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MEMORANDUM

SUBJECT: Ecological Risk Assessment for Experimental Use Permit (DP Barcode 354510) and Section 3 New Use (DP Barcode 357888) registrations for use of mesotrione on soybeans.

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Attached is an ecological risk assessment of the use of the herbicide mesotrione on soybeans, for registration both as a Section 3 New Use (DP Barcode 357888), and at a higher application rate, as an Experimental Use Permit (DP Barcode 354510). For the Section 3 New Use, the proposed application rate of 0.188 lb a.i./A is equal to the lowest previously registered rate, and so risk conclusions have not changed. For this new use, we conclude that potential adverse environmental effects to terrestrial and aquatic animals and to aquatic plants are minimal. For terrestrial plants, there is a conclusion of risk to all categories of terrestrial plants except for non-listed monocots in adjacent upland areas exposed to mesotrione in runoff.

The Experimental Use Permit has an annual application rate of 1.5 lb a.i./A, three times the highest previously registered rate. At this rate, levels of concern are exceeded for all categories of terrestrial and aquatic plants except for non-vascular plants. Risks to aquatic animals and to mammals remain low, but this use leads to potential adverse effects to birds, with acute risk to endangered species and chronic risk for both endangered and non-endangered species.



I. EXECUTIVE SUMMARY

EFED has completed a review of the Section 3 New Use request for the use of mesotrione on soybeans at an annual application rate of 0.188 lb a.i./A and of the Experimental Use Permit request for use on soybeans at an annual application rate of 1.5 lb a.i./A. Current registration includes uses with application rates from 0.188 lb a.i./A to 0.50 lb a.i./A, so the proposed new use is equal to the lowest previously registered rate while the proposed experimental use permit is three times the highest previously registered maximum rate.

No new fate or toxicity data are available and so this review summarizes the fate characterization and most sensitive toxicity endpoints from previous analyses. Risk quotients (RQs) for aquatic organisms have been calculated for the proposed uses based on aquatic estimated environmental concentrations (EECs) generated using the Tier II PRZM/EXAMS models. RQs for terrestrial animals have been calculated using the T-REX model, and for terrestrial plants, conclusions are based on results from the TerrPlant model. **Table 1** presents the risk conclusions for all categories.

Table 1. Summary of Environmental Risk Conclusions for proposed uses of mesotrione on soybeans.

Assessment Endpoint	New Use (0.188 lb a.i./A/yr)	EUP (1.5 lb a.i./A/yr)
Acute and Chronic Risk to Freshwater & Marine/Estuarine Fish and Amphibians	None	None
Acute and Chronic Risk to Freshwater & Marine/Estuarine Invertebrates	None	None
Risk to Aquatic Plants (Vascular)	Endangered Species	Endangered & Non-Endangered Species
Risk to Aquatic Plants (Non-vascular)	None	None
Acute and Chronic Risk to Mammals	None	None
Acute and Chronic Risk to Birds (and reptiles)	None	<i>Acute: Endangered species</i> (20 g size class feeding on short grass.) <i>Chronic: Endangered & Non-Endangered Species</i> (All birds feeding on short grass or tall grass.)
Risk to Terrestrial Invertebrates	None likely, based on honeybee toxicity data	None likely, based on honeybee toxicity data
Risk to Terrestrial Plants (Dicots)	Endangered & Non-Endangered Species	Endangered & Non-Endangered Species
Risk to Terrestrial Plants (Monocots)	Endangered Species	Endangered & Non-Endangered Species

I. Use Characterization

Mesotrione is a tri-ketone compound used as a systemic pre-emergence and post-emergence herbicide for “the selective contact and residual control of broadleaf weeds.” It is absorbed through the soil by emerging weeds and through the foliage of emerged weeds. According to the registrant, it acts by inhibiting the enzyme p-hydroxyphenylpyruvate dioxygenase (HPPD) and thus disrupting the pigment (chlorophyll) biosynthesis pathway in susceptible plants.

