
Nebraska	0	0	3	0	0	0	2	0	2	0	1	0	1	0	1	0	10
New Hampshire	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
New Jersey	0	0	2	0	0	0	2	0	1	0	0	0	1	3	3	5	17
New Mexico	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2
New York	0	0	2	1	0	0	4	1	1	1	1	0	1	3	1	6	22
North Carolina	0	1	4	8	0	0	20	0	3	0	1	1	2	4	5	5	54
North Dakota	0	0	3	0	0	0	0	0	1	0	0	0	0	0	1	0	5
Ohio	0	0	1	6	0	0	4	0	1	0	4	0	2	0	2	2	22
Oklahoma	0	0	6	2	0	0	0	0	4	0	1	0	3	0	2	0	18
Oregon	0	0	4	0	0	1	8	0	17	0	2	0	1	2	1	3	39
Pennsylvania	0	0	1	2	0	0	0	0	0	0	0	0	2	0	2	1	8
Rhode Island	0	0	1	0	0	0	1	0	1	0	1	0	0	3	0	4	11
South Carolina	1	0	3	1	0	0	12	1	1	0	0	1	1	4	6	6	37
South Dakota	0	0	3	0	0	0	0	0	2	0	1	0	1	0	1	0	8
Tennessee	0	1	3	37	0	1	16	1	15	3	0	1	3	0	2	0	83
Texas	3	7	12	0	0	1	14	0	3	0	6	0	4	2	2	6	60
Utah	0	0	0	0	0	0	3	0	1	0	0	0	1	0	0	0	5
Vermont	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	3
Virginia	1	0	2	16	0	2	12	0	06	1	2	0	5	3	4	5	59
Washington	0	0	0	0	0	0	0	0	11	0	0	0	1	2	0	2	16
West Virginia	1	0	0	1	0	0	3	0	0	1	0	0	4	0	1	0	11
Wisconsin	0	0	3	2	0	0	4	0	0	0	2	0	2	0	2	0	15
Wyoming	0	0	0	0	0	0	2	0	0	0	0	0	4	0	0	0	6
Total Unique Species	**11**	**9**	**44**	**68**	**2**	**13**	**211**	**6**	**77**	**25**	**20**	**2**	**31**	**9**	**34**	**21**	**583**

This preliminary analysis indicates that there is a potential for prothioconazole use on sugar beets and soybeans to overlap with listed species (and their designated critical habitat, if applicable) and that a more refined assessment is warranted. The more refined

assessment should involve clear delineation of the action area associated with fenarimol uses and best available information on the temporal and spatial co-location of listed species with respect to the action area. This analysis has not been conducted for this assessment.

5. Literature Cited

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Appendix A. Modeling Input and Output

stored as MNsugarbeets.out
Chemical: prothioconazole
PRZM environment: MNsugarbeetSTD.txt modified Tueday, 29 May 2007 at 12:57:22
EXAMS environment: ir298.exv modified Thuday, 29 August 2002 at 16:34:12
Metfile: w14914.dvf modified Wedday, 3 July 2002 at 10:05:52
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	5.178	5.1	4.825	4.535	4.31	1.345
1962	7.911	7.831	7.538	7.127	6.852	4.969
1963	9.076	8.989	8.649	8.215	7.952	6.405
1964	12.14	12.06	11.67	11.25	10.98	8.941
1965	16.91	16.74	16.06	15.04	14.36	11.97
1966	12.37	12.32	12.08	11.74	11.47	10.83
1967	12.18	12.09	11.8	11.25	10.82	9.754
1968	11.98	11.88	11.63	11.09	10.7	9.709
1969	15.54	15.43	14.85	13.78	13.62	11.87
1970	21.45	21.22	20.37	18.9	18.03	13.44
1971	20.95	20.76	20.31	19.55	18.74	14.47
1972	17.11	17.02	16.64	15.88	15.66	14.06
1973	19.44	19.23	18.61	17.44	16.61	11.98
1974	18.08	17.94	17.45	16.43	15.78	13.96
1975	16.03	15.94	15.4	15.08	14.9	14
1976	13.16	13.11	12.88	12.48	12.44	10.66
1977	22.64	22.36	21.31	20.87	20.49	16.24
1978	19.07	18.98	18.58	17.77	17.3	15.84
1979	20.6	20.43	19.79	18.59	17.36	15.38
1980	17.88	17.72	17.26	16.59	16	14.29
1981	13.57	13.51	13.27	12.77	12.42	11.76
1982	25.07	24.78	23.64	21.64	20.19	12.48
1983	17.7	17.59	17.16	16.31	15.99	13.82
1984	22.51	22.26	21.37	19.8	18.21	12.59
1985	16.7	16.6	16.2	15.43	15.04	13.96
1986	15.99	15.87	15.49	14.84	14.52	13.08
1987	12.23	12.18	11.97	11.53	11.25	10.19
1988	13.48	13.34	12.81	11.93	11.37	8.941
1989	14.71	14.58	14.1	13.61	13.12	10.79
1990	11.3	11.21	10.86	10.7	10.48	9.765

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			25.07	24.78	23.64	21.64	20.49	16.24
0.0645161290322581			22.64	22.36	21.37	20.87	20.19	15.84
0.0967741935483871			22.51	22.26	21.31	19.8	18.74	15.38
0.129032258064516			21.45	21.22	20.37	19.55	18.21	14.47
0.161290322580645			20.95	20.76	20.31	18.9	18.03	14.29
0.193548387096774			20.6	20.43	19.79	18.59	17.36	14.06
0.225806451612903			19.44	19.23	18.61	17.77	17.3	14
0.258064516129032			19.07	18.98	18.58	17.44	16.61	13.96
0.290322580645161			18.08	17.94	17.45	16.59	16	13.96
0.32258064516129	17.88		17.72	17.26	16.43	15.99	13.82	
0.354838709677419			17.7	17.59	17.16	16.31	15.78	13.44
0.387096774193548			17.11	17.02	16.64	15.88	15.66	13.08
0.419354838709677			16.91	16.74	16.2	15.43	15.04	12.59
0.451612903225806			16.7	16.6	16.06	15.08	14.9	12.48
0.483870967741936			16.03	15.94	15.49	15.04	14.52	11.98
0.516129032258065			15.99	15.87	15.4	14.84	14.36	11.97
0.548387096774194			15.54	15.43	14.85	13.78	13.62	11.87
0.580645161290323			14.71	14.58	14.1	13.61	13.12	11.76

0.612903225806452		13.57	13.51	13.27	12.77	12.44	10.83
0.645161290322581		13.48	13.34	12.88	12.48	12.42	10.79
0.677419354838710	13.16	13.11	12.81	11.93	11.47	10.66	
0.709677419354839		12.37	12.32	12.08	11.74	11.37	10.19
0.741935483870968		12.23	12.18	11.97	11.53	11.25	9.765
0.774193548387097		12.18	12.09	11.8	11.25	10.98	9.754
0.806451612903226		12.14	12.06	11.67	11.25	10.82	9.709
0.838709677419355		11.98	11.88	11.63	11.09	10.7	8.941
0.870967741935484		11.3	11.21	10.86	10.7	10.48	8.941
0.903225806451613		9.076	8.989	8.649	8.215	7.952	6.405
0.935483870967742		7.911	7.831	7.538	7.127	6.852	4.969
0.967741935483871		5.178	5.1	4.825	4.535	4.31	1.345

0.1	22.404	22.156	21.216	19.775	18.687	15.289	

Average of yearly averages: 11.5829666666667

Inputs generated by pe5.pl - Novemeber 2006

Data used for this run:
Output File: MNsugarbeets
Metfile: w14914.dvf
PRZM scenario: MNsugarbeetSTD.txt
EXAMS environment file: ir298.exv
Chemical Name: prothioconazole

Description	Variable Name	Value	Units	Comments	
Molecular weight	mwt	344.3	g/mol		
Henry's Law Const.	henry	2.96e-10	atm-m^3/mol		
Vapor Pressure	vapr	3e-9	torr		
Solubility	sol	300	mg/L		
Kd	Kd		mg/L		
Koc	Koc	523	mg/L		
Photolysis half-life	kdp	101.9	days	Half-life	
Aerobic Aquatic Metabolism	kbacw	385.2	days	Halfife	
Anaerobic Aquatic Metabolism		kbacs	0	days	Halfife
Aerobic Soil Metabolism	asm	1052.2	days	Halfife	
Hydrolysis:	pH 7	0	days	Half-life	
Method: CAM	2	integer	See PRZM manual		
Incorporation Depth:		DEPI		cm	
Application Rate:	TAPP	0.2	kg/ha		
Application Efficiency:		APPEFF	0.95	fraction	
Spray Drift	DRFT	0.16	fraction of application rate applied to pond		
Application Date	Date	24/8	dd/mm or dd/mmm or dd-mm or dd-mmm		
Interval 1 interval	14	days	Set to 0 or delete line for single app.		
app. rate 1	apprate		kg/ha		
Interval 2 interval	14	days	Set to 0 or delete line for single app.		
app. rate 2	apprate		kg/ha		
Record 17:	FILTRA				
IPSCND	1				
UPTKF					
Record 18:	PLVKRT				
PLDKRT					
FEXTRC	0.5				
Flag for Index Res. Run		IR	Reservoir		
Flag for runoff calc.		RUNOFF	total	none, monthly or total(average of entire run)	

stored as MSSoybeans.out
Chemical: prothioconazole
PRZM environment: MSsoybeanSTD.txt modified Tueday, 29 May 2007 at 12:58:06
EXAMS environment: ir298.exv modified Thuday, 29 August 2002 at 16:34:12
Metfile: w03940.dvf modified Wedday, 3 July 2002 at 10:05:46
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	5.565	5.362	4.644	3.87	3.267	1.205
1962	2	1.932	1.747	1.433	1.385	0.8182
1963	8.812	8.492	7.321	5.461	4.712	1.922
1964	3.15	3.065	2.745	2.416	2.305	1.283
1965	3.011	2.909	2.538	1.963	1.662	0.9639
1966	5.199	5.02	4.712	3.848	3.531	1.765
1967	5.071	4.902	4.586	4.249	3.875	1.791
1968	3.779	3.65	3.418	2.699	2.349	1.21
1969	2.552	2.468	2.157	1.81	1.694	0.9859
1970	2.241	2.164	1.889	1.517	1.397	0.9188
1971	2.69	2.601	2.365	2.016	1.988	1.001
1972	1.943	1.877	1.677	1.435	1.372	0.7693
1973	2.111	2.037	1.78	1.464	1.26	0.7102
1974	7.133	6.876	5.935	4.429	3.823	1.618
1975	4.891	4.765	4.223	3.761	3.473	1.616
1976	5.919	5.719	5.095	4.73	4.325	1.895
1977	3.94	3.81	3.396	3.052	2.96	1.507
1978	3.307	3.195	2.874	2.477	2.357	1.294
1979	12.55	12.16	10.79	9.062	8.42	3.384
1980	4.119	3.988	3.795	3.539	3.234	1.758
1981	10.19	9.957	8.642	6.514	5.899	2.585
1982	10.64	10.26	8.927	7.647	6.59	2.729
1983	6.127	5.923	5.611	4.573	3.99	1.968
1984	3.334	3.26	2.867	2.717	2.534	1.341
1985	3.512	3.394	2.963	2.4	2.254	1.202
1986	9.087	8.762	7.923	6.409	5.545	2.205
1987	9.974	9.615	8.543	6.504	5.496	2.266
1988	2.916	2.829	2.531	2.262	2.187	1.417
1989	10	9.648	8.766	6.941	5.955	2.511
1990	3.154	3.048	2.719	2.309	1.995	1.169

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			12.55	12.16	10.79	9.062	8.42	3.384
0.0645161290322581			10.64	10.26	8.927	7.647	6.59	2.729
0.0967741935483871			10.19	9.957	8.766	6.941	5.955	2.585
0.129032258064516			10	9.648	8.642	6.514	5.899	2.511
0.161290322580645			9.974	9.615	8.543	6.504	5.545	2.266
0.193548387096774			9.087	8.762	7.923	6.409	5.496	2.205
0.225806451612903			8.812	8.492	7.321	5.461	4.712	1.968
0.258064516129032			7.133	6.876	5.935	4.73	4.325	1.922
0.290322580645161			6.127	5.923	5.611	4.573	3.99	1.895
0.32258064516129	5.919		5.719	5.095	4.429	3.875	1.791	
0.354838709677419			5.565	5.362	4.712	4.249	3.823	1.765
0.387096774193548			5.199	5.02	4.644	3.87	3.531	1.758
0.419354838709677			5.071	4.902	4.586	3.848	3.473	1.618
0.451612903225806			4.891	4.765	4.223	3.761	3.267	1.616
0.483870967741936			4.119	3.988	3.795	3.539	3.234	1.507
0.516129032258065			3.94	3.81	3.418	3.052	2.96	1.417
0.548387096774194			3.779	3.65	3.396	2.717	2.534	1.341
0.580645161290323			3.512	3.394	2.963	2.699	2.357	1.294
0.612903225806452			3.334	3.26	2.874	2.477	2.349	1.283
0.645161290322581			3.307	3.195	2.867	2.416	2.305	1.21

0.67741935483871	3.154	3.065	2.745	2.4	2.254	1.205		
0.709677419354839		3.15	3.048	2.719	2.309	2.187	1.202	
0.741935483870968		3.011	2.909	2.538	2.262	1.995	1.169	
0.774193548387097		2.916	2.829	2.531	2.016	1.988	1.001	
0.806451612903226		2.69	2.601	2.365	1.963	1.694	0.9859	
0.838709677419355		2.552	2.468	2.157	1.81	1.662	0.9639	
0.870967741935484		2.241	2.164	1.889	1.517	1.397	0.9188	
0.903225806451613		2.111	2.037	1.78	1.464	1.385	0.8182	
0.935483870967742		2	1.932	1.747	1.435	1.372	0.7693	
0.967741935483871		1.943	1.877	1.677	1.433	1.26	0.7102	
0.1	10.171	9.9261	8.7536	6.8983	5.9494	2.5776		
					Average of yearly averages:		1.59361	

Inputs generated by pe5.pl - Novemeber 2006

Data used for this run:
Output File: MSSoybeans
Metfile: w03940.dvf
PRZM scenario: MSsoybeanSTD.txt
EXAMS environment file: ir298.exv
Chemical Name: prothioconazole

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	344.3	g/mol	
Henry's Law Const.	henry	2.96e-10	atm-m^3/mol	
Vapor Pressure	vapr	3e-9	torr	
Solubility	sol	300	mg/L	
Kd Kd			mg/L	
Koc Koc	523		mg/L	
Photolysis half-life	kdp	101.9	days	Half-life
Aerobic Aquatic Metabolism	kbacw	385.2	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	0	days	Halfife
Aerobic Soil Metabolism	asm	1052.2	days	Halfife
Hydrolysis:	pH 7	0	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI		cm	
Application Rate:	TAPP	0.105	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.16	fraction of application rate applied to pond	
Application Date	Date	15-5	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1 interval	10	days	Set to 0 or delete line for single app.	
app. rate 1	apprate		kg/ha	
Interval 2 interval	10	days	Set to 0 or delete line for single app.	
app. rate 2	apprate		kg/ha	
Record 17:	FILTRA			
IPSCND	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC	0.5			
Flag for Index Res. Run	IR	Reservoir		
Flag for runoff calc.	RUNOFF	total	none, monthly or total(average of entire run)	

Appendix B. Example Output of T-REX for Prothioconazole Use on Sugar Beets

Summary of Risk Quotient Calculations Based on Upper Bound Kenaga EECs – Prothioconazole Use on Sugar Beets

Table B-1. Upper Bound Kenaga, Acute Avian Dose-Based Risk Quotients

Size Class (grams)	Adjusted LD50	EECs and RQs							
		Short Grass		Tall Grass		Broadleaf Plants/ Small Insects		Fruits/Pods/ Seeds/ Large Insects	
		EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ
20	1440.86	61.86	0.04	28.35	0.02	34.80	0.02	3.87	0.00
100	1834.29	35.28	0.02	16.17	0.01	19.84	0.01	2.20	0.00
1000	2591.00	15.79	0.01	7.24	0.00	8.88	0.00	0.99	0.00

Table B-2. Upper Bound Kenaga, Subacute Avian Dietary Based Risk Quotients

	EECs and RQs							
	Short Grass		Tall Grass		Broadleaf Plants/ Small Insects		Fruits/Pods/ Seeds/ Large Insects	
LC50	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ
4252	54.32	0.01	24.89	0.01	30.55	0.01	3.39	0.00

Size class not used for dietary risk quotients

Table B-3. Upper Bound Kenaga, Chronic Avian Dietary Based Risk Quotients

	EECs and RQs							
	Short Grass		Tall Grass		Broadleaf Plants/ Small Insects		Fruits/Pods/ Seeds/ Large Insects	
NOAEC (ppm)	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ
449	54.32	0.12	24.89	0.06	30.55	0.07	3.39	0.01

Size class not used for dietary risk quotients

Table B-4. Upper Bound Kenaga, Acute Mammalian Dose-Based Risk Quotients

Size	Adjusted	EECs and RQs

Class (grams)	LD50	Short Grass		Tall Grass		Broadleaf Plants/ Small Insects		Fruits/Pods/ Seeds/ Large Insects		Granivore	
		EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ
15	5507.76	51.79	0.01	23.74	0.00	29.13	0.01	3.24	0.00	0.72	0.00
35	4456.37	35.79	0.01	16.40	0.00	20.13	0.00	2.24	0.00	0.50	0.00
1000	1927.52	8.30	0.00	3.80	0.00	4.67	0.00	0.52	0.00	0.12	0.00

Table B-5. Upper Bound Kenaga, Acute Mammalian Dietary Based Risk Quotients

LC50 (ppm)	EECs and RQs							
	Short Grass		Tall Grass		Broadleaf Plants/ Small Insects		Fruits/Pods/ Seeds/ Large Insects	
	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ
0	54.32	#####	24.89	#####	30.55	#####	3.39	#####

Size class not used for dietary risk quotients

Table B-6. Upper Bound Kenaga, Chronic Mammalian Dietary Based Risk Quotients

NOAEC (ppm)	EECs and RQs							
	Short Grass		Tall Grass		Broadleaf Plants/ Small Insects		Fruits/Pods/ Seeds/ Large Insects	
	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ
160	54.32	0.34	24.89	0.16	30.55	0.19	3.39	0.02

Size class not used for dietary risk quotients

Table B-7. Upper Bound Kenaga, Chronic Mammalian Dose-Based Risk Quotients

Size Class (grams)	Adjusted NOAEL	EECs and RQs									
		Short Grass		Tall Grass		Broadleaf Plants/ Small Insects		Fruits/Pods/ Seeds/ Large Insects		Granivore	
		EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ	EEC	RQ
15	20.88	51.79	2.48	23.74	1.14	29.13	1.40	3.24	0.16	0.72	0.03
35	16.89	35.79	2.12	16.40	0.97	20.13	1.19	2.24	0.13	0.50	0.03
1000	7.31	8.30	1.14	3.80	0.52	4.67	0.64	0.52	0.07	0.12	0.02

Appendix C. Example Output of TerrPlant for Aerial Application of Prothioconazole on Sugar Beets

Table 1. Chemical Identity.	
Chemical Name	Prothioconazole
PC code	x
Use	sugar beets
Application Method	aerial
Application Form	liquid
Solubility in Water (ppm)	300

Table 2. Input parameters used to derive EECs.			
Input Parameter	**Symbol**	**Value**	**Units**
Application Rate	A	0.178	y
Incorporation	I	1	none
Runoff Fraction	R	0.05	none
Drift Fraction	D	0.05	none

Table 3. EECs for Prothioconazole. Units in y.		
Description	**Equation**	**EEC**
Runoff to dry areas	(A/I)*R	0.0089
Runoff to semi-aquatic areas	(A/I)*R*10	0.089
Spray drift	**A*D**	**0.0089**
Total for dry areas	**((A/I)*R)+(A*D)**	**0.0178**
Total for semi-aquatic areas	**((A/I)*R*10)+(A*D)**	**0.0979**

Table 4. Plant survival and growth data used for RQ derivation. Units are in y.				
	Seedling Emergence		**Vegetative Vigor**	
Plant type	**EC_{25}**	**NOAEC**	**EC_{25}**	**NOAEC**
Monocot	x	x	x	x
Dicot	0.272	0.03	x	x

Table 5. RQ values for plants in dry and semi-aquatic areas exposed to Prothioconazole through runoff and/or spray drift.*				
Plant Type	**Listed Status**	**Dry**	**Semi-Aquatic**	**Spray Drift**
Monocot	non-listed	#VALUE!	#VALUE!	#DIV/0!
Monocot	listed	#VALUE!	#VALUE!	#DIV/0!
Dicot	non-listed	<0.1	0.36	<0.1
Dicot	listed	0.59	3.26	0.30
*If RQ > 1.0, the LOC is exceeded, resulting in potential for risk to that plant group.				

Appendix D. LOCATES Output of Listed Species by State

Species Listing by State with Use Criteria

No species were excluded
Minimum of 1 Acre.
All Medium Types Reported
Mammal, Marine mml, Bird, Amphibian, Reptile, Fish, Crustacean, Bivalve, Gastropod, Arachnid, Insect, Dicot, Monocot, Ferns, Conf/cycds, Coral, Lichen
soybeans for beans, sugarbeets for seed, sugarbeets for sugar

Alabama (88) species:

		Taxa	Critical Habitat
Salamander, Flatwoods *(Ambystoma cingulatum)*	Threatened	Amphibian Freshwater, Vernal pool, Terrestrial	No
Salamander, Red Hills *(Phaeognathus hubrichti)*	Threatened	Amphibian Freshwater, Terrestrial	No
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Stork, Wood *(Mycteria americana)*	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered	Bird Terrestrial	No
Combshell, Southern (=Penitent mussel) *(Epioblasma penita)*	Endangered	Bivalve Freshwater	No
Combshell, Upland *(Epioblasma metastriata)*	Endangered	Bivalve Freshwater	Yes
Kidneyshell, Triangular *(Ptychobranchus greenii)*	Endangered	Bivalve Freshwater	Yes
Mucket, Orangenacre *(Lampsilis perovalis)*	Threatened	Bivalve Freshwater	Yes
Mucket, Pink (Pearlymussel) *(Lampsilis abrupta)*	Endangered	Bivalve Freshwater	No
Mussel, Acornshell Southern *(Epioblasma othcaloogensis)*	Endangered	Bivalve Freshwater	Yes
Mussel, Alabama Moccasinshell *(Medionidus acutissimus)*	Threatened	Bivalve Freshwater	Yes
Mussel, Coosa Moccasinshell *(Medionidus parvulus)*	Endangered	Bivalve Freshwater	Yes
Mussel, Cumberland Combshell *(Epioblasma brevidens)*	Endangered	Bivalve Freshwater	Yes
Mussel, Dark Pigtoe *(Pleurobema furvum)*	Endangered	Bivalve Freshwater	Yes
Mussel, Fine-lined Pocketbook *(Lampsilis altilis)*	Threatened	Bivalve Freshwater	Yes
Mussel, Fine-rayed Pigtoe *(Fusconaia cuneolus)*	Endangered	Bivalve Freshwater	No

Alabama (88) species:

Mussel, Heavy Pigtoe (=Judge Tait's Mussel) *(Pleurobema taitianum)*	Endangered	Bivalve Freshwater	No
Mussel, Heelsplitter Inflated *(Potamilus inflatus)*	Threatened	Bivalve Freshwater	No
Mussel, Ovate Clubshell *(Pleurobema perovatum)*	Endangered	Bivalve Freshwater	Yes
Mussel, Ring Pink (=Golf Stick Pearly) *(Obovaria retusa)*	Endangered	Bivalve Freshwater	No
Mussel, Rough Pigtoe *(Pleurobema plenum)*	Endangered	Bivalve Freshwater	No
Mussel, Shiny Pigtoe *(Fusconaia cor)*	Endangered	Bivalve Freshwater	No
Mussel, Shiny-rayed Pocketbook *(Lampsilis subangulata)*	Endangered	Bivalve Freshwater	No
Mussel, Southern Clubshell *(Pleurobema decisum)*	Endangered	Bivalve Freshwater	Yes
Mussel, Southern Pigtoe *(Pleurobema georgianum)*	Endangered	Bivalve Freshwater	Yes
Pearlymussel, Alabama Lamp *(Lampsilis virescens)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Cracking *(Hemistena lata)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Cumberland Monkeyface *(Quadrula intermedia)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Orange-footed *(Plethobasus cooperianus)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Pale Lilliput *(Toxolasma cylindrellus)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Turgid-blossom *(Epioblasma turgidula)*	Endangered	Bivalve Freshwater	No
Pearlymussel, White Wartyback *(Plethobasus cicatricosus)*	Endangered	Bivalve Freshwater	No
Stirrupshell *(Quadrula stapes)*	Endangered	Bivalve Freshwater	No
Shrimp, Alabama Cave *(Palaemonias alabamae)*	Endangered	Crustacean Freshwater	No
Barbara Buttons, Mohr's *(Marshallia mohrii)*	Threatened	Dicot Terrestrial	No
Bladderpod, Lyrate *(Lesquerella lyrata)*	Threatened	Dicot Terrestrial	No
Clover, Leafy Prairie *(Dalea foliosa)*	Endangered	Dicot Terrestrial	No

Alabama (88) species:

		Taxa	Critical Habitat
Harperella	Endangered	Dicot	No
(Ptilimnium nodosum)		Freshwater	
Leather-flower, Alabama	Endangered	Dicot	No
(Clematis socialis)		Terrestrial	
Leather-flower, Morefield's	Endangered	Dicot	No
(Clematis morefieldii)		Terrestrial	
Pitcher-plant, Alabama Canebrake	Endangered	Dicot	No
(Sarracenia rubra alabamensis)		Freshwater, Terrestrial	
Pitcher-plant, Green	Endangered	Dicot	No
(Sarracenia oreophila)		Terrestrial, Freshwater	
Potato-bean, Price's	Threatened	Dicot	No
(Apios priceana)		Terrestrial	
Fern, American hart's-tongue	Threatened	Ferns	No
(Asplenium scolopendrium var. americanum)		Terrestrial	
Quillwort, Louisiana	Endangered	Ferns	No
(Isoetes louisianensis)		Freshwater, Terrestrial	
Cavefish, Alabama	Endangered	Fish	Yes
(Speoplatyrhinus poulsoni)		Freshwater	
Chub, Spotfin	Threatened	Fish	Yes
(Erimonax monachus)		Freshwater	
Darter, Boulder	Endangered	Fish	No
(Etheostoma wapiti)		Freshwater	
Darter, Goldline	Threatened	Fish	No
(Percina aurolineata)		Freshwater	
Darter, Slackwater	Threatened	Fish	Yes
(Etheostoma boschungi)		Freshwater	
Darter, Snail	Threatened	Fish	No
(Percina tanasi)		Freshwater	
Darter, Vermilion	Endangered	Fish	No
(Etheostoma chermocki)		Freshwater	
Darter, Watercress	Endangered	Fish	No
(Etheostoma nuchale)		Freshwater	
Madtom, Yellowfin	Threatened	Fish	Yes
(Noturus flavipinnis)		Freshwater	
Sculpin, Pygmy	Threatened	Fish	No
(Cottus paulus (=pygmaeus))		Freshwater	
Shiner, Blue	Threatened	Fish	No
(Cyprinella caerulea)		Freshwater	
Shiner, Cahaba	Endangered	Fish	No
(Notropis cahabae)		Freshwater	
Shiner, Palezone	Endangered	Fish	No
(Notropis albizonatus)		Freshwater	

Alabama (88) species:

		Taxa	Critical Habitat
Sturgeon, Alabama *(Scaphirhynchus suttkusi)*	Endangered	Fish Freshwater	No
Sturgeon, Gulf *(Acipenser oxyrinchus desotoi)*	Threatened	Fish Saltwater, Freshwater	Yes
Campeloma, Slender *(Campeloma decampi)*	Endangered	Gastropod Freshwater	No
Elimia, Lacy *(Elimia crenatella)*	Threatened	Gastropod Freshwater	No
Pebblesnail, Flat *(Lepyrium showalteri)*	Endangered	Gastropod Freshwater	No
Riversnail, Anthony's *(Athearnia anthonyi)*	Endangered	Gastropod Freshwater	No
Rocksnail, Painted *(Leptoxis taeniata)*	Threatened	Gastropod Freshwater	No
Rocksnail, Plicate *(Leptoxis plicata)*	Endangered	Gastropod Freshwater	No
Rocksnail, Round *(Leptoxis ampla)*	Threatened	Gastropod Freshwater	No
Snail, Armored *(Pyrgulopsis (=Marstonia) pachyta)*	Endangered	Gastropod Freshwater	No
Snail, Lioplax Cylindrical *(Lioplax cyclostomaformis)*	Endangered	Gastropod Freshwater	No
Snail, Tulotoma *(Tulotoma magnifica)*	Endangered	Gastropod Terrestrial	No
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal Subterraneous, Terrestrial	No
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal Subterraneous, Terrestrial	Yes
Mouse, Alabama Beach *(Peromyscus polionotus ammobates)*	Endangered	Mammal Terrestrial, Coastal (neritic)	Yes
Mouse, Perdido Key Beach *(Peromyscus polionotus trissyllepsis)*	Endangered	Mammal Coastal (neritic)	Yes
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml Saltwater	No
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml Saltwater	No
Grass, Tennessee Yellow-eyed *(Xyris tennesseensis)*	Endangered	Monocot Terrestrial	No
Trillium, Relict *(Trillium reliquum)*	Endangered	Monocot Terrestrial	No
Water-plantain, Kral's *(Sagittaria secundifolia)*	Threatened	Monocot Freshwater	No

Alabama (88) species:

		Taxa	Critical Habitat
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile	Yes
	Saltwater		
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile	No
	Saltwater		
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile	Yes
	Saltwater		
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile	No
	Saltwater		
Snake, Eastern Indigo *(Drymarchon corais couperi)*	Threatened	Reptile	No
	Terrestrial		
Tortoise, Gopher *(Gopherus polyphemus)*	Threatened	Reptile	No
	Terrestrial		
Turtle, Alabama Red-bellied *(Pseudemys alabamensis)*	Endangered	Reptile	No
	Terrestrial, Freshwater		
Turtle, Flattened Musk *(Sternotherus depressus)*	Threatened	Reptile	No
	Freshwater, Terrestrial		

Arkansas (17) species:

		Taxa	Critical Habitat
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird	No
	Terrestrial		
Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered	Bird	No
	Terrestrial		
Fatmucket, Arkansas *(Lampsilis powelli)*	Threatened	Bivalve	No
	Freshwater		
Mucket, Pink (Pearlymussel) *(Lampsilis abrupta)*	Endangered	Bivalve	No
	Freshwater		
Mussel, Scaleshell *(Leptodea leptodon)*	Endangered	Bivalve	No
	Freshwater		
Pearlymussel, Fat Pocketbook *(Potamilus capax)*	Endangered	Bivalve	No
	Freshwater		
Rock-pocketbook, Ouachita (=Wheeler's pm) *(Arkansia wheeleri)*	Endangered	Bivalve	No
	Freshwater		
Crayfish, Cave (Cambarus aculabrum) *(Cambarus aculabrum)*	Endangered	Crustacean	No
	Freshwater		
Fruit, Earth (=geocarpon) *(Geocarpon minimum)*	Threatened	Dicot	No
	Terrestrial		
Harperella *(Ptilimnium nodosum)*	Endangered	Dicot	No
	Freshwater		
Pondberry *(Lindera melissifolia)*	Endangered	Dicot	No
	Terrestrial		
Cavefish, Ozark *(Amblyopsis rosae)*	Threatened	Fish	No
	Freshwater		
Darter, Leopard *(Percina pantherina)*	Threatened	Fish	Yes
	Freshwater		

Arkansas (17) species:

		Taxa	Critical Habitat
Sturgeon, Pallid *(Scaphirhynchus albus)*	Endangered	Fish	No
	Freshwater		
Shagreen, Magazine Mountain *(Mesodon magazinensis)*	Threatened	Gastropod	No
	Terrestrial		
Beetle, American Burying *(Nicrophorus americanus)*	Endangered	Insect	No
	Terrestrial		
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal	No
	Subterraneous, Terrestrial		

California (88) species:

		Taxa	Critical Habitat
Frog, California Red-legged *(Rana aurora draytonii)*	Threatened	Amphibian	Yes
	Terrestrial, Freshwater		
Salamander, California Tiger *(Ambystoma californiense)*	Endangered	Amphibian	No
	Terrestrial, Vernal pool		
Salamander, Santa Cruz Long-toed *(Ambystoma macrodactylum croceum)*	Endangered	Amphibian	No
	Freshwater, Vernal pool, Terrestrial		
Toad, Arroyo Southwestern *(Bufo californicus (=microscaphus))*	Endangered	Amphibian	Yes
	Freshwater, Terrestrial		
Condor, California *(Gymnogyps californianus)*	Endangered	Bird	Yes
	Terrestrial		
Flycatcher, Southwestern Willow *(Empidonax traillii extimus)*	Endangered	Bird	Yes
	Terrestrial		
Murrelet, Marbled *(Brachyramphus marmoratus marmoratus)*	Threatened	Bird	Yes
	Freshwater, Terrestrial, Saltwater		
Pelican, Brown *(Pelecanus occidentalis)*	Endangered	Bird	No
	Terrestrial		
Plover, Western Snowy *(Charadrius alexandrinus nivosus)*	Threatened	Bird	Yes
	Terrestrial		
Rail, California Clapper *(Rallus longirostris obsoletus)*	Endangered	Bird	No
	Terrestrial		
Rail, Yuma Clapper *(Rallus longirostris yumanensis)*	Endangered	Bird	No
	Terrestrial		
Tern, California Least *(Sterna antillarum browni)*	Endangered	Bird	No
	Terrestrial		
Vireo, Least Bell's *(Vireo bellii pusillus)*	Endangered	Bird	Yes
	Terrestrial		
Cypress, Gowen *(Cupressus goveniana ssp. goveniana)*	Threatened	Conf/cycds	No
	Terrestrial		
Fairy Shrimp, Conservancy Fairy *(Branchinecta conservatio)*	Endangered	Crustacean	Yes
	Vernal pool		
Fairy Shrimp, Longhorn *(Branchinecta longiantenna)*	Endangered	Crustacean	Yes
	Vernal pool		
Fairy Shrimp, Vernal Pool *(Branchinecta lynchi)*	Threatened	Crustacean	Yes
	Vernal pool		

California (88) species:

		Taxa	Critical Habitat
Tadpole Shrimp, Vernal Pool *(Lepidurus packardi)*	Endangered	Crustacean Vernal pool	Yes
Adobe Sunburst, San Joaquin *(Pseudobahia peirsonii)*	Threatened	Dicot Terrestrial	No
Bird's-beak, Palmate-bracted *(Cordylanthus palmatus)*	Endangered	Dicot Terrestrial	No
Cactus, Bakersfield *(Opuntia treleasei)*	Endangered	Dicot Terrestrial	No
Checker-mallow, Keck's *(Sidalcea keckii)*	Endangered	Dicot Terrestrial	Yes
Clarkia, Springville *(Clarkia springvillensis)*	Threatened	Dicot Terrestrial	No
Clover, Fleshy Owl's *(Castilleja campestris ssp. succulenta)*	Threatened	Dicot Vernal pool	Yes
Clover, Monterey *(Trifolium trichocalyx)*	Endangered	Dicot Terrestrial	No
Dudleya, Santa Clara Valley *(Dudleya setchellii)*	Endangered	Dicot Terrestrial	No
Evening-primrose, San Benito *(Camissonia benitensis)*	Threatened	Dicot Terrestrial	No
Fiddleneck, Large-flowered *(Amsinckia grandiflora)*	Endangered	Dicot Terrestrial	Yes
Gilia, Monterey *(Gilia tenuiflora ssp. arenaria)*	Endangered	Dicot Terrestrial	No
Golden Sunburst, Hartweg's *(Pseudobahia bahiifolia)*	Endangered	Dicot Terrestrial	No
Goldfields, Contra Costa *(Lasthenia conjugens)*	Endangered	Dicot Terrestrial	Yes
Grass, Hairy Orcutt *(Orcuttia pilosa)*	Endangered	Dicot Vernal pool	Yes
Jewelflower, California *(Caulanthus californicus)*	Endangered	Dicot Terrestrial	No
Layia, Beach *(Layia carnosa)*	Endangered	Dicot Terrestrial, Coastal (neritic)	No
Lupine, Clover *(Lupinus tidestromii)*	Endangered	Dicot Coastal (neritic)	No
Mallow, Kern *(Eremalche kernensis)*	Endangered	Dicot Terrestrial	No
Milk-vetch, Coastal Dunes *(Astragalus tener var. titi)*	Endangered	Dicot Terrestrial	No
Milk-vetch, Pierson's *(Astragalus magdalenae var. peirsonii)*	Threatened	Dicot Terrestrial	Yes

California (88) species:

		Taxa	Critical Habitat
Potentilla, Hickman's *(Potentilla hickmanii)*	Endangered	Dicot	No
	Terrestrial		
Pussypaws, Mariposa *(Calyptridium pulchellum)*	Threatened	Dicot	No
	Terrestrial		
Spineflower, Monterey *(Chorizanthe pungens var. pungens)*	Threatened	Dicot	Yes
	Terrestrial		
Spineflower, Robust *(Chorizanthe robusta var. robusta)*	Endangered	Dicot	Yes
	Terrestrial		
Spurge, Hoover's *(Chamaesyce hooveri)*	Threatened	Dicot	Yes
	Vernal pool		
Tarplant, Santa Cruz *(Holocarpha macradenia)*	Threatened	Dicot	Yes
	Terrestrial		
Tuctoria, Green's *(Tuctoria greenei)*	Endangered	Dicot	Yes
	Vernal pool		
Wallflower, Menzie's *(Erysimum menziesii)*	Endangered	Dicot	No
	Terrestrial		
Woolly-threads, San Joaquin *(Monolopia (=Lembertia) congdonii)*	Endangered	Dicot	No
	Terrestrial		
Chub, Bonytail *(Gila elegans)*	Endangered	Fish	Yes
	Freshwater		
Chub, Mohave Tui *(Gila bicolor mohavensis)*	Endangered	Fish	No
	Freshwater		
Goby, Tidewater *(Eucyclogobius newberryi)*	Endangered	Fish	Yes
	Freshwater		
Pupfish, Desert *(Cyprinodon macularius)*	Endangered	Fish	Yes
	Freshwater		
Salmon, Chinook (Central Valley Fall Run) *(Oncorhynchus (=Salmo) tshawytscha)*	Threatened	Fish	No
	Brackish, Freshwater, Saltwater		
Smelt, Delta *(Hypomesus transpacificus)*	Threatened	Fish	Yes
	Freshwater, Brackish		
Squawfish, Colorado *(Ptychocheilus lucius)*	Endangered	Fish	Yes
	Freshwater		
Steelhead, (California Central Valley population) *(Oncorhynchus (=Salmo) mykiss)*	Threatened	Fish	Yes
	Brackish, Freshwater, Saltwater		
Steelhead, (South-Central California population) *(Oncorhynchus (=Salmo) mykiss)*	Threatened	Fish	Yes
	Freshwater, Saltwater, Brackish		
Sucker, Razorback *(Xyrauchen texanus)*	Endangered	Fish	Yes
	Freshwater		
Trout, Lahontan Cutthroat *(Oncorhynchus clarki henshawi)*	Threatened	Fish	No
	Freshwater		
Trout, Little Kern Golden *(Oncorhynchus aguabonita whitei)*	Threatened	Fish	Yes
	Freshwater		