The proposed actions for mesotrione are for new uses on soybeans, both as a Section 3 New Use and as an Experimental Use Permit (EUP), at annual application rates of 0.188 lb a.i./A and 1.5 lb a.i./A, respectively. Both are for the end use product Callisto, a liquid formulation containing 40% mesotrione, or 4.0 lb a.i./gal. In the Section 3 New Use, mesotrione is to be applied pre-emergence as a single application. The EUP allows three applications per year; one pre-emergence application at up to 0.75 lb a.i./A and two post-emergence applications of up to 0.375 lb a.i./A each. The minimum application interval is not reported but is assumed to be 14 days based on instructions for other uses. Both uses are applied through ground spray.

The EUP is proposed to extend between 2009 and 2012. Acreages and locations are different each year, with uses in 23 states and Puerto Rico, and acreages per state ranging from 25 to 500. The specific uses requested are included as **Appendix A**.

Currently registered uses include asparagus, corn (field corn, field corn for silage, yellow popcorn, and sweet corn), bush and cane berries (blueberries, lingonberries, black and red raspberries, and blackberries), cranberries, flax, golf courses and sod farms, grass for seed, millet, oats, okra, rhubarb, sorghum (sweet and grain), and sugarcane. For currently registered uses, the maximum single application rates range from 0.168 lb a.i./A to 0.27 lb a.i./A and seasonal application rates range from 0.188 to 0.5 lb a.i./A. The EUP, then, has an annual application rate three times higher than any previously registered, and the Section 3 New Use is equal to the lowest currently registered application rate.

II. Exposure Assessment

1. Environmental Fate and Transport Characterization

The environmental fate properties of mesotrione were discussed thoroughly in the new chemical assessment (DP Barcodes D253844) and no new fate data are available. To summarize, mesotrione is a mobile compound with limited persistence in soil and aquatic environments. It is acidic and its fate properties have a strong dependence on environmental pH. In soil, mesotrione dissipates through aerobic metabolism with rates dependent on ambient conditions ($t_{1/2}$: 5 to 32 d). Mesotrione had low sorption to soils/sediments at all pHs tested (K_{oc} : 16.5 to 390 mL/g) and would be categorized as moderately mobile to mobile. Terrestrial field dissipation studies showed dissipation half-lives of 2 to 14 days and did not find any residues below 6 inches. Mesotrione may reach surface water through drift, runoff, and/or erosion. In aquatic environments, mesotrione is stable to hydrolysis and has limited photolysis but dissipates rapidly through aerobic ($t_{1/2}$: 3 to 6 d) and anaerobic ($t_{1/2}$: 4 d) metabolism. Based on physicochemical properties, bioconcentration of mesotrione is not expected. Likewise, volatilization of mesotrione is not indicated. Metabolism of mesotrione led to two major degradates: MNBA,

formed through aerobic metabolism at up to 60%, and AMBA, formed through anaerobic metabolism at up to 60%. These degradates are not included in exposure estimates.

2. Aquatic Exposure

a. Models

Estimated environmental concentrations (EECs) of mesotrione in surface water from the proposed new uses were generated using Tier II screening simulation models, the Pesticide Root Zone Model (PRZM v3.12.2; May 12, 2005) and the Exposure Analysis Modeling System (EXAMS v2.98.04.06; Apr. 25, 2005), coupled with the input shell pe5.pl (Nov. 15, 2006). PRZM simulates fate and transport of pesticides on the agricultural field and EXAMS simulates the fate and resulting daily concentrations of pesticides that reach an adjacent water body through runoff, erosion, and spray drift. Simulations are based on crop-specific scenarios developed to represent environmental conditions at sites at high runoff-vulnerability for pesticide transport to surface waters from a particular crop. Exposure is estimated for the maximum application pattern to a 10-ha field bordering a 1-ha pond, 2-m deep (20,000 m³) with no outlet. Using appropriate scenarios linked with local meteorological data, the models are run for 30 years with the reported EECs representing the values that are expected once every ten years, based on the thirty years of daily values generated during the simulation. Models and additional information are available at the EPA's water modeling website, <http://www.epa.gov/oppefed1/models/water/>.