California (88) species:

		Taxa	Critical Habitat
Trout, Paiute Cutthroat *(Oncorhynchus clarki seleniris)*	Threatened	Fish Freshwater	No
Beetle, Valley Elderberry Longhorn *(Desmocerus californicus dimorphus)*	Threatened	Insect Terrestrial	Yes
Butterfly, Smith's Blue *(Euphilotes enoptes smithi)*	Endangered	Insect Terrestrial	No
Fly, Delhi Sands Flower-loving *(Rhaphiomidas terminatus abdominalis)*	Endangered	Insect Terrestrial	No
Moth, Kern Primrose Sphinx *(Euproserpinus euterpe)*	Threatened	Insect Terrestrial	No
Fox, San Joaquin Kit *(Vulpes macrotis mutica)*	Endangered	Mammal Terrestrial	No
Kangaroo Rat, Fresno *(Dipodomys nitratoides exilis)*	Endangered	Mammal Terrestrial	Yes
Kangaroo Rat, Giant *(Dipodomys ingens)*	Endangered	Mammal Terrestrial	No
Kangaroo Rat, Tipton *(Dipodomys nitratoides nitratoides)*	Endangered	Mammal Terrestrial	No
Rabbit, Riparian Brush *(Sylvilagus bachmani riparius)*	Endangered	Mammal Terrestrial	No
Sheep, Peninsular Bighorn *(Ovis canadensis)*	Endangered	Mammal Terrestrial	Yes
Shrew, Buena Vista Lake Ornate *(Sorex ornatus relictus)*	Endangered	Mammal Terrestrial	Yes
Woodrat, Riparian *(Neotoma fuscipes riparia)*	Endangered	Mammal Terrestrial	No
Otter, Southern Sea *(Enhydra lutris nereis)*	Threatened	Marine mml Saltwater	No
Seal, Guadalupe Fur *(Arctocephalus townsendi)*	Threatened	Marine mml Coastal (neritic), Saltwater	No
Sea-lion, Steller (eastern) *(Eumetopias jubatus)*	Threatened	Marine mml Saltwater	Yes
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml Saltwater	No
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml Saltwater	No
Amole, Purple *(Chlorogalum purpureum var. purpureum)*	Threatened	Monocot Terrestrial	Yes
Grass, Colusa *(Neostapfia colusana)*	Threatened	Monocot Vernal pool	No
Grass, San Joaquin Valley Orcutt *(Orcuttia inaequalis)*	Threatened	Monocot Vernal pool	Yes

California (88) species:

	Taxa	Critical Habitat
Piperia, Yadon's *(Piperia yadonii)*		
Endangered	Monocot	No
Terrestrial		
Lizard, Blunt-nosed Leopard *(Gambelia silus)*		
Endangered	Reptile	No
Terrestrial		
Sea turtle, green *(Chelonia mydas)*		
Endangered	Reptile	No
Saltwater		
Sea turtle, leatherback *(Dermochelys coriacea)*		
Endangered	Reptile	Yes
Saltwater		
Sea turtle, loggerhead *(Caretta caretta)*		
Threatened	Reptile	No
Saltwater		
Sea turtle, olive ridley *(Lepidochelys olivacea)*		
Threatened	Reptile	No
Saltwater		
Snake, Giant Garter *(Thamnophis gigas)*		
Threatened	Reptile	No
Freshwater, Terrestrial		
Tortoise, Desert *(Gopherus agassizii)*		
Threatened	Reptile	Yes
Terrestrial		

Colorado (11) species:

	Taxa	Critical Habitat
Crane, Whooping *(Grus americana)*		
Endangered	Bird	Yes
Terrestrial, Freshwater		
Owl, Mexican Spotted *(Strix occidentalis lucida)*		
Threatened	Bird	Yes
Terrestrial		
Butterfly Plant, Colorado *(Gaura neomexicana var. coloradensis)*		
Threatened	Dicot	Yes
Terrestrial		
Chub, Bonytail *(Gila elegans)*		
Endangered	Fish	Yes
Freshwater		
Chub, Humpback *(Gila cypha)*		
Endangered	Fish	Yes
Freshwater		
Squawfish, Colorado *(Ptychocheilus lucius)*		
Endangered	Fish	Yes
Freshwater		
Sucker, Razorback *(Xyrauchen texanus)*		
Endangered	Fish	Yes
Freshwater		
Trout, Greenback Cutthroat *(Oncorhynchus clarki stomias)*		
Threatened	Fish	No
Freshwater		
Ferret, Black-footed *(Mustela nigripes)*		
Endangered	Mammal	No
Terrestrial		
Mouse, Preble's Meadow Jumping *(Zapus hudsonius preblei)*		
Threatened	Mammal	Yes
Terrestrial		
Ladies'-tresses, Ute *(Spiranthes diluvialis)*		
Threatened	Monocot	No
Terrestrial		

Connecticut (9) species:

	Taxa	Critical Habitat
Bat, Indiana *(Myotis sodalis)*		
Endangered	Mammal	Yes
Subterraneous, Terrestrial		

Connecticut (9) species:

		Taxa	Critical Habitat
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml Saltwater	Yes
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot Terrestrial	No
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile Saltwater	No
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile Saltwater	Yes
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile Saltwater	No
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile Saltwater	Yes
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile Saltwater	No
Turtle, Bog (Northern population) *(Clemmys muhlenbergii)*	Threatened	Reptile Terrestrial, Freshwater	No

Delaware (14) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Sturgeon, Shortnose *(Acipenser brevirostrum)*	Endangered	Fish Saltwater, Freshwater	No
Squirrel, Delmarva Peninsula Fox *(Sciurus niger cinereus)*	Endangered	Mammal Terrestrial	No
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml Saltwater	No
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml Saltwater	No
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml Saltwater	Yes
Pink, Swamp *(Helonias bullata)*	Threatened	Monocot Terrestrial, Freshwater	No
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot Terrestrial	No
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile Saltwater	No
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile Saltwater	Yes
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile Saltwater	No
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile Saltwater	Yes
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile Saltwater	No

Delaware (14) species:

		Taxa	Critical Habitat
Turtle, Bog (Northern population) *(Clemmys muhlenbergii)*	Threatened	Reptile	No
	Terrestrial, Freshwater		

Florida (60) species:

		Taxa	Critical Habitat
Salamander, Flatwoods *(Ambystoma cingulatum)*	Threatened	Amphibian	No
	Freshwater, Vernal pool, Terrestrial		
Caracara, Audubon's Crested *(Polyborus plancus audubonii)*	Threatened	Bird	No
	Terrestrial		
Kite, Everglade Snail *(Rostrhamus sociabilis plumbeus)*	Endangered	Bird	Yes
	Terrestrial		
Plover, Piping *(Charadrius melodus)*	Endangered	Bird	Yes
	Terrestrial		
Scrub-Jay, Florida *(Aphelocoma coerulescens)*	Threatened	Bird	No
	Terrestrial		
Sparrow, Florida Grasshopper *(Ammodramus savannarum floridanus)*	Endangered	Bird	No
	Terrestrial		
Stork, Wood *(Mycteria americana)*	Endangered	Bird	No
	Terrestrial		
Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered	Bird	No
	Terrestrial		
Bankclimber, Purple *(Elliptoideus sloatianus)*	Threatened	Bivalve	No
	Freshwater		
Mussel, Gulf Moccasinshell *(Medionidus penicillatus)*	Endangered	Bivalve	No
	Freshwater		
Mussel, Ochlockonee Moccasinshell *(Medionidus simpsonianus)*	Endangered	Bivalve	No
	Freshwater		
Mussel, Oval Pigtoe *(Pleurobema pyriforme)*	Endangered	Bivalve	No
	Freshwater		
Mussel, Shiny-rayed Pocketbook *(Lampsilis subangulata)*	Endangered	Bivalve	No
	Freshwater		
Slabshell, Chipola *(Elliptio chipolaensis)*	Threatened	Bivalve	No
	Freshwater		
Threeridge, Fat (Mussel) *(Amblema neislerii)*	Endangered	Bivalve	No
	Freshwater		
Torreya, Florida *(Torreya taxifolia)*	Endangered	Conf/cycds	No
	Terrestrial		
Blazing Star, Scrub *(Liatris ohlingerae)*	Endangered	Dicot	No
	Terrestrial		
Bonamia, Florida *(Bonamia grandiflora)*	Threatened	Dicot	No
	Terrestrial		
Buckwheat, Scrub *(Eriogonum longifolium var. gnaphalifolium)*	Threatened	Dicot	No
	Terrestrial		
Campion, Fringed *(Silene polypetala)*	Endangered	Dicot	No
	Terrestrial		

Florida (60) species:

		Taxa	Critical Habitat
Chaffseed, American *(Schwalbea americana)*	Endangered	Dicot Terrestrial	No
Fringe Tree, Pygmy *(Chionanthus pygmaeus)*	Endangered	Dicot Terrestrial	No
Gooseberry, Miccosukee *(Ribes echinellum)*	Threatened	Dicot Terrestrial	No
Harebells, Avon Park *(Crotalaria avonensis)*	Endangered	Dicot Terrestrial	No
Hypericum, Highlands Scrub *(Hypericum cumulicola)*	Endangered	Dicot Terrestrial	No
Lupine, Scrub *(Lupinus aridorum)*	Endangered	Dicot Terrestrial	No
Mint, Longspurred *(Dicerandra cornutissima)*	Endangered	Dicot Terrestrial	No
Mustard, Carter's *(Warea carteri)*	Endangered	Dicot Terrestrial	No
Pinkroot, Gentian *(Spigelia gentianoides)*	Endangered	Dicot Terrestrial	No
Plum, Scrub *(Prunus geniculata)*	Endangered	Dicot Terrestrial	No
Polygala, Lewton's *(Polygala lewtonii)*	Endangered	Dicot Terrestrial	No
Rhododendron, Chapman *(Rhododendron chapmanii)*	Endangered	Dicot Terrestrial	No
Rosemary, Short-leaved *(Conradina brevifolia)*	Endangered	Dicot Terrestrial	No
Sandlace *(Polygonella myriophylla)*	Endangered	Dicot Terrestrial	No
Warea, Wide-leaf *(Warea amplexifolia)*	Endangered	Dicot Terrestrial	No
Whitlow-wort, Papery *(Paronychia chartacea)*	Threatened	Dicot Terrestrial	No
Wings, Pigeon *(Clitoria fragrans)*	Threatened	Dicot Terrestrial	No
Wireweed *(Polygonella basiramia)*	Endangered	Dicot Terrestrial	No
Ziziphus, Florida *(Ziziphus celata)*	Endangered	Dicot Terrestrial	No
Darter, Okaloosa *(Etheostoma okaloosae)*	Endangered	Fish Freshwater	No
Sturgeon, Gulf *(Acipenser oxyrinchus desotoi)*	Threatened	Fish Saltwater, Freshwater	Yes

Florida (60) species:

	Taxa	Critical Habitat
Cladonia, Florida Perforate *(Cladonia perforata)*	Endangered	Lichen	No
	Terrestrial		
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal	No
	Subterraneous, Terrestrial		
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal	Yes
	Subterraneous, Terrestrial		
Mouse, Perdido Key Beach *(Peromyscus polionotus trissyllepsis)*	Endangered	Mammal	Yes
	Coastal (neritic)		
Panther, Florida *(Puma (=Felis) concolor coryi)*	Endangered	Mammal	No
	Terrestrial		
Manatee, West Indian *(Trichechus manatus)*	Endangered	Marine mml	Yes
	Saltwater		
Seal, Caribbean Monk *(Monachus tropicalis)*	Endangered	Marine mml	No
	Coastal (neritic), Saltwater		
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml	No
	Saltwater		
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml	No
	Saltwater		
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml	Yes
	Saltwater		
Beargrass, Britton's *(Nolina brittoniana)*	Endangered	Monocot	No
	Terrestrial		
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile	No
	Saltwater		
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile	Yes
	Saltwater		
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile	No
	Saltwater		
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile	Yes
	Saltwater		
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile	No
	Saltwater		
Skink, Blue-tailed Mole *(Eumeces egregius lividus)*	Threatened	Reptile	No
	Terrestrial		
Skink, Sand *(Neoseps reynoldsi)*	Threatened	Reptile	No
	Terrestrial		
Snake, Eastern Indigo *(Drymarchon corais couperi)*	Threatened	Reptile	No
	Terrestrial		

Georgia (59) species:

	Taxa	Critical Habitat
Salamander, Flatwoods *(Ambystoma cingulatum)*	Threatened	Amphibian	No
	Freshwater, Vernal pool, Terrestrial		
Plover, Piping *(Charadrius melodus)*	Endangered	Bird	Yes
	Terrestrial		

Georgia (59) species:

		Taxa	Critical Habitat
Stork, Wood *(Mycteria americana)*	Endangered	Bird Terrestrial	No
Warbler (=Wood), Kirtland's *(Dendroica kirtlandii)*	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered	Bird Terrestrial	No
Bankclimber, Purple *(Elliptoideus sloatianus)*	Threatened	Bivalve Freshwater	No
Combshell, Upland *(Epioblasma metastriata)*	Endangered	Bivalve Freshwater	Yes
Kidneyshell, Triangular *(Ptychobranchus greenii)*	Endangered	Bivalve Freshwater	Yes
Mucket, Pink (Pearlymussel) *(Lampsilis abrupta)*	Endangered	Bivalve Freshwater	No
Mussel, Acornshell Southern *(Epioblasma othcaloogensis)*	Endangered	Bivalve Freshwater	Yes
Mussel, Alabama Moccasinshell *(Medionidus acutissimus)*	Threatened	Bivalve Freshwater	Yes
Mussel, Coosa Moccasinshell *(Medionidus parvulus)*	Endangered	Bivalve Freshwater	Yes
Mussel, Fine-lined Pocketbook *(Lampsilis altilis)*	Threatened	Bivalve Freshwater	Yes
Mussel, Gulf Moccasinshell *(Medionidus penicillatus)*	Endangered	Bivalve Freshwater	No
Mussel, Oval Pigtoe *(Pleurobema pyriforme)*	Endangered	Bivalve Freshwater	No
Mussel, Ovate Clubshell *(Pleurobema perovatum)*	Endangered	Bivalve Freshwater	Yes
Mussel, Shiny-rayed Pocketbook *(Lampsilis subangulata)*	Endangered	Bivalve Freshwater	No
Mussel, Southern Clubshell *(Pleurobema decisum)*	Endangered	Bivalve Freshwater	Yes
Mussel, Southern Pigtoe *(Pleurobema georgianum)*	Endangered	Bivalve Freshwater	Yes
Threeridge, Fat (Mussel) *(Amblema neislerii)*	Endangered	Bivalve Freshwater	No
Torreya, Florida *(Torreya taxifolia)*	Endangered	Conf/cycds Terrestrial	No
Amphianthus, Little *(Amphianthus pusillus)*	Threatened	Dicot Freshwater	No
Barbara Buttons, Mohr's *(Marshallia mohrii)*	Threatened	Dicot Terrestrial	No

Georgia (59) species:

		Taxa	Critical Habitat
Campion, Fringed *(Silene polypetala)*	Endangered	Dicot	No
	Terrestrial		
Dropwort, Canby's *(Oxypolis canbyi)*	Endangered	Dicot	No
	Terrestrial, Freshwater		
Pitcher-plant, Green *(Sarracenia oreophila)*	Endangered	Dicot	No
	Terrestrial, Freshwater		
Pondberry *(Lindera melissifolia)*	Endangered	Dicot	No
	Terrestrial		
Rattleweed, Hairy *(Baptisia arachnifera)*	Endangered	Dicot	No
	Terrestrial		
Skullcap, Large-flowered *(Scutellaria montana)*	Threatened	Dicot	No
	Terrestrial		
Spiraea, Virginia *(Spiraea virginiana)*	Threatened	Dicot	No
	Terrestrial		
Quillwort, Black-spored *(Isoetes melanospora)*	Endangered	Ferns	No
	Vernal pool		
Quillwort, Mat-forming *(Isoetes tegetiformans)*	Endangered	Ferns	No
	Vernal pool		
Chub, Spotfin *(Erimonax monachus)*	Threatened	Fish	Yes
	Freshwater		
Darter, Amber *(Percina antesella)*	Endangered	Fish	Yes
	Freshwater		
Darter, Cherokee *(Etheostoma scotti)*	Threatened	Fish	No
	Freshwater		
Darter, Etowah *(Etheostoma etowahae)*	Endangered	Fish	No
	Freshwater		
Darter, Goldline *(Percina aurolineata)*	Threatened	Fish	No
	Freshwater		
Darter, Snail *(Percina tanasi)*	Threatened	Fish	No
	Freshwater		
Logperch, Conasauga *(Percina jenkinsi)*	Endangered	Fish	Yes
	Freshwater		
Madtom, Yellowfin *(Noturus flavipinnis)*	Threatened	Fish	Yes
	Freshwater		
Shiner, Blue *(Cyprinella caerulea)*	Threatened	Fish	No
	Freshwater		
Sturgeon, Gulf *(Acipenser oxyrinchus desotoi)*	Threatened	Fish	Yes
	Saltwater, Freshwater		
Sturgeon, Shortnose *(Acipenser brevirostrum)*	Endangered	Fish	No
	Saltwater, Freshwater		
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal	No
	Subterraneous, Terrestrial		

Georgia (59) species:

	Taxa	Critical Habitat
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal	Yes
		Subterraneous, Terrestrial	
Manatee, West Indian *(Trichechus manatus)*	Endangered	Marine mml	Yes
		Saltwater	
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml	No
		Saltwater	
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml	No
		Saltwater	
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml	Yes
		Saltwater	
Grass, Tennessee Yellow-eyed *(Xyris tennesseensis)*	Endangered	Monocot	No
		Terrestrial	
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot	No
		Terrestrial	
Trillium, Relict *(Trillium reliquum)*	Endangered	Monocot	No
		Terrestrial	
Water-plantain, Kral's *(Sagittaria secundifolia)*	Threatened	Monocot	No
		Freshwater	
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile	No
		Saltwater	
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile	Yes
		Saltwater	
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile	No
		Saltwater	
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile	Yes
		Saltwater	
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile	No
		Saltwater	
Snake, Eastern Indigo *(Drymarchon corais couperi)*	Threatened	Reptile	No
		Terrestrial	

Hawaii (108) species:

	Taxa	Critical Habitat
Spider, Kauai Cave Wolf *(Gopherus polyphemus)*	Endangered	Arachnid	Yes
		Terrestrial, Subterraneous	
'Akia Loa, Kauai (Hemignathus procerus) *(Hemignathus procerus)*	Endangered	Bird	No
		Terrestrial	
Coot, Hawaiian (=Alae keo keo) *(Fulica americana alai)*	Endangered	Bird	No
		Terrestrial	
Duck, Hawaiian (Koloa) *(Anas wyvilliana)*	Endangered	Bird	No
		Freshwater, Terrestrial	
Goose, Hawaiian (Nene) *(Branta (=Nesochen) sandvicensis)*	Endangered	Bird	No
		Terrestrial, Freshwater	
Moorhen, Hawaiian Common *(Gallinula chloropus sandvicensis)*	Endangered	Bird	No
		Terrestrial	

Hawaii (108) species:

		Taxa	Critical Habitat
Nuku Pu'u *(Hemignathus lucidus)*	Endangered	Bird Terrestrial	No
'O'o, Kauai (='A'a) *(Moho braccatus)*	Endangered	Bird Terrestrial	No
'O'u (Honeycreeper) *(Psittirostra psittacea)*	Endangered	Bird Terrestrial	No
Petrel, Hawaiian Dark-rumped *(Pterodroma phaeopygia sandwichensis)*	Endangered	Bird Terrestrial	No
Shearwater, Newell's Townsend's *(Puffinus auricularis newelli)*	Threatened	Bird Terrestrial, Saltwater	No
Stilt, Hawaiian (=Ae'o) *(Himantopus mexicanus knudseni)*	Endangered	Bird Terrestrial	No
Thrush, Large Kauai *(Myadestes myadestinus)*	Endangered	Bird Terrestrial	No
Thrush, Small Kauai (Puaiohi) *(Myadestes palmeri)*	Endangered	Bird Terrestrial	No
Amphipod, Kauai Cave *(Spelaeorchestia koloana)*	Endangered	Crustacean Freshwater, Subterraneous	Yes
A'e (Zanthoxylum hawaiiense) *(Zanthoxylum hawaiiense)*	Endangered	Dicot Terrestrial	Yes
'Aiea (Nothocestrum peltatum) *(Nothocestrum peltatum)*	Endangered	Dicot Terrestrial	Yes
'Akoko (Euphorbia haeleeleana) *(Euphorbia haeleeleana)*	Endangered	Dicot Terrestrial	Yes
Alani (Melicope haupuensis) *(Melicope haupuensis)*	Endangered	Dicot Terrestrial	Yes
Alani (Melicope knudsenii) *(Melicope knudsenii)*	Endangered	Dicot Terrestrial	Yes
Alani (Melicope pallida) *(Melicope pallida)*	Endangered	Dicot Terrestrial	Yes
Alani (Melicope quadrangularis) *(Melicope quadrangularis)*	Endangered	Dicot Terrestrial	No
Alsinidendron viscosum (ncn) *(Alsinidendron viscosum)*	Endangered	Dicot Terrestrial	Yes
Aupaka (Isodendrion laurifolium) *(Isodendrion laurifolium)*	Endangered	Dicot Terrestrial	Yes
Aupaka (Isodendrion longifolium) *(Isodendrion longifolium)*	Threatened	Dicot Terrestrial	Yes
'Awiwi (Centaurium sebaeoides) *(Centaurium sebaeoides)*	Endangered	Dicot Terrestrial	Yes
'Awiwi (Hedyotis cookiana) *(Hedyotis cookiana)*	Endangered	Dicot Terrestrial	Yes

Hawaii (108) species:

		Taxa	Critical Habitat
Bonamia menziesii (ncn) *(Bonamia menziesii)*	Endangered Terrestrial	Dicot	Yes
Chamaesyce Halemanui (ncn) *(Chamaesyce halemanui)*	Endangered Terrestrial	Dicot	Yes
Cyanea undulata (ncn) *(Cyanea undulata)*	Endangered Terrestrial	Dicot	Yes
Delissea rhytodisperma (ncn) *(Delissea rhytidosperma)*	Endangered Terrestrial	Dicot	Yes
Dubautia latifolia (ncn) *(Dubautia latifolia)*	Endangered Terrestrial	Dicot	Yes
Dubautia pauciflorula (ncn) *(Dubautia pauciflorula)*	Endangered Terrestrial	Dicot	Yes
Gouania meyenii (ncn) *(Gouania meyenii)*	Endangered Terrestrial	Dicot	Yes
Haha (Cyanea asarifolia) *(Cyanea asarifolia)*	Endangered Terrestrial	Dicot	Yes
Haha (Cyanea recta) *(Cyanea recta)*	Threatened Terrestrial	Dicot	Yes
Haha (Cyanea remyi) *(Cyanea remyi)*	Endangered Terrestrial	Dicot	Yes
Ha'lwale (Cyrtandra limahuliensis) *(Cyrtandra limahuliensis)*	Threatened Terrestrial	Dicot	Yes
Hau Kauhiwi (Hibiscadelphus woodi) *(Hibiscadelphus woodii)*	Endangered Terrestrial	Dicot	Yes
Hau Kuahiwi (Hibiscadelphus distans) *(Hibiscadelphus distans)*	Endangered Terrestrial	Dicot	No
Heau (Exocarpos luteolus) *(Exocarpos luteolus)*	Endangered Terrestrial	Dicot	Yes
Hedyotis St.-Johnii (ncn) *(Hedyotis st.-johnii)*	Endangered Terrestrial	Dicot	Yes
Hesperomannia lydgatei (ncn) *(Hesperomannia lydgatei)*	Endangered Terrestrial	Dicot	Yes
Hibiscus, Clay's *(Hibiscus clayi)*	Endangered Terrestrial	Dicot	Yes
Iliau (Wilkesia hobdyi) *(Wilkesia hobdyi)*	Endangered Terrestrial	Dicot	Yes
Kamakahala (Labordia lydgatei) *(Labordia lydgatei)*	Endangered Terrestrial	Dicot	Yes
Kamakahala (Labordia tinifolia var. wahiawaen) *(Labordia tinifolia var. wahiawaensis)*	Endangered Terrestrial	Dicot	Yes
Kaulu (Pteralyxia kauaiensis) *(Pteralyxia kauaiensis)*	Endangered Terrestrial	Dicot	Yes

Hawaii (108) species:

		Taxa	Critical Habitat
Koki'o (Kokia kauaiensis) *(Kokia kauaiensis)*	Endangered Terrestrial	Dicot	Yes
Koki'o Ke'oke'o (Hibiscus waimeae ssp. hannerae) *(Hibiscus waimeae ssp. hannerae)*	Endangered Terrestrial	Dicot	Yes
Kolea (Myrsine linearifolia) *(Myrsine linearifolia)*	Threatened Terrestrial	Dicot	Yes
Kuawawaenohu (Alsinidendron lychnoides) *(Alsinidendron lychnoides)*	Endangered Terrestrial	Dicot	Yes
Laukahi Kuahiwi (Plantago princeps) *(Plantago princeps)*	Endangered Terrestrial	Dicot	Yes
Laulihilihi (Schiedea stellarioides) *(Schiedea stellarioides)*	Endangered Terrestrial	Dicot	Yes
Lobelia niihauensis (ncn) *(Lobelia niihauensis)*	Endangered Terrestrial	Dicot	Yes
Lysimachia filifolia (ncn) *(Lysimachia filifolia)*	Endangered Terrestrial	Dicot	Yes
Mahoe (Alectryon macrococcus) *(Alectryon macrococcus)*	Endangered Terrestrial	Dicot	Yes
Makou (Peucedanum sandwicense) *(Peucedanum sandwicense)*	Threatened Terrestrial	Dicot	Yes
Ma'oli'oli (Schiedea apokremnos) *(Schiedea apokremnos)*	Endangered Terrestrial	Dicot	Yes
Mapele (Cyrtandra cyaneoides) *(Cyrtandra cyaneoides)*	Endangered Terrestrial	Dicot	Yes
Mehamehame (Flueggea neowawraea) *(Flueggea neowawraea)*	Endangered Terrestrial	Dicot	Yes
Munroidendron racemosum (ncn) *(Munroidendron racemosum)*	Endangered Terrestrial	Dicot	Yes
Nani Wai'ale'ale (Viola kauaensis var. wahiawaensis) *(Viola kauaiensis var. wahiawaensis)*	Endangered Terrestrial	Dicot	Yes
Nehe (Lipochaeta fauriei) *(Lipochaeta fauriei)*	Endangered Terrestrial	Dicot	Yes
Nehe (Lipochaeta micrantha) *(Lipochaeta micrantha)*	Endangered Terrestrial	Dicot	Yes
Nehe (Lipochaeta waimeaensis) *(Lipochaeta waimeaensis)*	Endangered Terrestrial	Dicot	Yes
'Oha (Delissea rivularis) *(Delissea rivularis)*	Endangered Terrestrial	Dicot	Yes
'Ohai (Sesbania tomentosa) *(Sesbania tomentosa)*	Endangered Terrestrial	Dicot	Yes
'Olulu (Brighamia insignis) *(Brighamia insignis)*	Endangered Terrestrial	Dicot	Yes

Hawaii (108) species:

		Taxa	Critical Habitat
Phyllostegia knudsenii (ncn) *(Phyllostegia knudsenii)*	Endangered	Dicot Terrestrial	Yes
Phyllostegia waimeae (ncn) *(Phyllostegia waimeae)*	Endangered	Dicot Terrestrial	Yes
Phyllostegia wawrana (ncn) *(Phyllostegia wawrana)*	Endangered	Dicot Terrestrial	Yes
Popolo 'Aiakeakua (Solanum sandwicense) *(Solanum sandwicense)*	Endangered	Dicot Terrestrial	Yes
Remya kauaiensis (ncn) *(Remya kauaiensis)*	Endangered	Dicot Terrestrial	Yes
Remya montgomeryi (ncn) *(Remya montgomeryi)*	Endangered	Dicot Terrestrial	Yes
Schiedea helleri (ncn) *(Schiedea helleri)*	Endangered	Dicot Terrestrial	Yes
Schiedea kauaiensis (ncn) *(Schiedea kauaiensis)*	Endangered	Dicot Terrestrial	Yes
Schiedea membranacea (ncn) *(Schiedea membranacea)*	Endangered	Dicot Terrestrial	Yes
Schiedea nuttallii (ncn) *(Schiedea nuttallii)*	Endangered	Dicot Terrestrial	Yes
Schiedea spergulina var. leiopoda (ncn) *(Schiedea spergulina var. leiopoda)*	Endangered	Dicot Terrestrial	Yes
Schiedea spergulina var. spergulina (ncn) *(Schiedea spergulina var. spergulina)*	Threatened	Dicot Terrestrial	Yes
Silene lanceolata (ncn) *(Silene lanceolata)*	Endangered	Dicot Terrestrial	Yes
Spermolepis hawaiiensis (ncn) *(Spermolepis hawaiiensis)*	Endangered	Dicot Terrestrial	Yes
Stenogyne campanulata (ncn) *(Stenogyne campanulata)*	Endangered	Dicot Terrestrial	Yes
Vigna o-wahuensis (ncn) *(Vigna o-wahuensis)*	Endangered	Dicot Terrestrial	Yes
Viola helenae (ncn) *(Viola helenae)*	Endangered	Dicot Terrestrial	Yes
Xylosma crenatum (ncn) *(Xylosma crenatum)*	Endangered	Dicot Terrestrial	Yes
Diellia pallida (ncn) *(Diellia pallida)*	Endangered	Ferns Terrestrial	Yes
Fern, Pendant Kihi (Adenophorus periens) *(Adenophorus periens)*	Endangered	Ferns Terrestrial	Yes
Snail, Newcomb's *(Erinna newcombi)*	Threatened	Gastropod Freshwater	Yes

Hawaii (108) species:

		Taxa	Critical Habitat
Bat, Hawaiian Hoary *(Lasiurus cinereus semotus)*	Endangered	Mammal Terrestrial, Subterraneous	No
Seal, Hawaiian Monk *(Monachus schauinslandi)*	Endangered	Marine mml Coastal (neritic), Saltwater	Yes
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml Saltwater	No
Bluegrass, Hawaiian *(Poa sandvicensis)*	Endangered	Monocot Terrestrial	Yes
Bluegrass, Mann's (Poa mannii) *(Poa mannii)*	Endangered	Monocot Terrestrial	Yes
Hilo Ischaemum (Ischaemum byrone) *(Ischaemum byrone)*	Endangered	Monocot Terrestrial	Yes
Lau'ehu (Panicum niihauense) *(Panicum niihauense)*	Endangered	Monocot Terrestrial	Yes
Lo`ulu (Pritchardia napaliensis) *(Pritchardia napaliensis)*	Endangered	Monocot Terrestrial	No
Lo`ulu (Pritchardia viscosa) *(Pritchardia viscosa)*	Endangered	Monocot Terrestrial	No
Mariscus pennatiformis (ncn) *(Mariscus pennatiformis)*	Endangered	Monocot Terrestrial	Yes
Platanthera holochila (ncn) *(Platanthera holochila)*	Endangered	Monocot Terrestrial	Yes
Poa siphonoglossa (ncn) *(Poa siphonoglossa)*	Endangered	Monocot Terrestrial	Yes
Pu'uka'a (Cyperus trachysanthos) *(Cyperus trachysanthos)*	Endangered	Monocot Terrestrial	Yes
Wahane (Pritchardia aylmer-robinsonii) *(Pritchardia aylmer-robinsonii)*	Endangered	Monocot Terrestrial	No
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile Saltwater	No
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile Saltwater	Yes
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile Saltwater	Yes
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile Saltwater	No

Idaho (9) species:

		Taxa	Critical Habitat
Trout, Bull *(Salvelinus confluentus)*	Threatened	Fish Freshwater	No
Trout, Bull (Columbia River population) *(Salvelinus confluentus)*	Threatened	Fish Freshwater	Yes
Trout, Bull (Klamath River population) *(Salvelinus confluentus)*	Threatened	Fish Freshwater	Yes

Idaho (9) species:

		Taxa	Critical Habitat
Limpet, Banbury Springs *(Lanx sp.)*	Endangered	Gastropod Freshwater	No
Snail, Bliss Rapids *(Taylorconcha serpenticola)*	Threatened	Gastropod Freshwater	No
Snail, Snake River Physa *(Physa natricina)*	Endangered	Gastropod Terrestrial	No
Snail, Utah Valvata *(Valvata utahensis)*	Endangered	Gastropod Terrestrial	No
Springsnail, Bruneau Hot *(Pyrgulopsis bruneauensis)*	Endangered	Gastropod Freshwater	No
Springsnail, Idaho *(Fontelicella idahoensis)*	Endangered	Gastropod Freshwater	No

Illinois (25) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird Terrestrial	No
Fanshell *(Cyprogenia stegaria)*	Endangered	Bivalve Freshwater	No
Mucket, Pink (Pearlymussel) *(Lampsilis abrupta)*	Endangered	Bivalve Freshwater	No
Mussel, Clubshell *(Pleurobema clava)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Fat Pocketbook *(Potamilus capax)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Higgins' Eye *(Lampsilis higginsii)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Orange-footed *(Plethobasus cooperianus)*	Endangered	Bivalve Freshwater	No
Pearlymussel, White Wartyback *(Plethobasus cicatricosus)*	Endangered	Bivalve Freshwater	No
Amphipod, Illinois Cave *(Gammarus acherondytes)*	Endangered	Crustacean Subterraneous, Freshwater	No
Aster, Decurrent False *(Boltonia decurrens)*	Threatened	Dicot Terrestrial, Freshwater	No
Clover, Leafy Prairie *(Dalea foliosa)*	Endangered	Dicot Terrestrial	No
Clover, Prairie Bush *(Lespedeza leptostachya)*	Threatened	Dicot Terrestrial	No
Daisy, Lakeside *(Hymenoxys herbacea)*	Threatened	Dicot Freshwater	No
Milkweed, Mead's *(Asclepias meadii)*	Threatened	Dicot Terrestrial	No

Illinois (25) species:

	Taxa	Critical Habitat
Potato-bean, Price's *(Apios priceana)*	Threatened	Dicot	No
	Terrestrial		
Thistle, Pitcher's *(Cirsium pitcheri)*	Threatened	Dicot	No
	Terrestrial		
Sturgeon, Pallid *(Scaphirhynchus albus)*	Endangered	Fish	No
	Freshwater		
Snail, Iowa Pleistocene *(Discus macclintocki)*	Endangered	Gastropod	No
	Terrestrial		
Butterfly, Karner Blue *(Lycaeides melissa samuelis)*	Endangered	Insect	No
	Terrestrial		
Dragonfly, Hine's Emerald *(Somatochlora hineana)*	Endangered	Insect	No
	Freshwater, Terrestrial		
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal	No
	Subterraneous, Terrestrial		
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal	Yes
	Subterraneous, Terrestrial		
Orchid, Eastern Prairie Fringed *(Platanthera leucophaea)*	Threatened	Monocot	No
	Terrestrial		
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot	No
	Terrestrial		

Indiana (23) species:

	Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird	Yes
	Terrestrial		
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird	No
	Terrestrial		
Fanshell *(Cyprogenia stegaria)*	Endangered	Bivalve	No
	Freshwater		
Mucket, Pink (Pearlymussel) *(Lampsilis abrupta)*	Endangered	Bivalve	No
	Freshwater		
Mussel, Clubshell *(Pleurobema clava)*	Endangered	Bivalve	No
	Freshwater		
Mussel, Ring Pink (=Golf Stick Pearly) *(Obovaria retusa)*	Endangered	Bivalve	No
	Freshwater		
Mussel, Rough Pigtoe *(Pleurobema plenum)*	Endangered	Bivalve	No
	Freshwater		
Pearlymussel, Fat Pocketbook *(Potamilus capax)*	Endangered	Bivalve	No
	Freshwater		
Pearlymussel, Orange-footed *(Plethobasus cooperianus)*	Endangered	Bivalve	No
	Freshwater		
Pearlymussel, Tubercled-blossom *(Epioblasma torulosa torulosa)*	Endangered	Bivalve	No
	Freshwater		
Pearlymussel, White Cat's Paw *(Epioblasma obliquata perobliqua)*	Endangered	Bivalve	No
	Freshwater		

Indiana (23) species:

		Taxa	Critical Habitat
Pearlymussel, White Wartyback *(Plethobasus cicatricosus)*	Endangered	Bivalve Freshwater	No
Riffleshell, Northern *(Epioblasma torulosa rangiana)*	Endangered	Bivalve Freshwater	No
Clover, Running Buffalo *(Trifolium stoloniferum)*	Endangered	Dicot Terrestrial	No
Goldenrod, Short's *(Solidago shortii)*	Endangered	Dicot Terrestrial	No
Milkweed, Mead's *(Asclepias meadii)*	Threatened	Dicot Terrestrial	No
Thistle, Pitcher's *(Cirsium pitcheri)*	Threatened	Dicot Terrestrial	No
Butterfly, Karner Blue *(Lycaeides melissa samuelis)*	Endangered	Insect Terrestrial	No
Butterfly, Mitchell's Satyr *(Neonympha mitchellii mitchellii)*	Endangered	Insect Terrestrial	No
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal Subterraneous, Terrestrial	No
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal Subterraneous, Terrestrial	Yes
Orchid, Eastern Prairie Fringed *(Platanthera leucophaea)*	Threatened	Monocot Terrestrial	No
Snake, Northern Copperbelly Water *(Nerodia erythrogaster neglecta)*	Threatened	Reptile Freshwater, Terrestrial	No