b. Modeling Approach and Input Parameters

For all modeling, input parameters were selected based on EFED input guidance (http://www.epa.gov/oppefed1/models/water/input_guidance2_28_02.htm). Input parameters represent the parent compound only and are presented below in Table 2. All chemical-specific inputs are the same as in the most recent assessment except that the aerobic soil metabolism half-life and the organic carbon partitioning coefficient (K_{oc}) have been updated to match current input guidance. Because these two parameters are correlated with soil pH, the previous assessments have used the pair of values that led to the most conservative EEC. In this modeling, the input for aerobic soil metabolism is the upper 90th percentile confidence bound on the mean of 17 values and the input for K_{oc} is the mean of 17 values, as directed in current guidance.

Environmental conditions in the modeling are represented using the Mississippi soybean crop scenario. An application date of May 3 was selected to represent conservative potential runoff based on label recommendations, crop emergence dates, and scenario precipitation. For the Section 3 New Use, a single application of 0.188 lb a.i./A was modeled and for the EUP, application was modeled at a rate of 0.75 lb a.i./A followed by two applications at 0.375 lb a.i./A at 14 day intervals.

Table 2. PRZM / EXAMS modeling inputs for mesotrione proposed new uses.

PARAMETER	VALUE	SOURCE
CAM	1	Soil applied
Incorporation Depth (cm)	0	Default
Application Efficiency	0.99	Default values for ground spray
Spray Drift Fraction	0.01	
Aerobic Soil Metabolism Half-life (days)	17.2	Upper 90 th percentile confidence bound on the mean of 17 values (MRID: 44505129)
Organic Carbon Partition Coefficient (K _{oc}) (mL/ g _{oc})	113	Mean of 17 values (MRID: 44505204.)
Aerobic Aquatic Half-Life (days)	34.4	One-half aerobic soil metabolism rate
Anaerobic Aquatic half-life (days)	12	3 x single measured value (MRID: 44505131, 44505132)
Aqueous Photolysis half-life (days)	84	Dark corrected; 12 hour light/12 hour dark cycle (MRID: 44537108.)
Hydrolysis half-life (days)	Stable	pH 5, 7, 9 (MRID: 44373529.)
Molecular Weight (g/mole)	339	Product Chemistry
Henry's Law constant (atm-m ³ /mol)	5.1 x 10 ⁻¹²	DP Barcode: D263245.
Water Solubility @ 25°C (mg/L)	1,600	DP Barcode D263245.
Vapor Pressure (torr)	4.30 x 10 ⁻⁸	DP Barcode: D263245.

c. Modeling Results

PRZM/EXAMS results, presented in **Table 3**, are peak and average values expected once every ten years. Modeling outputs are included in **Appendix B**. Sugarcane is the currently registered use with the highest EEC and so this use is included here for comparison purposes.

Table 3. Tier II surface water EECs from proposed uses of mesotrione.

USE	MODELED SCENARIO	Peak (ppb)	21 day (ppb)	60 day (ppb)
Soybean – EUP	MS Soybean	25.1	21.8	19.1
Soybean – NU	MS Soybean	5.1	4.6	3.7
Sugarcane	FL Sugarcane	12.5	11.0	8.8

3. Terrestrial Exposure

Previous assessments since the original new chemical registration (DP Barcode D253844) have not recalculated exposure to terrestrial animals because the maximum annual application rate of other uses considered has only been slightly higher than the initially assessed use on corn. Due to the low toxicity of mesotrione to terrestrial animals, these small increases would not change risk conclusions. This conclusion is still true for the proposed Section 3 New Use for soybeans, which has an application rate equal to the lowest currently registered rate. The much higher application rate currently proposed for the soybean EUP could change conclusions, however, so terrestrial exposure estimates for this use are calculated here.

a. Birds and Mammals

Estimated exposure concentrations for terrestrial receptors were determined using the standard screening-level exposure model, TREX (v.1.4.1; November, 2008). These exposure estimates are based on a database of pesticide residues on wildlife food sources associated with a specified application rate. Essentially, for a single application, there is a linear relationship between the amount of pesticide applied and the amount of pesticide residue present on a given food item. These relationships for the various food items are determined from the Kenaga nomogram as modified by Fletcher (Hoerger and Kenaga, 1972; Fletcher et al., 1994). TREX is a simulation model that, in addition to incorporating the nomogram relationship, also includes pesticide degradation in the estimation of EECs. These exposure values are presented as mass of pesticide consumed per kg body weight of the animal being assessed (mg/kg-bw).

Maximum exposure levels were calculated for use of mesotrione on soybeans at the maximum EUP application rate of 0.75 lb a.i./A.. Because TREX is currently unable to model multiple sequential application rates, the 0.75 lb ai/A, 0.375 lb ai/A, 0.375 lb ai/A sequence with 14 day intervals proposed in the EUP was modeled as 2 applications of 0.75 lb ai/A, 14 days apart in order to provide a conservative estimate of exposure. No empirically determined foliar dissipation half-life value is available and so the default value of 35 days was used (Willis and McDowell, 1987). The food item concentration on any given day is the sum of all concentrations up to that day taking into account the first-order degradation. Over the 365 day run, the highest residue concentration is used in calculations of the RQ. TREX considers exposure only in the area where mesotrione is applied, where residues will be highest. **Table 4** lists exposure estimates for birds and animals obtained from TREX simulations.

Table 4 TREX EECs for Birds and Mammals (2 applications of 0.75 lb ai/A, 14 day interval)

Feeding Categories	Kenaga Upper Bound Dose (mg/kg bwt)		
	Small	Medium	Large
<i>Birds</i>	20 g	100 g	1000g
Short grass	360	206	92
Tall grass	165	94	42
Broadleaf plants/small insects	203	116	52
Fruits/pods/seeds/large insects	23	13	5.8
<i>Mammals</i>	15g	35g	100g
Short grass	302	209	48
Tall grass	138	96	22
Broadleaf plants/small insects	170	117	27
Fruits/pods/seeds/large insects	19	13	3.0

b. Terrestrial Plants

Exposure of terrestrial plants to mesotrione from applications to soybeans has not been recalculated for this assessment because EECs from previous assessments provide sufficient information to determine risk from the proposed new uses. The most recent assessment updated exposure estimates based on ground application at annual rates of 0.188 lb a.i./A to 0.50 lb a.i./A using the TerrPlant (v1.2.1; Nov 9, 2005) screening model. Modeling inputs and outputs can be found in the most recent assessment (DP Barcode D325840), along with more details about the model's assumptions and uncertainties.

III. Ecological Effects Assessment

The effects assessment for the proposed new uses is unchanged from the most recent assessment (DP Barcode D325840), which is summarized here. More detail can be found in that document and in the original new chemical assessment (DP Barcode D253844).

For aquatic animals, mesotrione was found to be practically nontoxic to freshwater fish and invertebrates and to estuarine/marine fish, and it was slightly to moderately toxic to estuarine/marine invertebrates. For terrestrial animals, mesotrione was categorized as practically non-toxic to birds on an acute oral and subacute dietary basis and practically nontoxic to small mammals on an acute and chronic oral basis. It was found to be practically non-toxic to honeybees on an acute contact basis as well. The most sensitive endpoints were used in calculating risk quotients and are presented below in **Table 5** (aquatic animal) and **Table 6** (birds, mammals, and honeybees).

The most sensitive endpoints for terrestrial and aquatic plants are presented in **Table 7**. As an herbicide, mesotrione is likely to have effects on plants. In some categories, the active ingredient has more effect when applied with an adjuvant rather than alone.