Iowa (14) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird Terrestrial	No
Pearlymussel, Fat Pocketbook *(Potamilus capax)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Higgins' Eye *(Lampsilis higginsii)*	Endangered	Bivalve Freshwater	No
Clover, Prairie Bush *(Lespedeza leptostachya)*	Threatened	Dicot Terrestrial	No
Milkweed, Mead's *(Asclepias meadii)*	Threatened	Dicot Terrestrial	No
Monkshood, Northern Wild *(Aconitum noveboracense)*	Threatened	Dicot Terrestrial	No
Fern, American hart's-tongue *(Asplenium scolopendrium var. americanum)*	Threatened	Ferns Terrestrial	No
Shiner, Topeka *(Notropis topeka (=tristis))*	Endangered	Fish Freshwater	Yes

Iowa (14) species:

	Taxa	Critical Habitat
Sturgeon, Pallid *(Scaphirhynchus albus)*	Endangered	Fish	No
		Freshwater	
Snail, Iowa Pleistocene *(Discus macclintocki)*	Endangered	Gastropod	No
		Terrestrial	
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal	Yes
		Subterraneous, Terrestrial	
Orchid, Eastern Prairie Fringed *(Platanthera leucophaea)*	Threatened	Monocot	No
		Terrestrial	
Orchid, Western Prairie Fringed *(Platanthera praeclara)*	Threatened	Monocot	No
		Terrestrial	

Kansas (12) species:

	Taxa	Critical Habitat
Crane, Whooping *(Grus americana)*	Endangered	Bird	Yes
		Terrestrial, Freshwater	
Plover, Piping *(Charadrius melodus)*	Endangered	Bird	Yes
		Terrestrial	
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird	No
		Terrestrial	
Milkweed, Mead's *(Asclepias meadii)*	Threatened	Dicot	No
		Terrestrial	
Madtom, Neosho *(Noturus placidus)*	Threatened	Fish	No
		Freshwater	
Shiner, Arkansas River *(Notropis girardi)*	Threatened	Fish	Yes
		Freshwater	
Shiner, Topeka *(Notropis topeka (=tristis))*	Endangered	Fish	Yes
		Freshwater	
Sturgeon, Pallid *(Scaphirhynchus albus)*	Endangered	Fish	No
		Freshwater	
Beetle, American Burying *(Nicrophorus americanus)*	Endangered	Insect	No
		Terrestrial	
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal	No
		Subterraneous, Terrestrial	
Ferret, Black-footed *(Mustela nigripes)*	Endangered	Mammal	No
		Terrestrial	
Orchid, Western Prairie Fringed *(Platanthera praeclara)*	Threatened	Monocot	No
		Terrestrial	

Kentucky (48) species:

	Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird	Yes
		Terrestrial	
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird	No
		Terrestrial	
Warbler (=Wood), Kirtland's *(Dendroica kirtlandii)*	Endangered	Bird	No
		Terrestrial	

Kentucky (48) species:

		Taxa	Critical Habitat
Warbler, Bachman's *(Vermivora bachmanii)*	Endangered	Bird Terrestrial	No
Woodpecker, Ivory-billed *(Campephilus principalis)*	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered	Bird Terrestrial	No
Fanshell *(Cyprogenia stegaria)*	Endangered	Bivalve Freshwater	No
Mucket, Pink (Pearlymussel) *(Lampsilis abrupta)*	Endangered	Bivalve Freshwater	No
Mussel, Clubshell *(Pleurobema clava)*	Endangered	Bivalve Freshwater	No
Mussel, Cumberland Combshell *(Epioblasma brevidens)*	Endangered	Bivalve Freshwater	Yes
Mussel, Cumberland Elktoe *(Alasmidonta atropurpurea)*	Endangered	Bivalve Freshwater	Yes
Mussel, Oyster *(Epioblasma capsaeformis)*	Endangered	Bivalve Freshwater	Yes
Mussel, Ring Pink (=Golf Stick Pearly) *(Obovaria retusa)*	Endangered	Bivalve Freshwater	No
Mussel, Rough Pigtoe *(Pleurobema plenum)*	Endangered	Bivalve Freshwater	No
Mussel, Winged Mapleleaf *(Quadrula fragosa)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Appalachian Monkeyface *(Quadrula sparsa)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Cracking *(Hemistena lata)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Cumberland Bean *(Villosa trabalis)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Dromedary *(Dromus dromas)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Fat Pocketbook *(Potamilus capax)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Little-wing *(Pegias fabula)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Orange-footed *(Plethobasus cooperianus)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Purple Cat's Paw *(Epioblasma obliquata obliquata)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Tubercled-blossom *(Epioblasma torulosa torulosa)*	Endangered	Bivalve Freshwater	No

Kentucky (48) species:

		Taxa	Critical Habitat
Pearlymussel, White Wartyback *(Plethobasus cicatricosus)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Yellow-blossom *(Epioblasma florentina florentina)*	Endangered	Bivalve Freshwater	No
Riffleshell, Northern *(Epioblasma torulosa rangiana)*	Endangered	Bivalve Freshwater	No
Riffleshell, Tan *(Epioblasma florentina walkeri (=E. walkeri))*	Endangered	Bivalve Freshwater	No
Shrimp, Kentucky Cave *(Palaemonias ganteri)*	Endangered	Crustacean Freshwater	Yes
Chaffseed, American *(Schwalbea americana)*	Endangered	Dicot Terrestrial	No
Clover, Running Buffalo *(Trifolium stoloniferum)*	Endangered	Dicot Terrestrial	No
Goldenrod, Short's *(Solidago shortii)*	Endangered	Dicot Terrestrial	No
Goldenrod, White-haired *(Solidago albopilosa)*	Threatened	Dicot Terrestrial	No
Potato-bean, Price's *(Apios priceana)*	Threatened	Dicot Terrestrial	No
Rock-cress, Large (=Braun's) *(Arabis perstellata E. L. Braun var. ampla Rollins)*	Endangered	Dicot Terrestrial	Yes
Rock-cress, Small *(Arabis perstellata E. L. Braun var. perstellata Fernald)*	Endangered	Dicot Terrestrial	Yes
Rosemary, Cumberland *(Conradina verticillata)*	Threatened	Dicot Terrestrial	No
Sandwort, Cumberland *(Arenaria cumberlandensis)*	Endangered	Dicot Terrestrial	No
Spiraea, Virginia *(Spiraea virginiana)*	Threatened	Dicot Terrestrial	No
Dace, Blackside *(Phoxinus cumberlandensis)*	Threatened	Fish Freshwater	No
Darter, Bluemask (=jewel) *(Etheostoma /)*	Endangered	Fish Freshwater	No
Darter, Relict *(Etheostoma chienense)*	Endangered	Fish Freshwater	No
Shiner, Palezone *(Notropis albizonatus)*	Endangered	Fish Freshwater	No
Sturgeon, Pallid *(Scaphirhynchus albus)*	Endangered	Fish Freshwater	No
Beetle, American Burying *(Nicrophorus americanus)*	Endangered	Insect Terrestrial	No

Kentucky (48) species:

		Taxa	Critical Habitat
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal Subterraneous, Terrestrial	No
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal Subterraneous, Terrestrial	Yes
Bat, Virginia Big-eared *(Corynorhinus (=Plecotus) townsendii virginianus)*	Endangered	Mammal Terrestrial, Subterraneous	Yes

Louisiana (22) species:

		Taxa	Critical Habitat
Pelican, Brown *(Pelecanus occidentalis)*	Endangered	Bird Terrestrial	No
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Tern, California Least *(Sterna antillarum browni)*	Endangered	Bird Terrestrial	No
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered	Bird Terrestrial	No
Mucket, Pink (Pearlymussel) *(Lampsilis abrupta)*	Endangered	Bivalve Freshwater	No
Mussel, Heelsplitter Inflated *(Potamilus inflatus)*	Threatened	Bivalve Freshwater	No
Pearlshell, Louisiana *(Margaritifera hembeli)*	Threatened	Bivalve Freshwater	No
Chaffseed, American *(Schwalbea americana)*	Endangered	Dicot Terrestrial	No
Fruit, Earth (=geocarpon) *(Geocarpon minimum)*	Threatened	Dicot Terrestrial	No
Sturgeon, Gulf *(Acipenser oxyrinchus desotoi)*	Threatened	Fish Saltwater, Freshwater	Yes
Sturgeon, Pallid *(Scaphirhynchus albus)*	Endangered	Fish Freshwater	No
Bear, Louisiana Black *(Ursus americanus luteolus)*	Threatened	Mammal Terrestrial	No
Manatee, West Indian *(Trichechus manatus)*	Endangered	Marine mml Saltwater	Yes
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml Saltwater	No
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml Saltwater	No
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile Saltwater	No
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile Saltwater	Yes

Louisiana (22) species:

		Taxa	Critical Habitat
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile	No
	Saltwater		
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile	Yes
	Saltwater		
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile	No
	Saltwater		
Tortoise, Gopher *(Gopherus polyphemus)*	Threatened	Reptile	No
	Terrestrial		

Maine (11) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird	Yes
	Terrestrial		
Tern, Roseate *(Sterna dougallii dougallii)*	Endangered	Bird	No
	Terrestrial		
Lousewort, Furbish *(Pedicularis furbishiae)*	Endangered	Dicot	No
	Terrestrial		
Salmon, Atlantic *(Salmo salar)*	Endangered	Fish	No
	Brackish, Saltwater, Freshwater		
Lynx, Canada *(Lynx canadensis)*	Threatened	Mammal	No
	Terrestrial		
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml	No
	Saltwater		
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml	No
	Saltwater		
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml	Yes
	Saltwater		
Orchid, Eastern Prairie Fringed *(Platanthera leucophaea)*	Threatened	Monocot	No
	Terrestrial		
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot	No
	Terrestrial		
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile	Yes
	Saltwater		

Maryland (22) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird	Yes
	Terrestrial		
Mussel, Dwarf Wedge *(Alasmidonta heterodon)*	Endangered	Bivalve	No
	Freshwater		
Dropwort, Canby's *(Oxypolis canbyi)*	Endangered	Dicot	No
	Terrestrial, Freshwater		
Gerardia, Sandplain *(Agalinis acuta)*	Endangered	Dicot	No
	Terrestrial		
Harperella *(Ptilimnium nodosum)*	Endangered	Dicot	No
	Freshwater		

Maryland (22) species:

		Taxa	Critical Habitat
Joint-vetch, Sensitive *(Aeschynomene virginica)*	Threatened	Dicot	No
		Terrestrial, Brackish	
Darter, Maryland *(Etheostoma sellare)*	Endangered	Fish	Yes
		Freshwater	
Sturgeon, Shortnose *(Acipenser brevirostrum)*	Endangered	Fish	No
		Saltwater, Freshwater	
Beetle, Northeastern Beach Tiger *(Cicindela dorsalis dorsalis)*	Threatened	Insect	No
		Terrestrial	
Beetle, Puritan Tiger *(Cicindela puritana)*	Threatened	Insect	No
		Terrestrial, Coastal (neritic)	
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal	Yes
		Subterraneous, Terrestrial	
Squirrel, Delmarva Peninsula Fox *(Sciurus niger cinereus)*	Endangered	Mammal	No
		Terrestrial	
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml	No
		Saltwater	
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml	No
		Saltwater	
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml	Yes
		Saltwater	
Bulrush, Northeastern (=Barbed Bristle) *(Scirpus ancistrochaetus)*	Endangered	Monocot	No
		Terrestrial, Freshwater	
Pink, Swamp *(Helonias bullata)*	Threatened	Monocot	No
		Terrestrial, Freshwater	
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile	Yes
		Saltwater	
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile	No
		Saltwater	
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile	Yes
		Saltwater	
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile	No
		Saltwater	
Turtle, Bog (Northern population) *(Clemmys muhlenbergii)*	Threatened	Reptile	No
		Terrestrial, Freshwater	

Massachusetts (13) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird	Yes
		Terrestrial	
Starling, Ponape Mountain *(Aplonis pelzelni)*	Endangered	Bird	No
		Terrestrial	
Sturgeon, Shortnose *(Acipenser brevirostrum)*	Endangered	Fish	No
		Saltwater, Freshwater	
Beetle, Puritan Tiger *(Cicindela puritana)*	Threatened	Insect	No
		Terrestrial, Coastal (neritic)	

Massachusetts (13) species:

		Taxa	Critical Habitat
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal Subterraneous, Terrestrial	Yes
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml Saltwater	No
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml Saltwater	Yes
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot Terrestrial	No
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile Saltwater	Yes
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile Saltwater	No
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile Saltwater	Yes
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile Saltwater	No
Turtle, Bog (Northern population) *(Clemmys muhlenbergii)*	Threatened	Reptile Terrestrial, Freshwater	No

Michigan (18) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Warbler (=Wood), Kirtland's *(Dendroica kirtlandii)*	Endangered	Bird Terrestrial	No
Mussel, Clubshell *(Pleurobema clava)*	Endangered	Bivalve Freshwater	No
Riffleshell, Northern *(Epioblasma torulosa rangiana)*	Endangered	Bivalve Freshwater	No
Goldenrod, Houghton's *(Solidago houghtonii)*	Threatened	Dicot Terrestrial	No
Monkey-flower, Michigan *(Mimulus glabratus var. michiganensis)*	Endangered	Dicot Terrestrial, Freshwater	No
Thistle, Pitcher's *(Cirsium pitcheri)*	Threatened	Dicot Terrestrial	No
Beetle, Hungerford's Crawling Water *(Brychius hungerfordi)*	Endangered	Insect Freshwater	No
Butterfly, Karner Blue *(Lycaeides melissa samuelis)*	Endangered	Insect Terrestrial	No
Butterfly, Mitchell's Satyr *(Neonympha mitchellii mitchellii)*	Endangered	Insect Terrestrial	No
Dragonfly, Hine's Emerald *(Somatochlora hineana)*	Endangered	Insect Freshwater, Terrestrial	No
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal Subterraneous, Terrestrial	Yes

Michigan (18) species:

		Taxa	Critical Habitat
Lynx, Canada *(Lynx canadensis)*	Threatened	Mammal Terrestrial	No
Wolf, Gray *(Canis lupus)*	Endangered	Mammal Terrestrial	Yes
Iris, Dwarf Lake *(Iris lacustris)*	Threatened	Monocot Terrestrial	No
Orchid, Eastern Prairie Fringed *(Platanthera leucophaea)*	Threatened	Monocot Terrestrial	No
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot Terrestrial	No
Snake, Northern Copperbelly Water *(Nerodia erythrogaster neglecta)*	Threatened	Reptile Freshwater, Terrestrial	No

Minnesota (11) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Mussel, Winged Mapleleaf *(Quadrula fragosa)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Higgins' Eye *(Lampsilis higginsii)*	Endangered	Bivalve Freshwater	No
Clover, Prairie Bush *(Lespedeza leptostachya)*	Threatened	Dicot Terrestrial	No
Roseroot, Leedy's *(Sedum integrifolium ssp. leedyi)*	Threatened	Dicot Terrestrial	No
Shiner, Topeka *(Notropis topeka (=tristis))*	Endangered	Fish Freshwater	Yes
Butterfly, Karner Blue *(Lycaeides melissa samuelis)*	Endangered	Insect Terrestrial	No
Lynx, Canada *(Lynx canadensis)*	Threatened	Mammal Terrestrial	No
Wolf, Gray *(Canis lupus)*	Threatened	Mammal Terrestrial	Yes
Lily, Minnesota Trout *(Erythronium propullans)*	Endangered	Monocot Terrestrial	No
Orchid, Western Prairie Fringed *(Platanthera praeclara)*	Threatened	Monocot Terrestrial	No

Mississippi (34) species:

		Taxa	Critical Habitat
Crane, Mississippi Sandhill *(Grus canadensis pulla)*	Endangered	Bird Terrestrial, Freshwater	Yes
Pelican, Brown *(Pelecanus occidentalis)*	Endangered	Bird Terrestrial	No
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes

Mississippi (34) species:

	Taxa	Critical Habitat
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered Bird Terrestrial	No
Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered Bird Terrestrial	No
Combshell, Southern (=Penitent mussel) *(Epioblasma penita)*	Endangered Bivalve Freshwater	No
Mucket, Orangenacre *(Lampsilis perovalis)*	Threatened Bivalve Freshwater	Yes
Mussel, Alabama Moccasinshell *(Medionidus acutissimus)*	Threatened Bivalve Freshwater	Yes
Mussel, Black (=Curtus' Mussel) Clubshell *(Pleurobema curtum)*	Endangered Bivalve Freshwater	No
Mussel, Heavy Pigtoe (=Judge Tait's Mussel) *(Pleurobema taitianum)*	Endangered Bivalve Freshwater	No
Mussel, Heelsplitter Inflated *(Potamilus inflatus)*	Threatened Bivalve Freshwater	No
Mussel, Ovate Clubshell *(Pleurobema perovatum)*	Endangered Bivalve Freshwater	Yes
Mussel, Southern Clubshell *(Pleurobema decisum)*	Endangered Bivalve Freshwater	Yes
Pearlymussel, Fat Pocketbook *(Potamilus capax)*	Endangered Bivalve Freshwater	No
Pondberry *(Lindera melissifolia)*	Endangered Dicot Terrestrial	No
Potato-bean, Price's *(Apios priceana)*	Threatened Dicot Terrestrial	No
Quillwort, Louisiana *(Isoetes louisianensis)*	Endangered Ferns Freshwater, Terrestrial	No
Darter, Bayou *(Etheostoma rubrum)*	Threatened Fish Freshwater	No
Sturgeon, Gulf *(Acipenser oxyrinchus desotoi)*	Threatened Fish Saltwater, Freshwater	Yes
Sturgeon, Pallid *(Scaphirhynchus albus)*	Endangered Fish Freshwater	No
Bat, Gray *(Myotis grisescens)*	Endangered Mammal Subterraneous, Terrestrial	No
Bat, Indiana *(Myotis sodalis)*	Endangered Mammal Subterraneous, Terrestrial	Yes
Bear, Louisiana Black *(Ursus americanus luteolus)*	Threatened Mammal Terrestrial	No
Whale, Finback *(Balaenoptera physalus)*	Endangered Marine mml Saltwater	No

Mississippi (34) species:

		Taxa	Critical Habitat
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml Saltwater	No
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile Saltwater	No
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile Saltwater	Yes
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile Saltwater	No
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile Saltwater	Yes
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile Saltwater	No
Snake, Eastern Indigo *(Drymarchon corais couperi)*	Threatened	Reptile Terrestrial	No
Tortoise, Gopher *(Gopherus polyphemus)*	Threatened	Reptile Terrestrial	No
Turtle, Ringed Sawback *(Graptemys oculifera)*	Threatened	Reptile Freshwater, Terrestrial	No
Turtle, Yellow-blotched Map *(Graptemys flavimaculata)*	Threatened	Reptile Freshwater, Terrestrial	No