Table 5. Summary of most sensitive aquatic animal toxicity data for mesotrione.

Most sensitive Species	Acute Toxicity		Chronic Toxicity	
	LC ₅₀ or EC ₅₀	Category of Toxicity (MRID)	NOAEC, LOAEC	Most Sensitive Endpoint (MRID)
<i>Freshwater Fish</i>				
Rainbow trout <i>Oncorhynchus mykiss</i>	>120 ppm (96-h LC ₅₀)	Practically nontoxic (44373510)	N/A	N/A
Fathead minnow <i>Pimephales promelas</i>	N/A	N/A	11 ppm, 23 ppm	Larval length (44505011)
<i>Freshwater Invertebrates</i>				
Water flea <i>Daphnia magna</i>	840 ppm (48-h EC ₅₀)	Practically nontoxic (44373511)	180 ppm, 300 ppm	Survival (44505010)
<i>Estuarine/Marine Fish</i>				
Sheepshead Minnow <i>Cyprinodon variegatus</i>	410 ppm (96-h LC ₅₀)	Practically nontoxic (44505007)	N/A ¹	N/A ¹
<i>Estuarine/Marine Invertebrates</i>				
Mysid Shrimp <i>Americamysis bahia</i>	3.3 ppm (96-h EC ₅₀)	Moderately toxic (44505008)	N/A ¹	N/A ¹

¹ Chronic estuarine/marine studies were not required, because the acute toxicity to estuarine/marine fish, and invertebrates was low and the chronic toxicity to freshwater fish and invertebrates was also low.

Table 6. Summary of most sensitive avian, mammalian, & honeybee toxicity data for mesotrione.

Most sensitive Species	Acute Toxicity		Chronic Toxicity	
	LD ₅₀ (mg/kg-bw)	Category of Toxicity (MRID)	NOAEC/ LOAEC	Most Sensitive Endpoint (MRID)
<i>Avian</i>				
Northern bobwhite <i>Colinus virginianus</i>	>5,200	Practically non-toxic (44373507)	N/A	N/A
Mallard <i>Anas platyrhynchos</i>	N/A	N/A	NOAEC = 120 LOAEC = 600 (mg/kg-bw)	Normal hatchlings/ eggs laid (44505005)
<i>Mammal</i>				
Laboratory rat <i>Rattus norvegicus</i>	>5,000	Practically non-toxic (44373512)	LOAEL = 2000 ppm	Ossification (44920801)
<i>Insect</i>				
Honeybee	>20 µg a.i./bee	Practically non-toxic (44373528)	N/A	N/A

Table 7. Summary of most sensitive aquatic and terrestrial plant toxicity data from application of mesotrione, alone and with adjuvants.

	No Adjuvant		AgriDex		Agral 90	
	Most Sensitive Species	NOAEC / EC ₂₅	Most Sensitive Species	NOAEC / EC ₂₅	Most Sensitive Species	NOAEC / EC ₂₅
Terrestrial Plants – Seedling Emergence (lb a.i./A)						
MONOCOT	Onion	0.017 / 0.028	Onion	<0.0023 / 0.017	Onion	0.0023 / 0.016
DICOT	Lettuce	0.0012 / 0.0033	Cabbage ¹	<0.0023 / 0.0026	<i>Study unacceptable</i>	
Terrestrial Plants – Vegetative Vigor (lb a.i./A)						
MONOCOT	Onion	0.0001 / 0.0009	None ²	> 0.23	Onion	0.00695 / 0.014
DICOT	Tomato	0.0001 / 0.00023	Lettuce	0.000086 / 0.00051	Lettuce / Cucumber	0.000257 / 0.0017
Aquatic Plants – Vegetative Vigor (ppb)						
VASCULAR	Duckweed	EC ₅₀ = 18	Duckweed	NOAEC=4.2 EC ₅₀ = 15	Duckweed	NOAEC=3.8 EC ₅₀ = 9.8
NON-VASCULAR	Alga	EC ₅₀ = 1900	Not tested		Not tested	

¹ The selected endpoint used for assessing risk to dicots may not represent the most sensitive situation, because no acceptable study with Agral 90 as an adjuvant is available.

² No monocots exhibited a reduction of ≥25% for any endpoint analyzed.

IV. RISK CHARACTERIZATION

Risk characterization integrates the results of the exposure and ecotoxicity data to evaluate the likelihood of adverse ecological effects. The means of this integration is called the risk quotient method. Risk Quotients (RQs) are calculated by dividing exposure estimates by acute and chronic ecotoxicity values. RQs are then compared to OPP's levels of concern (LOCs).

1. Aquatic Animals

Mesotrione was found to be practically non-toxic to all fish and aquatic invertebrates, with the exception of estuarine/marine invertebrates, to which mesotrione is slightly to moderately toxic. Assessments of previously registered uses have all found that potential risk to aquatic animals was well below LOCs. Even at the increased application rate of the soybean EUP, all categories of risk to aquatic animals result in RQs of <<0.01. For acute risk, the highest peak EEC (25.1 ug a.i./L) compared to the most sensitive endpoint for all aquatic animals (3300 ug a.i./L, EC₅₀ for mysid shrimp) leads to an RQ of 0.008. For chronic risk, the highest 60-day EEC (19.1 ug a.i./L) compared to the most sensitive endpoint for all aquatic animals (11,000 ug a.i./L, NOAEC for the fathead minnow) leads to an RQ of 0.002. Therefore, the RQs remain well below the LOC (0.05) and risk to aquatic animals from the proposed new uses is presumed to be minimal.

2. Aquatic Plants

RQs for aquatic plants have been calculated for the proposed new uses based on Tier II aquatic EECs and are presented in **Table 8**. For both proposed uses on soybeans, the RQs for non-vascular plants remain below the LOC and there is no new conclusion of risk. However, LOC exceedances for both uses indicate that they lead to potential risk to endangered species of aquatic vascular plants. For aquatic vascular plants, sugarcane is the only currently registered use that exceeds the LOC. Although the proposed Section 3 New Use application rate of 0.188 lb a.i./A is the same as the lowest of currently registered uses, the environmental conditions under which soybeans are grown can lead to higher runoff and so to higher surface water EECs than other uses at this rate. The EECs from this application rate are still not high enough to lead to RQs that exceed the non-endangered LOC for vascular plants, but the higher EUP application rate does exceed for that category as well.

Table 8. Acute Risk RQ Values for aquatic plants exposed to mesotrione.

USE	Peak EEC (ppb)	VASCULAR ¹		NON-VASCULAR ²
		Endangered Species RQ (EEC/NOEC)	Non-End. Species RQ (EEC/EC ₅₀)	Non-End. Species RQ (EEC/EC ₅₀)
Soybean NU	5.1	1.3 *	0.5	< 0.01
Soybean EUP	25.1	6.6 *	2.6 *	0.01
Sugarcane	12.5	3.3 *	1.3 *	< 0.01

¹ Vascular endpoints: NOEC = 3.8, EC₅₀ = 9.8 (Duckweed)

² Non-Vascular endpoint: EC₅₀ = 1900 (Green Alga)

* RQ exceeds the aquatic plant LOC; RQ > 1.0.

3. Terrestrial Animals

Previous assessments of application rates up to 0.50 lb a.i./A have determined that risk to terrestrial animals from these uses are expected to be minimal, given that all acute RQs for birds and mammals were ≤ 0.02 , all chronic RQs for mammals were < 0.01 , and all chronic RQs for birds were ≤ 0.86 . The application rate for the Section 3 New Use on soybeans falls within this previously assessed range so the conclusion of minimal risk to birds and mammals is still valid.