Missouri (29) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird Terrestrial	No
Mucket, Pink (Pearlymussel) *(Lampsilis abrupta)*	Endangered	Bivalve Freshwater	No
Mussel, Scaleshell *(Leptodea leptodon)*	Endangered	Bivalve Freshwater	No
Mussel, Winged Mapleleaf *(Quadrula fragosa)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Curtis' *(Epioblasma florentina curtisii)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Fat Pocketbook *(Potamilus capax)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Higgins' Eye *(Lampsilis higginsii)*	Endangered	Bivalve Freshwater	No
Crayfish, Cave (Cambarus aculabrum) *(Cambarus aculabrum)*	Endangered	Crustacean Freshwater	No
Aster, Decurrent False *(Boltonia decurrens)*	Threatened	Dicot Terrestrial, Freshwater	No
Bladderpod, Missouri *(Lesquerella filiformis)*	Threatened	Dicot Terrestrial	No

Missouri (29) species:

		Taxa	Critical Habitat
Clover, Running Buffalo *(Trifolium stoloniferum)*	Endangered	Dicot	No
		Terrestrial	
Fruit, Earth (=geocarpon) *(Geocarpon minimum)*	Threatened	Dicot	No
		Terrestrial	
Milkweed, Mead's *(Asclepias meadii)*	Threatened	Dicot	No
		Terrestrial	
Pondberry *(Lindera melissifolia)*	Endangered	Dicot	No
		Terrestrial	
Sneezeweed, Virginia *(Helenium virginicum)*	Threatened	Dicot	No
		Vernal pool	
Cavefish, Ozark *(Amblyopsis rosae)*	Threatened	Fish	No
		Freshwater	
Chub, Humpback *(Gila cypha)*	Endangered	Fish	Yes
		Freshwater	
Darter, Niangua *(Etheostoma nianguae)*	Threatened	Fish	Yes
		Freshwater	
Madtom, Neosho *(Noturus placidus)*	Threatened	Fish	No
		Freshwater	
Shiner, Topeka *(Notropis topeka (=tristis))*	Endangered	Fish	Yes
		Freshwater	
Sturgeon, Gulf *(Acipenser oxyrinchus desotoi)*	Threatened	Fish	Yes
		Saltwater, Freshwater	
Sturgeon, Pallid *(Scaphirhynchus albus)*	Endangered	Fish	No
		Freshwater	
Cavesnail, Tumbling Creek *(Antrobia culveri)*	Endangered	Gastropod	No
		Subterraneous, Freshwater	
Beetle, American Burying *(Nicrophorus americanus)*	Endangered	Insect	No
		Terrestrial	
Dragonfly, Hine's Emerald *(Somatochlora hineana)*	Endangered	Insect	No
		Freshwater, Terrestrial	
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal	No
		Subterraneous, Terrestrial	
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal	Yes
		Subterraneous, Terrestrial	
Orchid, Western Prairie Fringed *(Platanthera praeclara)*	Threatened	Monocot	No
		Terrestrial	

Montana (7) species:

		Taxa	Critical Habitat
Crane, Whooping *(Grus americana)*	Endangered	Bird	Yes
		Terrestrial, Freshwater	
Plover, Piping *(Charadrius melodus)*	Endangered	Bird	Yes
		Terrestrial	
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird	No
		Terrestrial	

Montana (7) species:

Sturgeon, Pallid
(Scaphirhynchus albus)
Bear, Grizzly
(Ursus arctos horribilis)
Ferret, Black-footed
(Mustela nigripes)
Wolf, Gray
(Canis lupus)

Nebraska (10) species:

Crane, Whooping
(Grus americana)
Plover, Piping
(Charadrius melodus)
Tern, Interior (population) Least
(Sterna antillarum)
Butterfly Plant, Colorado
(Gaura neomexicana var. coloradensis)
Penstemon, Blowout
(Penstemon haydenii)
Shiner, Topeka
(Notropis topeka (=tristis))
Sturgeon, Pallid
(Scaphirhynchus albus)
Beetle, Salt Creek Tiger
(Cicindela nevadica lincolniana)
Ferret, Black-footed
(Mustela nigripes)
Orchid, Western Prairie Fringed
(Platanthera praeclara)

New Hampshire (2) species:

Whale, Finback
(Balaenoptera physalus)
Sea turtle, leatherback
(Dermochelys coriacea)

New Jersey (17) species:

Curlew, Eskimo
(Numenius borealis)
Plover, Piping
(Charadrius melodus)
Chaffseed, American
(Schwalbea americana)

	Taxa	Critical Habitat
Endangered	Fish	No
	Freshwater	
Threatened	Mammal	No
	Terrestrial	
Endangered	Mammal	No
	Terrestrial	
Endangered	Mammal	Yes
	Terrestrial	

	Taxa	Critical Habitat
Endangered	Bird	Yes
	Terrestrial, Freshwater	
Endangered	Bird	Yes
	Terrestrial	
Endangered	Bird	No
	Terrestrial	
Threatened	Dicot	Yes
	Terrestrial	
Endangered	Dicot	No
	Terrestrial	
Endangered	Fish	Yes
	Freshwater	
Endangered	Fish	No
	Freshwater	
Endangered	Insect	No
	Terrestrial	
Endangered	Mammal	No
	Terrestrial	
Threatened	Monocot	No
	Terrestrial	

	Taxa	Critical Habitat
Endangered	Marine mml	No
	Saltwater	
Endangered	Reptile	Yes
	Saltwater	

	Taxa	Critical Habitat
Endangered	Bird	No
	Terrestrial	
Endangered	Bird	Yes
	Terrestrial	
Endangered	Dicot	No
	Terrestrial	

New Jersey (17) species:

		Taxa	Critical Habitat
Joint-vetch, Sensitive *(Aeschynomene virginica)*	Threatened	Dicot	No
		Terrestrial, Brackish	
Sturgeon, Shortnose *(Acipenser brevirostrum)*	Endangered	Fish	No
		Saltwater, Freshwater	
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal	Yes
		Subterraneous, Terrestrial	
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml	No
		Saltwater	
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml	No
		Saltwater	
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml	Yes
		Saltwater	
Beaked-rush, Knieskern's *(Rhynchospora knieskernii)*	Threatened	Monocot	No
		Terrestrial	
Pink, Swamp *(Helonias bullata)*	Threatened	Monocot	No
		Terrestrial, Freshwater	
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot	No
		Terrestrial	
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile	Yes
		Saltwater	
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile	No
		Saltwater	
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile	Yes
		Saltwater	
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile	No
		Saltwater	
Turtle, Bog (Northern population) *(Clemmys muhlenbergii)*	Threatened	Reptile	No
		Terrestrial, Freshwater	

New Mexico (2) species:

		Taxa	Critical Habitat
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird	No
		Terrestrial	
Ferret, Black-footed *(Mustela nigripes)*	Endangered	Mammal	No
		Terrestrial	

New York (22) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird	Yes
		Terrestrial	
Tern, Roseate *(Sterna dougallii dougallii)*	Endangered	Bird	No
		Terrestrial	
Mussel, Dwarf Wedge *(Alasmidonta heterodon)*	Endangered	Bivalve	No
		Freshwater	
Amaranth, Seabeach *(Amaranthus pumilus)*	Threatened	Dicot	No
		Coastal (neritic)	

New York (22) species:

		Taxa	Critical Habitat
Gerardia, Sandplain *(Agalinis acuta)*	Endangered	Dicot Terrestrial	No
Monkshood, Northern Wild *(Aconitum noveboracense)*	Threatened	Dicot Terrestrial	No
Roseroot, Leedy's *(Sedum integrifolium ssp. leedyi)*	Threatened	Dicot Terrestrial	No
Fern, American hart's-tongue *(Asplenium scolopendrium var. americanum)*	Threatened	Ferns Terrestrial	No
Sturgeon, Shortnose *(Acipenser brevirostrum)*	Endangered	Fish Saltwater, Freshwater	No
Snail, Chittenango Ovate Amber *(Succinea chittenangoensis)*	Threatened	Gastropod Terrestrial, Freshwater	No
Butterfly, Karner Blue *(Lycaeides melissa samuelis)*	Endangered	Insect Terrestrial	No
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal Subterraneous, Terrestrial	Yes
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml Saltwater	No
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml Saltwater	No
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml Saltwater	Yes
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot Terrestrial	No
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile Saltwater	No
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile Saltwater	Yes
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile Saltwater	No
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile Saltwater	Yes
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile Saltwater	No
Turtle, Bog (Northern population) *(Clemmys muhlenbergii)*	Threatened	Reptile Terrestrial, Freshwater	No

North Carolina (54) species:

		Taxa	Critical Habitat
Spider, Spruce-fir Moss *(Microhexura montivaga)*	Endangered	Arachnid Terrestrial	Yes
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Stork, Wood *(Mycteria americana)*	Endangered	Bird Terrestrial	No

North Carolina (54) species:

	Taxa	Critical Habitat
Tern, Roseate *(Sterna dougallii dougallii)*	Endangered	Bird	No
		Terrestrial	
Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered	Bird	No
		Terrestrial	
Elktoe, Appalachian *(Alasmidonta raveneliana)*	Endangered	Bivalve	Yes
		Freshwater	
Mussel, Dwarf Wedge *(Alasmidonta heterodon)*	Endangered	Bivalve	No
		Freshwater	
Mussel, Heelsplitter Carolina *(Lasmigona decorata)*	Endangered	Bivalve	Yes
		Freshwater	
Mussel, Oyster *(Epioblasma capsaeformis)*	Endangered	Bivalve	Yes
		Freshwater	
Pearlymussel, Little-wing *(Pegias fabula)*	Endangered	Bivalve	No
		Freshwater	
Purple Bean *(Villosa perpurpurea)*	Endangered	Bivalve	Yes
		Freshwater	
Spinymussel, James River *(Pleurobema collina)*	Endangered	Bivalve	No
		Freshwater	
Spinymussel, Tar River *(Elliptio steinstansana)*	Endangered	Bivalve	No
		Freshwater	
Amaranth, Seabeach *(Amaranthus pumilus)*	Threatened	Dicot	No
		Coastal (neritic)	
Avens, Spreading *(Geum radiatum)*	Endangered	Dicot	No
		Terrestrial	
Bittercress, Small-anthered *(Cardamine micranthera)*	Endangered	Dicot	No
		Terrestrial	
Blazing Star, Heller's *(Liatris helleri)*	Threatened	Dicot	No
		Terrestrial	
Chaffseed, American *(Schwalbea americana)*	Endangered	Dicot	No
		Terrestrial	
Coneflower, Smooth *(Echinacea laevigata)*	Endangered	Dicot	No
		Terrestrial	
Dropwort, Canby's *(Oxypolis canbyi)*	Endangered	Dicot	No
		Terrestrial, Freshwater	
Goldenrod, Blue Ridge *(Solidago spithamaea)*	Threatened	Dicot	No
		Terrestrial	
Harperella *(Ptilimnium nodosum)*	Endangered	Dicot	No
		Freshwater	
Heartleaf, Dwarf-flowered *(Hexastylis naniflora)*	Threatened	Dicot	No
		Terrestrial	
Heather, Mountain Golden *(Hudsonia montana)*	Threatened	Dicot	Yes
		Terrestrial	

North Carolina (54) species:

		Taxa	Critical Habitat
Joint-vetch, Sensitive *(Aeschynomene virginica)*	Threatened	Dicot Terrestrial, Brackish	No
Loosestrife, Rough-leaved *(Lysimachia asperulaefolia)*	Endangered	Dicot Terrestrial	No
Meadowrue, Cooley's *(Thalictrum cooleyi)*	Endangered	Dicot Terrestrial	No
Pitcher-plant, Green *(Sarracenia oreophila)*	Endangered	Dicot Terrestrial, Freshwater	No
Pitcher-plant, Mountain Sweet *(Sarracenia rubra ssp. jonesii)*	Endangered	Dicot Freshwater, Terrestrial	No
Pondberry *(Lindera melissifolia)*	Endangered	Dicot Terrestrial	No
Spiraea, Virginia *(Spiraea virginiana)*	Threatened	Dicot Terrestrial	No
Sumac, Michaux's *(Rhus michauxii)*	Endangered	Dicot Terrestrial	No
Sunflower, Schweinitz's *(Helianthus schweinitzii)*	Endangered	Dicot Terrestrial	No
Shiner, Cape Fear *(Notropis mekistocholas)*	Endangered	Fish Freshwater	Yes
Silverside, Waccamaw *(Menidia extensa)*	Threatened	Fish Freshwater	Yes
Sturgeon, Shortnose *(Acipenser brevirostrum)*	Endangered	Fish Saltwater, Freshwater	No
Butterfly, Saint Francis' Satyr *(Neonympha mitchellii francisci)*	Endangered	Insect Terrestrial	No
Lichen, Rock Gnome *(Gymnoderma lineare)*	Endangered	Lichen Terrestrial	No
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal Subterraneous, Terrestrial	Yes
Squirrel, Carolina Northern Flying *(Glaucomys sabrinus coloratus)*	Endangered	Mammal Terrestrial	No
Manatee, West Indian *(Trichechus manatus)*	Endangered	Marine mml Saltwater	Yes
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml Saltwater	No
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml Saltwater	No
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml Saltwater	Yes
Arrowhead, Bunched *(Sagittaria fasciculata)*	Endangered	Monocot Freshwater	No

North Carolina (54) species:

		Taxa	Critical Habitat
Irisette, White	Endangered	Monocot	No
(Sisyrinchium dichotomum)		Terrestrial	
Pink, Swamp	Threatened	Monocot	No
(Helonias bullata)		Terrestrial, Freshwater	
Pogonia, Small Whorled	Threatened	Monocot	No
(Isotria medeoloides)		Terrestrial	
Sedge, Golden	Endangered	Monocot	No
(Carex lutea)		Terrestrial	
Sea turtle, green	Endangered	Reptile	No
(Chelonia mydas)		Saltwater	
Sea turtle, hawksbill	Endangered	Reptile	Yes
(Eretmochelys imbricata)		Saltwater	
Sea turtle, Kemp's ridley	Endangered	Reptile	No
(Lepidochelys kempii)		Saltwater	
Sea turtle, leatherback	Endangered	Reptile	Yes
(Dermochelys coriacea)		Saltwater	
Sea turtle, loggerhead	Threatened	Reptile	No
(Caretta caretta)		Saltwater	

North Dakota (5) species:

		Taxa	Critical Habitat
Crane, Whooping	Endangered	Bird	Yes
(Grus americana)		Terrestrial, Freshwater	
Plover, Piping	Endangered	Bird	Yes
(Charadrius melodus)		Terrestrial	
Tern, Interior (population) Least	Endangered	Bird	No
(Sterna antillarum)		Terrestrial	
Sturgeon, Pallid	Endangered	Fish	No
(Scaphirhynchus albus)		Freshwater	
Orchid, Western Prairie Fringed	Threatened	Monocot	No
(Platanthera praeclara)		Terrestrial	

Ohio (22) species:

		Taxa	Critical Habitat
Plover, Piping	Endangered	Bird	Yes
(Charadrius melodus)		Terrestrial	
Fanshell	Endangered	Bivalve	No
(Cyprogenia stegaria)		Freshwater	
Mucket, Pink (Pearlymussel)	Endangered	Bivalve	No
(Lampsilis abrupta)		Freshwater	
Mussel, Clubshell	Endangered	Bivalve	No
(Pleurobema clava)		Freshwater	
Pearlymussel, Purple Cat's Paw	Endangered	Bivalve	No
(Epioblasma obliquata obliquata)		Freshwater	
Pearlymussel, White Cat's Paw	Endangered	Bivalve	No
(Epioblasma obliquata perobliqua)		Freshwater	

Ohio (22) species:

		Taxa	Critical Habitat
Riffleshell, Northern *(Epioblasma torulosa rangiana)*	Endangered	Bivalve Freshwater	No
Clover, Running Buffalo *(Trifolium stoloniferum)*	Endangered	Dicot Terrestrial	No
Daisy, Lakeside *(Hymenoxys herbacea)*	Threatened	Dicot Freshwater	No
Monkshood, Northern Wild *(Aconitum noveboracense)*	Threatened	Dicot Terrestrial	No
Spiraea, Virginia *(Spiraea virginiana)*	Threatened	Dicot Terrestrial	No
Madtom, Scioto *(Noturus trautmani)*	Endangered	Fish Freshwater	No
Beetle, American Burying *(Nicrophorus americanus)*	Endangered	Insect Terrestrial	No
Butterfly, Karner Blue *(Lycaeides melissa samuelis)*	Endangered	Insect Terrestrial	No
Butterfly, Mitchell's Satyr *(Neonympha mitchellii mitchellii)*	Endangered	Insect Terrestrial	No
Dragonfly, Hine's Emerald *(Somatochlora hineana)*	Endangered	Insect Freshwater, Terrestrial	No
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal Subterraneous, Terrestrial	No
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal Subterraneous, Terrestrial	Yes
Orchid, Eastern Prairie Fringed *(Platanthera leucophaea)*	Threatened	Monocot Terrestrial	No
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot Terrestrial	No
Snake, Lake Erie Water *(Nerodia sipedon insularum)*	Threatened	Reptile Terrestrial, Freshwater	No
Snake, Northern Copperbelly Water *(Nerodia erythrogaster neglecta)*	Threatened	Reptile Freshwater, Terrestrial	No

Oklahoma (18) species:

		Taxa	Critical Habitat
Crane, Whooping *(Grus americana)*	Endangered	Bird Terrestrial, Freshwater	Yes
Curlew, Eskimo *(Numenius borealis)*	Endangered	Bird Terrestrial	No
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird Terrestrial	No
Vireo, Black-capped *(Vireo atricapilla)*	Endangered	Bird Terrestrial	No

Oklahoma (18) species:

		Taxa	Critical Habitat
Woodpecker, Red-cockaded	Endangered	Bird	No
(Picoides borealis)		Terrestrial	
Mussel, Scaleshell	Endangered	Bivalve	No
(Leptodea leptodon)		Freshwater	
Rock-pocketbook, Ouachita (=Wheeler's pm)	Endangered	Bivalve	No
(Arkansia wheeleri)		Freshwater	
Cavefish, Ozark	Threatened	Fish	No
(Amblyopsis rosae)		Freshwater	
Darter, Leopard	Threatened	Fish	Yes
(Percina pantherina)		Freshwater	
Madtom, Neosho	Threatened	Fish	No
(Noturus placidus)		Freshwater	
Shiner, Arkansas River	Threatened	Fish	Yes
(Notropis girardi)		Freshwater	
Beetle, American Burying	Endangered	Insect	No
(Nicrophorus americanus)		Terrestrial	
Bat, Gray	Endangered	Mammal	No
(Myotis grisescens)		Subterraneous, Terrestrial	
Bat, Indiana	Endangered	Mammal	Yes
(Myotis sodalis)		Subterraneous, Terrestrial	
Bat, Ozark Big-eared	Endangered	Mammal	No
(Corynorhinus (=Plecotus) townsendii ingens)		Terrestrial, Subterraneous	
Orchid, Eastern Prairie Fringed	Threatened	Monocot	No
(Platanthera leucophaea)		Terrestrial	
Orchid, Western Prairie Fringed	Threatened	Monocot	No
(Platanthera praeclara)		Terrestrial	

Oregon (39) species:

		Taxa	Critical Habitat
Murrelet, Marbled	Threatened	Bird	Yes
(Brachyramphus marmoratus marmoratus)		Freshwater, Terrestrial, Saltwater	
Owl, Northern Spotted	Threatened	Bird	Yes
(Strix occidentalis caurina)		Terrestrial	
Pelican, Brown	Endangered	Bird	No
(Pelecanus occidentalis)		Terrestrial	
Plover, Western Snowy	Threatened	Bird	Yes
(Charadrius alexandrinus nivosus)		Terrestrial	
Fairy Shrimp, Vernal Pool	Threatened	Crustacean	Yes
(Branchinecta lynchi)		Vernal pool	
Checker-mallow, Nelson's	Threatened	Dicot	No
(Sidalcea nelsoniana)		Terrestrial	
Daisy, Willamette	Endangered	Dicot	No
(Erigeron decumbens var. decumbens)		Terrestrial	
Lomatium, Bradshaw's	Endangered	Dicot	No
(Lomatium bradshawii)		Terrestrial, Freshwater	