Given the higher application rate proposed for the EUP, additional risks from this use to birds and mammals are considered in this assessment, shown in Table 9 (A & B) Risk to mammals remains minimal, with all acute RQs ≤ 0.03 and all chronic RQs ≤ 0.07 . Due to higher application rates for the EUP, some LOCs for birds are exceeded. For birds in the 20-g size class that feed on short grass, there may be acute risk to endangered species. The dose-based acute RQ for this class is 0.10, equal to the endangered species LOC. No acute dietary toxicity data for birds were located, thus no RQs are presented. Chronic RQs for birds that feed on short grass (RQ = 2.6) or tall grass (RQ = 1.2), or broadleaf plants/small insects (RQ = 1.5), also exceed the LOC of 1. For all other classes of birds, acute and chronic RQs are below LOCs.

Table 9 Terrestrial RQs for EUP (0.075 lb ai/A, applications, 14 day interval)

(A) RQs for Birds

Risk quotients based on Kenaga upper bound EECs	Acute dose-based RQs ¹			Acute dietary-based RQs ¹	Chronic RQs
	20g ^a	100g	1000g	All birds	All birds
Short grass	0.10 ^a	0.04	0.01	ND	2.6 ^c
Tall grass	0.04	0.02	0.01	ND	1.2 ^c
Broadleaf plants/small insects	0.05	0.02	0.01	ND	1.5 ^c
Fruits/pods/seeds/lg insects	0.01	<0.01	<0.01	ND	0.2

^a exceeds acute risk LOC (0.5)

^b exceeds endangered species acute risk LOC (0.1)

^c exceeds chronic risk LOC (1.0)

ND Not determined

(A) RQs for Mammals

Risk Quotients based on Kenaga upper bound EEC	Acute dose-based RQs			Chronic dose-based RQs			Chronic dietary-based RQs
	15 g	35 g	1000 g	15 g	35 g	1000 g	All mammals
Short grass	0.03	0.02	0.01	0.07	0.06	0.03	0.01
Tall grass	0.01	0.01	0.01	0.03	0.03	0.02	<0.01
Broadleaf plants/small insects	0.02	0.01	0.01	0.04	0.03	0.02	<0.01
Fruits/pods/seeds/lg insects	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Seeds (granivores)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	

Honeybee toxicity data indicates that the risk to non-target terrestrial insects is likely to be low.

4. Terrestrial Plants

In the most recent assessment (DP Barcode 335361), risk to terrestrial plants was calculated for ground application at the lowest application rate of 0.188 lb a.i./A. RQs from that assessment are summarized here in **Table 10**, and are based on exposure and toxicity estimates discussed in that earlier document. At this low application rate, RQs for non-listed species ranged from 0.7 to 37 and for listed species, RQs were between 4.9 and 87. All categories had RQs \geq 2.1, above the LOC of 1, except for non-listed monocots in adjacent upland areas exposed to mesotrione in runoff, which had an RQ of 0.7.

The same RQs will apply to the proposed Section 3 New Use on soybeans, which has the same application rate. The higher application rate proposed for the EUP for soybeans will lead to higher RQs for all categories. The EUP annual application rate of 1.5 lb a.i./L is nearly an order of magnitude higher than that represented by the RQs in Table 10, and so for the EUP, the monocot non-listed RQ will also exceed the LOC. Therefore, the EUP for soybeans leads to potential risk for all categories of terrestrial plants, while the Section 3 New Use leads to risk to all categories except for monocots which are not designated as endangered species.

Table 10. RQs for plants in dry and semi-aquatic areas exposed to mesotrione through runoff and/or spray drift.