Oregon (39) species:

		Taxa	Critical Habitat
Lomatium, Cook's	Endangered	Dicot	No
(Lomatium cookii)		Vernal pool	
Lupine, Kincaid's	Threatened	Dicot	No
(Lupinus sulphureus (=oreganus) ssp. kincaidii (=var. kincaidii))		Terrestrial	
Meadowfoam, Large-flowered Woolly	Endangered	Dicot	No
(Limnanthes floccosa ssp. Grandiflora)		Vernal pool	
Popcornflower, Rough	Endangered	Dicot	No
(Plagiobothrys hirtus)		Vernal pool	
Thelypody, Howell's Spectacular	Threatened	Dicot	No
(Thelypodium howellii spectabilis)		Terrestrial	
Chub, Oregon	Endangered	Fish	No
(Oregonichthys crameri)		Freshwater	
Salmon, Chinook (Lower Columbia River)	Threatened	Fish	Yes
(Oncorhynchus (=Salmo) tshawytscha)		Freshwater, Brackish, Saltwater	
Salmon, Chinook (Snake River Fall Run)	Threatened	Fish	No
(Oncorhynchus (=Salmo) tshawytscha)		Freshwater, Saltwater, Brackish	
Salmon, Chinook (Snake River spring/summer)	Threatened	Fish	Yes
(Oncorhynchus (=Salmo) tshawytscha)		Brackish, Saltwater, Freshwater	
Salmon, Chinook (Upper Columbia River Spring)	Endangered	Fish	Yes
(Oncorhynchus (=Salmo) tshawytscha)		Freshwater, Saltwater, Brackish	
Salmon, Chinook (Upper Willamette River)	Threatened	Fish	Yes
(Oncorhynchus (=Salmo) tshawytscha)		Saltwater, Brackish, Freshwater	
Salmon, Chum (Columbia River population)	Threatened	Fish	Yes
(Oncorhynchus (=Salmo) keta)		Brackish, Freshwater, Saltwater	
Salmon, Coho (Southern OR/Northern CA Coast)	Threatened	Fish	Yes
(Oncorhynchus (=Salmo) kisutch)		Freshwater, Brackish, Saltwater	
Salmon, Sockeye (Snake River population)	Endangered	Fish	No
(Oncorhynchus (=Salmo) nerka)		Brackish, Saltwater, Freshwater	
Steelhead, (Lower Columbia River population)	Threatened	Fish	Yes
(Oncorhynchus (=Salmo) mykiss)		Brackish, Freshwater, Saltwater	
Steelhead, (Middle Columbia River population)	Threatened	Fish	Yes
(Oncorhynchus (=Salmo) mykiss)		Freshwater, Saltwater, Brackish	
Steelhead, (Snake River Basin population)	Threatened	Fish	Yes
(Oncorhynchus (=Salmo) mykiss)		Freshwater, Brackish, Saltwater	
Steelhead, (Upper Columbia River population)	Threatened	Fish	Yes
(Oncorhynchus (=Salmo) mykiss)		Brackish, Saltwater, Freshwater	
Steelhead, (Upper Willamette River population)	Threatened	Fish	Yes
(Oncorhynchus (=Salmo) mykiss)		Brackish, Saltwater, Freshwater	
Trout, Bull	Threatened	Fish	No
(Salvelinus confluentus)		Freshwater	
Trout, Bull (Columbia River population)	Threatened	Fish	Yes
(Salvelinus confluentus)		Freshwater	

Oregon (39) species:

		Taxa	Critical Habitat
Trout, Bull (Klamath River population) *(Salvelinus confluentus)*	Threatened	Fish Freshwater	Yes
Butterfly, Fender's Blue *(Icaricia icarioides fenderi)*	Endangered	Insect Terrestrial	No
Butterfly, Oregon Silverspot *(Speyeria zerene hippolyta)*	Threatened	Insect Terrestrial	Yes
Deer, Columbian White-tailed *(Odocoileus virginianus leucurus)*	Endangered	Mammal Terrestrial	No
Sea-lion, Steller (eastern) *(Eumetopias jubatus)*	Threatened	Marine mml Saltwater	Yes
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml Saltwater	No
Fritillary, Gentner's *(Fritillaria gentneri)*	Endangered	Monocot Terrestrial	No
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile Saltwater	No
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile Saltwater	Yes
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile Saltwater	No

Pennsylvania (8) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Mussel, Clubshell *(Pleurobema clava)*	Endangered	Bivalve Freshwater	No
Riffleshell, Northern *(Epioblasma torulosa rangiana)*	Endangered	Bivalve Freshwater	No
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal Subterraneous, Terrestrial	Yes
Squirrel, Delmarva Peninsula Fox *(Sciurus niger cinereus)*	Endangered	Mammal Terrestrial	No
Bulrush, Northeastern (=Barbed Bristle) *(Scirpus ancistrochaetus)*	Endangered	Monocot Terrestrial, Freshwater	No
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot Terrestrial	No
Turtle, Bog (Northern population) *(Clemmys muhlenbergii)*	Threatened	Reptile Terrestrial, Freshwater	No

Rhode Island (11) species:

		Taxa	Critical Habitat
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Gerardia, Sandplain *(Agalinis acuta)*	Endangered	Dicot Terrestrial	No

Rhode Island (11) species:

Sturgeon, Shortnose *(Acipenser brevirostrum)*	Endangered	Fish Saltwater, Freshwater	No
Beetle, American Burying *(Nicrophorus americanus)*	Endangered	Insect Terrestrial	No
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml Saltwater	No
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml Saltwater	No
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml Saltwater	Yes
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile Saltwater	Yes
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile Saltwater	No
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile Saltwater	Yes
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile Saltwater	No

South Carolina (37) species:

Salamander, Flatwoods *(Ambystoma cingulatum)*	Threatened	Amphibian Freshwater, Vernal pool, Terrestrial	No
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Stork, Wood *(Mycteria americana)*	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered	Bird Terrestrial	No
Mussel, Heelsplitter Carolina *(Lasmigona decorata)*	Endangered	Bivalve Freshwater	Yes
Amaranth, Seabeach *(Amaranthus pumilus)*	Threatened	Dicot Coastal (neritic)	No
Amphianthus, Little *(Amphianthus pusillus)*	Threatened	Dicot Freshwater	No
Chaffseed, American *(Schwalbea americana)*	Endangered	Dicot Terrestrial	No
Coneflower, Smooth *(Echinacea laevigata)*	Endangered	Dicot Terrestrial	No
Dropwort, Canby's *(Oxypolis canbyi)*	Endangered	Dicot Terrestrial, Freshwater	No
Gooseberry, Miccosukee *(Ribes echinellum)*	Threatened	Dicot Terrestrial	No
Harperella *(Ptilimnium nodosum)*	Endangered	Dicot Freshwater	No

South Carolina (37) species:

		Taxa	Critical Habitat
Heartleaf, Dwarf-flowered	Threatened	Dicot	No
(Hexastylis naniflora)		Terrestrial	
Loosestrife, Rough-leaved	Endangered	Dicot	No
(Lysimachia asperulaefolia)		Terrestrial	
Pitcher-plant, Mountain Sweet	Endangered	Dicot	No
(Sarracenia rubra ssp. jonesii)		Freshwater, Terrestrial	
Pondberry	Endangered	Dicot	No
(Lindera melissifolia)		Terrestrial	
Sunflower, Schweinitz's	Endangered	Dicot	No
(Helianthus schweinitzii)		Terrestrial	
Quillwort, Black-spored	Endangered	Ferns	No
(Isoetes melanospora)		Vernal pool	
Sturgeon, Shortnose	Endangered	Fish	No
(Acipenser brevirostrum)		Saltwater, Freshwater	
Lichen, Rock Gnome	Endangered	Lichen	No
(Gymnoderma lineare)		Terrestrial	
Bat, Indiana	Endangered	Mammal	Yes
(Myotis sodalis)		Subterraneous, Terrestrial	
Manatee, West Indian	Endangered	Marine mml	Yes
(Trichechus manatus)		Saltwater	
Whale, Finback	Endangered	Marine mml	No
(Balaenoptera physalus)		Saltwater	
Whale, Humpback	Endangered	Marine mml	No
(Megaptera novaeangliae)		Saltwater	
Whale, northern right	Endangered	Marine mml	Yes
(Eubalaena glacialis (incl. australis))		Saltwater	
Arrowhead, Bunched	Endangered	Monocot	No
(Sagittaria fasciculata)		Freshwater	
Irisette, White	Endangered	Monocot	No
(Sisyrinchium dichotomum)		Terrestrial	
Pink, Swamp	Threatened	Monocot	No
(Helonias bullata)		Terrestrial, Freshwater	
Pogonia, Small Whorled	Threatened	Monocot	No
(Isotria medeoloides)		Terrestrial	
Trillium, Persistent	Endangered	Monocot	No
(Trillium persistens)		Terrestrial	
Trillium, Relict	Endangered	Monocot	No
(Trillium reliquum)		Terrestrial	
Sea turtle, green	Endangered	Reptile	No
(Chelonia mydas)		Saltwater	
Sea turtle, hawksbill	Endangered	Reptile	Yes
(Eretmochelys imbricata)		Saltwater	

South Carolina (37) species:

		Taxa	Critical Habitat
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile Saltwater	No
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile Saltwater	Yes
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile Saltwater	No
Snake, Eastern Indigo *(Drymarchon corais couperi)*	Threatened	Reptile Terrestrial	No

South Dakota (8) species:

		Taxa	Critical Habitat
Crane, Whooping *(Grus americana)*	Endangered	Bird Terrestrial, Freshwater	Yes
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird Terrestrial	No
Shiner, Topeka *(Notropis topeka (=tristis))*	Endangered	Fish Freshwater	Yes
Sturgeon, Pallid *(Scaphirhynchus albus)*	Endangered	Fish Freshwater	No
Beetle, American Burying *(Nicrophorus americanus)*	Endangered	Insect Terrestrial	No
Ferret, Black-footed *(Mustela nigripes)*	Endangered	Mammal Terrestrial	No
Orchid, Western Prairie Fringed *(Platanthera praeclara)*	Threatened	Monocot Terrestrial	No

Tennessee (83) species:

		Taxa	Critical Habitat
Spider, Spruce-fir Moss *(Microhexura montivaga)*	Endangered	Arachnid Terrestrial	Yes
Stork, Wood *(Mycteria americana)*	Endangered	Bird Terrestrial	No
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered	Bird Terrestrial	No
Combshell, Upland *(Epioblasma metastriata)*	Endangered	Bivalve Freshwater	Yes
Fanshell *(Cyprogenia stegaria)*	Endangered	Bivalve Freshwater	No
Kidneyshell, Triangular *(Ptychobranchus greenii)*	Endangered	Bivalve Freshwater	Yes
Mucket, Pink (Pearlymussel) *(Lampsilis abrupta)*	Endangered	Bivalve Freshwater	No

Tennessee (83) species:

		Taxa	Critical Habitat
Mussel, Alabama Moccasinshell *(Medionidus acutissimus)*	Threatened	Bivalve Freshwater	Yes
Mussel, Clubshell *(Pleurobema clava)*	Endangered	Bivalve Freshwater	No
Mussel, Coosa Moccasinshell *(Medionidus parvulus)*	Endangered	Bivalve Freshwater	Yes
Mussel, Cumberland Combshell *(Epioblasma brevidens)*	Endangered	Bivalve Freshwater	Yes
Mussel, Cumberland Elktoe *(Alasmidonta atropurpurea)*	Endangered	Bivalve Freshwater	Yes
Mussel, Cumberland Pigtoe *(Pleurobema gibberum)*	Endangered	Bivalve Freshwater	No
Mussel, Fine-lined Pocketbook *(Lampsilis altilis)*	Threatened	Bivalve Freshwater	Yes
Mussel, Fine-rayed Pigtoe *(Fusconaia cuneolus)*	Endangered	Bivalve Freshwater	No
Mussel, Ovate Clubshell *(Pleurobema perovatum)*	Endangered	Bivalve Freshwater	Yes
Mussel, Oyster *(Epioblasma capsaeformis)*	Endangered	Bivalve Freshwater	Yes
Mussel, Ring Pink (=Golf Stick Pearly) *(Obovaria retusa)*	Endangered	Bivalve Freshwater	No
Mussel, Rough Pigtoe *(Pleurobema plenum)*	Endangered	Bivalve Freshwater	No
Mussel, Shiny Pigtoe *(Fusconaia cor)*	Endangered	Bivalve Freshwater	No
Mussel, Southern Pigtoe *(Pleurobema georgianum)*	Endangered	Bivalve Freshwater	Yes
Pearlymussel, Alabama Lamp *(Lampsilis virescens)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Appalachian Monkeyface *(Quadrula sparsa)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Birdwing *(Conradilla caelata)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Cracking *(Hemistena lata)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Cumberland Bean *(Villosa trabalis)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Cumberland Monkeyface *(Quadrula intermedia)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Dromedary *(Dromus dromas)*	Endangered	Bivalve Freshwater	No

Tennessee (83) species:

		Taxa	Critical Habitat
Pearlymussel, Green-blossom *(Epioblasma torulosa gubernaculum)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Little-wing *(Pegias fabula)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Orange-footed *(Plethobasus cooperianus)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Pale Lilliput *(Toxolasma cylindrellus)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Purple Cat's Paw *(Epioblasma obliquata obliquata)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Tubercled-blossom *(Epioblasma torulosa torulosa)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Turgid-blossom *(Epioblasma turgidula)*	Endangered	Bivalve Freshwater	No
Pearlymussel, White Wartyback *(Plethobasus cicatricosus)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Yellow-blossom *(Epioblasma florentina florentina)*	Endangered	Bivalve Freshwater	No
Purple Bean *(Villosa perpurpurea)*	Endangered	Bivalve Freshwater	Yes
Rabbitsfoot, Rough *(Quadrula cylindrica strigillata)*	Endangered	Bivalve Freshwater	Yes
Riffleshell, Tan *(Epioblasma florentina walkeri (=E. walkeri))*	Endangered	Bivalve Freshwater	No
Crayfish, Nashville *(Orconectes shoupi)*	Endangered	Crustacean Freshwater	No
Aster, Ruth's Golden *(Pityopsis ruthii)*	Endangered	Dicot Terrestrial	No
Avens, Spreading *(Geum radiatum)*	Endangered	Dicot Terrestrial	No
Bladderpod, Spring Creek *(Lesquerella perforata)*	Endangered	Dicot Floodplain	No
Bluet, Roan Mountain *(Hedyotis purpurea var. montana)*	Endangered	Dicot Terrestrial	No
Chaffseed, American *(Schwalbea americana)*	Endangered	Dicot Terrestrial	No
Clover, Leafy Prairie *(Dalea foliosa)*	Endangered	Dicot Terrestrial	No
Coneflower, Tennessee Purple *(Echinacea tennesseensis)*	Endangered	Dicot Terrestrial	No
Goldenrod, Blue Ridge *(Solidago spithamaea)*	Threatened	Dicot Terrestrial	No

Tennessee (83) species:

		Taxa	Critical Habitat
Ground-plum, Guthrie's	Endangered	Dicot	No
(Astragalus bibullatus)	Terrestrial		
Pitcher-plant, Green	Endangered	Dicot	No
(Sarracenia oreophila)	Terrestrial, Freshwater		
Potato-bean, Price's	Threatened	Dicot	No
(Apios priceana)	Terrestrial		
Rock-cress, Large (=Braun's)	Endangered	Dicot	Yes
(Arabis perstellata E. L. Braun var. ampla Rollins)	Terrestrial		
Rosemary, Cumberland	Threatened	Dicot	No
(Conradina verticillata)	Terrestrial		
Sandwort, Cumberland	Endangered	Dicot	No
(Arenaria cumberlandensis)	Terrestrial		
Skullcap, Large-flowered	Threatened	Dicot	No
(Scutellaria montana)	Terrestrial		
Spiraea, Virginia	Threatened	Dicot	No
(Spiraea virginiana)	Terrestrial		
Fern, American hart's-tongue	Threatened	Ferns	No
(Asplenium scolopendrium var. americanum)	Terrestrial		
Chub, Slender	Threatened	Fish	Yes
(Erimystax cahni)	Freshwater		
Chub, Spotfin	Threatened	Fish	Yes
(Erimonax monachus)	Freshwater		
Dace, Blackside	Threatened	Fish	No
(Phoxinus cumberlandensis)	Freshwater		
Darter, Amber	Endangered	Fish	Yes
(Percina antesella)	Freshwater		
Darter, Bluemask (=jewel)	Endangered	Fish	No
(Etheostoma /)	Freshwater		
Darter, Boulder	Endangered	Fish	No
(Etheostoma wapiti)	Freshwater		
Darter, Duskytail	Endangered	Fish	No
(Etheostoma percnurum)	Freshwater		
Darter, Slackwater	Threatened	Fish	Yes
(Etheostoma boschungi)	Freshwater		
Darter, Snail	Threatened	Fish	No
(Percina tanasi)	Freshwater		
Logperch, Conasauga	Endangered	Fish	Yes
(Percina jenkinsi)	Freshwater		
Madtom, Pygmy	Endangered	Fish	No
(Noturus stanauli)	Freshwater		
Madtom, Smoky	Endangered	Fish	Yes
(Noturus baileyi)	Freshwater		

Tennessee (83) species:

		Taxa	Critical Habitat
Madtom, Yellowfin *(Noturus flavipinnis)*	Threatened	Fish Freshwater	Yes
Shiner, Blue *(Cyprinella caerulea)*	Threatened	Fish Freshwater	No
Sturgeon, Pallid *(Scaphirhynchus albus)*	Endangered	Fish Freshwater	No
Marstonia, Royal (=Royal Snail) *(Pyrgulopsis ogmorhaphe)*	Endangered	Gastropod Terrestrial	No
Riversnail, Anthony's *(Athearnia anthonyi)*	Endangered	Gastropod Freshwater	No
Snail, Painted Snake Coiled Forest *(Anguispira picta)*	Threatened	Gastropod Terrestrial	No
Lichen, Rock Gnome *(Gymnoderma lineare)*	Endangered	Lichen Terrestrial	No
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal Subterraneous, Terrestrial	No
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal Subterraneous, Terrestrial	Yes
Squirrel, Carolina Northern Flying *(Glaucomys sabrinus coloratus)*	Endangered	Mammal Terrestrial	No
Grass, Tennessee Yellow-eyed *(Xyris tennesseensis)*	Endangered	Monocot Terrestrial	No
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot Terrestrial	No

Texas (60) species:

		Taxa	Critical Habitat
Salamander, San Marcos *(Eurycea nana)*	Threatened	Amphibian Freshwater, Terrestrial	Yes
Salamander, Texas Blind *(Typhlomolge rathbuni)*	Endangered	Amphibian Subterraneous, Freshwater	No
Toad, Houston *(Bufo houstonensis)*	Endangered	Amphibian Terrestrial, Freshwater	Yes
Harvestman, Bee Creek Cave *(Texella reddelli)*	Endangered	Arachnid Terrestrial, Subterraneous	No
Harvestman, Robber Baron Cave *(Texella cokendolpheri)*	Endangered	Arachnid Subterraneous, Terrestrial	Yes
Meshweaver, Braken Bat Cave *(Cicurina venii)*	Endangered	Arachnid Terrestrial, Subterraneous	Yes
Spider, Government Canyon Cave *(Neoleptoneta microps)*	Endangered	Arachnid Subterraneous, Terrestrial	No
Spider, Madla's Cave *(Cicurina madla)*	Endangered	Arachnid Subterraneous, Terrestrial	Yes
Spider, Robber Baron Cave *(Cicurina baronia)*	Endangered	Arachnid Terrestrial, Subterraneous	Yes

Texas (60) species:

		Taxa	Critical Habitat
Spider, Vesper Cave *(Cicurina vespera)*	Endangered	Arachnid Subterraneous, Terrestrial	No
Crane, Whooping *(Grus americana)*	Endangered	Bird Terrestrial, Freshwater	Yes
Curlew, Eskimo *(Numenius borealis)*	Endangered	Bird Terrestrial	No
Falcon, Northern Aplomado *(Falco femoralis septentrionalis)*	Endangered	Bird Terrestrial	No
Flycatcher, Southwestern Willow *(Empidonax traillii extimus)*	Endangered	Bird Terrestrial	Yes
Owl, Mexican Spotted *(Strix occidentalis lucida)*	Threatened	Bird Terrestrial	Yes
Pelican, Brown *(Pelecanus occidentalis)*	Endangered	Bird Terrestrial	No
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Prairie-chicken, Attwater's Greater *(Tympanuchus cupido attwateri)*	Endangered	Bird Terrestrial	No
Tern, Interior (population) Least *(Sterna antillarum)*	Endangered	Bird Terrestrial	No
Vireo, Black-capped *(Vireo atricapilla)*	Endangered	Bird Terrestrial	No
Warbler (=Wood), Golden-cheeked *(Dendroica chrysoparia)*	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered	Bird Terrestrial	No
Amphipod, Peck's Cave *(Stygobromus (=Stygonectes) pecki)*	Endangered	Crustacean Subterraneous, Freshwater	No
Ambrosia, South Texas *(Ambrosia cheiranthifolia)*	Endangered	Dicot Terrestrial	No
Ayenia, Texas *(Ayenia limitaris)*	Endangered	Dicot Terrestrial	No
Bladderpod, Zapata *(Lesquerella thamnophila)*	Endangered	Dicot Terrestrial	Yes
Cactus, Black Lace *(Echinocereus reichenbachii var. albertii)*	Endangered	Dicot Terrestrial	No
Cactus, Sneed Pincushion *(Coryphantha sneedii var. sneedii)*	Endangered	Dicot Terrestrial	No
Cactus, Star *(Astrophytum asterias)*	Endangered	Dicot Terrestrial	No
Cactus, Tobusch Fishhook *(Ancistrocactus tobuschii)*	Endangered	Dicot Terrestrial	No

Texas (60) species:

		Taxa	Critical Habitat
Dawn-flower, Texas Prairie (=Texas Bitterweed) *(Hymenoxys texana)*	Endangered	Dicot Terrestrial	No
Dogweed, Ashy *(Thymophylla tephroleuca)*	Endangered	Dicot Terrestrial	No
Frankenia, Johnston's *(Frankenia johnstonii)*	Endangered	Dicot Terrestrial	No
Manioc, Walker's *(Manihot walkerae)*	Endangered	Dicot Terrestrial	No
Phlox, Texas Trailing *(Phlox nivalis ssp. texensis)*	Endangered	Dicot Terrestrial	No
Sand-verbena, Large-fruited *(Abronia macrocarpa)*	Endangered	Dicot Terrestrial	No
Snowbells, Texas *(Styrax texanus)*	Endangered	Dicot Terrestrial	No
Darter, Fountain *(Etheostoma fonticola)*	Endangered	Fish Freshwater	Yes
Gambusia, San Marcos *(Gambusia georgei)*	Endangered	Fish Freshwater	Yes
Shiner, Arkansas River *(Notropis girardi)*	Threatened	Fish Freshwater	Yes
Beetle, American Burying *(Nicrophorus americanus)*	Endangered	Insect Terrestrial	No
Beetle, Comal Springs Dryopid *(Stygoparnus comalensis)*	Endangered	Insect Subterraneous, Freshwater	No
Beetle, Comal Springs Riffle *(Heterelmis comalensis)*	Endangered	Insect Subterraneous, Freshwater	No
Beetle, Helotes Mold *(Batrisodes venyivi)*	Endangered	Insect Subterraneous	Yes
Rhadine exilis (ncn) *(Rhadine exilis)*	Endangered	Insect Terrestrial, Subterraneous	Yes
Rhadine infernalis (ncn) *(Rhadine infernalis)*	Endangered	Insect Terrestrial, Subterraneous	Yes
Bear, Louisiana Black *(Ursus americanus luteolus)*	Threatened	Mammal Terrestrial	No
Jaguarundi, Gulf Coast *(Herpailurus (=Felis) yagouaroundi cacomitli)*	Endangered	Mammal Terrestrial	No
Jaguarundi, Sinaloan *(Herpailurus (=Felis) yagouaroundi tolteca)*	Endangered	Mammal Terrestrial	No
Ocelot *(Leopardus (=Felis) pardalis)*	Endangered	Mammal Terrestrial	No
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml Saltwater	No

Texas (60) species:

		Taxa	Critical Habitat
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml Saltwater	No
Ladies'-tresses, Navasota *(Spiranthes parksii)*	Endangered	Monocot Terrestrial	No
Wild-rice, Texas *(Zizania texana)*	Endangered	Monocot Freshwater	Yes
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile Saltwater	No
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile Saltwater	Yes
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile Saltwater	No
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile Saltwater	Yes
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile Saltwater	No
Snake, Concho Water *(Nerodia paucimaculata)*	Threatened	Reptile Freshwater, Terrestrial	Yes

Utah (5) species:

		Taxa	Critical Habitat
Cactus, Wright Fishhook *(Sclerocactus wrightiae)*	Endangered	Dicot Terrestrial	No
Milk-vetch, Heliotrope *(Astragalus montii)*	Threatened	Dicot Terrestrial	Yes
Townsendia, Last Chance *(Townsendia aprica)*	Threatened	Dicot Terrestrial	No
Trout, Lahontan Cutthroat *(Oncorhynchus clarki henshawi)*	Threatened	Fish Freshwater	No
Prairie Dog, Utah *(Cynomys parvidens)*	Threatened	Mammal Terrestrial, Subterraneous	No

Vermont (3) species:

		Taxa	Critical Habitat
Mussel, Dwarf Wedge *(Alasmidonta heterodon)*	Endangered	Bivalve Freshwater	No
Milk-vetch, Jesup's *(Astragalus robbinsii var. jesupi)*	Endangered	Dicot Terrestrial	No
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal Subterraneous, Terrestrial	Yes

Virginia (59) species:

		Taxa	Critical Habitat
Salamander, Shenandoah *(Plethodon shenandoah)*	Endangered	Amphibian Freshwater, Terrestrial	No
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes

Virginia (59) species:

Woodpecker, Red-cockaded *(Picoides borealis)*	Endangered	Bird	No
Mussel, Cumberland Combshell *(Epioblasma brevidens)*	Endangered	Bivalve Freshwater	Yes
Mussel, Dwarf Wedge *(Alasmidonta heterodon)*	Endangered	Bivalve Freshwater	No
Mussel, Fine-rayed Pigtoe *(Fusconaia cuneolus)*	Endangered	Bivalve Freshwater	No
Mussel, Oyster *(Epioblasma capsaeformis)*	Endangered	Bivalve Freshwater	Yes
Mussel, Shiny Pigtoe *(Fusconaia cor)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Appalachian Monkeyface *(Quadrula sparsa)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Birdwing *(Conradilla caelata)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Cracking *(Hemistena lata)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Cumberland Bean *(Villosa trabalis)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Cumberland Monkeyface *(Quadrula intermedia)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Dromedary *(Dromus dromas)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Little-wing *(Pegias fabula)*	Endangered	Bivalve Freshwater	No
Purple Bean *(Villosa perpurpurea)*	Endangered	Bivalve Freshwater	Yes
Rabbitsfoot, Rough *(Quadrula cylindrica strigillata)*	Endangered	Bivalve Freshwater	Yes
Riffleshell, Tan *(Epioblasma florentina walkeri (=E. walkeri))*	Endangered	Bivalve Freshwater	No
Spinymussel, James River *(Pleurobema collina)*	Endangered	Bivalve Freshwater	No
Isopod, Lee County Cave *(Lirceus usdagalun)*	Endangered	Crustacean Freshwater	No
Isopod, Madison Cave *(Antrolana lira)*	Threatened	Crustacean Freshwater	No
Amaranth, Seabeach *(Amaranthus pumilus)*	Threatened	Dicot Coastal (neritic)	No
Birch, Virginia Round-leaf *(Betula uber)*	Threatened	Dicot Floodplain	No

Virginia (59) species:

		Taxa	Critical Habitat
Bittercress, Small-anthered *(Cardamine micranthera)*	Endangered	Dicot	No
		Terrestrial	
Chaffseed, American *(Schwalbea americana)*	Endangered	Dicot	No
		Terrestrial	
Coneflower, Smooth *(Echinacea laevigata)*	Endangered	Dicot	No
		Terrestrial	
Harperella *(Ptilimnium nodosum)*	Endangered	Dicot	No
		Freshwater	
Joint-vetch, Sensitive *(Aeschynomene virginica)*	Threatened	Dicot	No
		Terrestrial, Brackish	
Rock-cress, Shale Barren *(Arabis serotina)*	Endangered	Dicot	No
		Terrestrial	
Sneezeweed, Virginia *(Helenium virginicum)*	Threatened	Dicot	No
		Vernal pool	
Spiraea, Virginia *(Spiraea virginiana)*	Threatened	Dicot	No
		Terrestrial	
Sumac, Michaux's *(Rhus michauxii)*	Endangered	Dicot	No
		Terrestrial	
Sunflower, Schweinitz's *(Helianthus schweinitzii)*	Endangered	Dicot	No
		Terrestrial	
Chub, Slender *(Erimystax cahni)*	Threatened	Fish	Yes
		Freshwater	
Chub, Spotfin *(Erimonax monachus)*	Threatened	Fish	Yes
		Freshwater	
Dace, Blackside *(Phoxinus cumberlandensis)*	Threatened	Fish	No
		Freshwater	
Logperch, Roanoke *(Percina rex)*	Endangered	Fish	No
		Freshwater	
Madtom, Yellowfin *(Noturus flavipinnis)*	Threatened	Fish	Yes
		Freshwater	
Sturgeon, Shortnose *(Acipenser brevirostrum)*	Endangered	Fish	No
		Saltwater, Freshwater	
Snail, Virginia Fringed Mountain *(Polygyriscus virginianus)*	Endangered	Gastropod	No
		Terrestrial	
Beetle, Northeastern Beach Tiger *(Cicindela dorsalis dorsalis)*	Threatened	Insect	No
		Terrestrial	
Butterfly, Mitchell's Satyr *(Neonympha mitchellii mitchellii)*	Endangered	Insect	No
		Terrestrial	
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal	No
		Subterraneous, Terrestrial	
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal	Yes
		Subterraneous, Terrestrial	

Virginia (59) species:

		Taxa	Critical Habitat
Bat, Virginia Big-eared *(Corynorhinus (=Plecotus) townsendii virginianus)*	Endangered	Mammal	Yes
		Terrestrial, Subterraneous	
Squirrel, Delmarva Peninsula Fox *(Sciurus niger cinereus)*	Endangered	Mammal	No
		Terrestrial	
Squirrel, Virginia Northern Flying *(Glaucomys sabrinus fuscus)*	Endangered	Mammal	No
		Terrestrial	
Whale, Finback *(Balaenoptera physalus)*	Endangered	Marine mml	No
		Saltwater	
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml	No
		Saltwater	
Whale, northern right *(Eubalaena glacialis (incl. australis))*	Endangered	Marine mml	Yes
		Saltwater	
Bulrush, Northeastern (=Barbed Bristle) *(Scirpus ancistrochaetus)*	Endangered	Monocot	No
		Terrestrial, Freshwater	
Orchid, Eastern Prairie Fringed *(Platanthera leucophaea)*	Threatened	Monocot	No
		Terrestrial	
Pink, Swamp *(Helonias bullata)*	Threatened	Monocot	No
		Terrestrial, Freshwater	
Pogonia, Small Whorled *(Isotria medeoloides)*	Threatened	Monocot	No
		Terrestrial	
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile	No
		Saltwater	
Sea turtle, hawksbill *(Eretmochelys imbricata)*	Endangered	Reptile	Yes
		Saltwater	
Sea turtle, Kemp's ridley *(Lepidochelys kempii)*	Endangered	Reptile	No
		Saltwater	
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile	Yes
		Saltwater	
Sea turtle, loggerhead *(Caretta caretta)*	Threatened	Reptile	No
		Saltwater	

Washington (16) species:

		Taxa	Critical Habitat
Salmon, Chinook (Snake River Fall Run) *(Oncorhynchus (=Salmo) tshawytscha)*	Threatened	Fish	No
		Freshwater, Saltwater, Brackish	
Salmon, Chinook (Snake River spring/summer) *(Oncorhynchus (=Salmo) tshawytscha)*	Threatened	Fish	Yes
		Brackish, Saltwater, Freshwater	
Salmon, Chinook (Upper Columbia River Spring) *(Oncorhynchus (=Salmo) tshawytscha)*	Endangered	Fish	Yes
		Freshwater, Saltwater, Brackish	
Salmon, Sockeye (Snake River population) *(Oncorhynchus (=Salmo) nerka)*	Endangered	Fish	No
		Brackish, Saltwater, Freshwater	
Steelhead, (Middle Columbia River population) *(Oncorhynchus (=Salmo) mykiss)*	Threatened	Fish	Yes
		Freshwater, Saltwater, Brackish	
Steelhead, (Snake River Basin population) *(Oncorhynchus (=Salmo) mykiss)*	Threatened	Fish	Yes
		Freshwater, Brackish, Saltwater	

Washington (16) species:

		Taxa	Critical Habitat
Steelhead, (Upper Columbia River population) *(Oncorhynchus (=Salmo) mykiss)*	Threatened	Fish	Yes
	Brackish, Saltwater, Freshwater		
Steelhead, Puget Sound *(Oncorhynchus mykiss)*	Threatened	Fish	No
Trout, Bull *(Salvelinus confluentus)*	Threatened	Fish	No
	Freshwater		
Trout, Bull (Columbia River population) *(Salvelinus confluentus)*	Threatened	Fish	Yes
	Freshwater		
Trout, Bull (Klamath River population) *(Salvelinus confluentus)*	Threatened	Fish	Yes
	Freshwater		
Rabbit, Pygmy *(Brachylagus idahoensis)*	Endangered	Mammal	No
	Terrestrial		
Sea-lion, Steller (eastern) *(Eumetopias jubatus)*	Threatened	Marine mml	Yes
	Saltwater		
Whale, Humpback *(Megaptera novaeangliae)*	Endangered	Marine mml	No
	Saltwater		
Sea turtle, green *(Chelonia mydas)*	Endangered	Reptile	No
	Saltwater		
Sea turtle, leatherback *(Dermochelys coriacea)*	Endangered	Reptile	Yes
	Saltwater		

West Virginia (11) species:

		Taxa	Critical Habitat
Salamander, Cheat Mountain *(Plethodon nettingi)*	Threatened	Amphibian	No
	Freshwater, Terrestrial		
Mucket, Pink (Pearlymussel) *(Lampsilis abrupta)*	Endangered	Bivalve	No
	Freshwater		
Clover, Running Buffalo *(Trifolium stoloniferum)*	Endangered	Dicot	No
	Terrestrial		
Harperella *(Ptilimnium nodosum)*	Endangered	Dicot	No
	Freshwater		
Rock-cress, Shale Barren *(Arabis serotina)*	Endangered	Dicot	No
	Terrestrial		
Snail, Flat-spired Three-toothed *(Triodopsis platysayoides)*	Threatened	Gastropod	No
	Terrestrial		
Bat, Gray *(Myotis grisescens)*	Endangered	Mammal	No
	Subterraneous, Terrestrial		
Bat, Indiana *(Myotis sodalis)*	Endangered	Mammal	Yes
	Subterraneous, Terrestrial		
Bat, Virginia Big-eared *(Corynorhinus (=Plecotus) townsendii virginianus)*	Endangered	Mammal	Yes
	Terrestrial, Subterraneous		
Squirrel, Virginia Northern Flying *(Glaucomys sabrinus fuscus)*	Endangered	Mammal	No
	Terrestrial		
Bulrush, Northeastern (=Barbed Bristle) *(Scirpus ancistrochaetus)*	Endangered	Monocot	No
	Terrestrial, Freshwater		

Wisconsin (15) species:

		Taxa	Critical Habitat
Crane, Whooping *(Grus americana)*	Endangered	Bird Terrestrial, Freshwater	Yes
Plover, Piping *(Charadrius melodus)*	Endangered	Bird Terrestrial	Yes
Warbler (=Wood), Kirtland's *(Dendroica kirtlandii)*	Endangered	Bird Terrestrial	No
Mussel, Winged Mapleleaf *(Quadrula fragosa)*	Endangered	Bivalve Freshwater	No
Pearlymussel, Higgins' Eye *(Lampsilis higginsii)*	Endangered	Bivalve Freshwater	No
Clover, Prairie Bush *(Lespedeza leptostachya)*	Threatened	Dicot Terrestrial	No
Locoweed, Fassett's *(Oxytropis campestris var. chartacea)*	Threatened	Dicot Terrestrial	No
Monkshood, Northern Wild *(Aconitum noveboracense)*	Threatened	Dicot Terrestrial	No
Thistle, Pitcher's *(Cirsium pitcheri)*	Threatened	Dicot Terrestrial	No
Butterfly, Karner Blue *(Lycaeides melissa samuelis)*	Endangered	Insect Terrestrial	No
Dragonfly, Hine's Emerald *(Somatochlora hineana)*	Endangered	Insect Freshwater, Terrestrial	No
Lynx, Canada *(Lynx canadensis)*	Threatened	Mammal Terrestrial	No
Wolf, Gray *(Canis lupus)*	Endangered	Mammal Terrestrial	Yes
Iris, Dwarf Lake *(Iris lacustris)*	Threatened	Monocot Terrestrial	No
Orchid, Eastern Prairie Fringed *(Platanthera leucophaea)*	Threatened	Monocot Terrestrial	No

Wyoming (6) species:

		Taxa	Critical Habitat
Butterfly Plant, Colorado *(Gaura neomexicana var. coloradensis)*	Threatened	Dicot Terrestrial	Yes
Yellowhead, Desert *(Yermo xanthocephalus)*	Threatened	Dicot Terrestrial	Yes
Bear, Grizzly *(Ursus arctos horribilis)*	Threatened	Mammal Terrestrial	No
Ferret, Black-footed *(Mustela nigripes)*	Endangered	Mammal Terrestrial	No
Mouse, Preble's Meadow Jumping *(Zapus hudsonius preblei)*	Threatened	Mammal Terrestrial	Yes
Wolf, Gray *(Canis lupus)*	Endangered	Mammal Terrestrial	Yes