Application Rate	Plant Type	Listed Status	Dry	Semi-Aquatic	Spray Drift
0.188 lb a.i./A/year	Monocot	non-listed	0.7	6.0	2.1
	Monocot	listed	4.9	42	19
	Dicot	non-listed	4.3	37	9.4
	Dicot	listed	10	87	19

5. Federally Threatened and Endangered Species Concerns

Appendix C contains the lists of endangered species that are potentially at risk from direct or indirect effects. There is a list for each crop site. Note that this is just a list based on a screening level assessment and based on the LOCATES database which associates species with crops if they could occur in the same county. Further refinement would be needed to determine if exposure is likely based on co-occurrence.

a. Action Area

The action area is the area in and around potentially treated sites where the exposure is expected to exceed concern levels for endangered species. In the case of mesotrione, the LOC for terrestrial and vascular aquatic plants is exceeded in areas receiving runoff and drift from treated sites. The distance from the treated field where LOCs might be exceeded has not been calculated in this risk assessment. The action area takes into account the potential for sublethal effects and indirect effects and possible effects to critical habitat.

b. Taxonomic Groups Potentially at Risk

1. Risk Quotients

Risk quotients exceed the LOC for endangered terrestrial plants, vascular aquatic plants, and for the EUP, for birds as well. Birds are surrogates for potential risk to reptiles and terrestrial phase amphibians, therefore these taxonomic groups are not at risk from direct effects. Risk quotients do not exceed acute or chronic LOCs for fish, mammals or aquatic invertebrates. Terrestrial invertebrates are not considered to be at risk, because the mode of action and low toxicity to honey bees. Mesotrione is not expected to affect this taxonomic group directly. The risk to terrestrial and aquatic plants and to birds is based on a screening level assessment. No refinement of exposure or co-occurrence has been conducted to determine the likelihood of adverse effects through direct or indirect effects.

2. Probit Dose Response

Probit analysis was not conducted for this screening level assessment.

3. *Data Related to under-represented Taxa*

No effects data were available beyond those typically obtained for pesticides, including effects data for mammals, birds, fish, invertebrates and plants.

c. *Indirect Effects*

Because of possible direct effects to terrestrial and aquatic plants, other listed species might be at risk of indirect effects, including effects to critical habitat and essential components of the ecosystem.

d. *Critical Habitat*

Any critical habitat near treated sites is potentially at risk through effects to terrestrial or aquatic plants. This assessment does not include a refinement of exposure to determine the probability that concentrations will adversely affect plant communities sufficiently to damage critical habitat. Nor has the co-occurrence of use to critical habitats been determined.

e. *Co-occurrence Analysis*

This assessment has not determined the likelihood that listed species or their critical habitat are near, or might receive runoff or drift from treated sites.

Table 11. Listed species risks associated with direct or indirect effects due to applications of mesotrione to soybeans.

Listed Taxon	Direct Effects	Indirect Effects
Terrestrial and semi-aquatic plants – monocots	Yes	No
Terrestrial and semi-aquatic plants – dicots	Yes	No
Insects	No	Yes, insects might be affected indirectly because of direct effects to terrestrial or aquatic plants
Birds	EUP: Yes New Use: No	Yes birds might be affected indirectly because of direct effects to terrestrial or aquatic plants
Terrestrial phase amphibians	No	Yes amphibians might be affected indirectly because of direct effects to terrestrial or aquatic plants
Reptiles	No	Yes reptiles might be affected indirectly because of direct effects to terrestrial or aquatic plants
Mammals	No	Yes mammals might be affected indirectly because of direct effects to terrestrial or aquatic plants
Aquatic vascular plants	Yes	No
Freshwater fish	No	Yes fish might be affected indirectly because of direct effects to terrestrial or aquatic plants
Aquatic phase amphibians	No	Yes amphibians might be affected indirectly because of direct effects to terrestrial or aquatic plants
Freshwater crustaceans	No	Yes crustaceans might be affected indirectly because of direct effects to terrestrial or aquatic plants
Mollusks	No	Yes mollusks might be affected indirectly because of direct effects to terrestrial or aquatic plants
Marine/estuarine fish	No	Yes estuarine fish might be affected indirectly because of direct effects to terrestrial or aquatic plants
Marine/estuarine crustaceans	No	Yes crustaceans might be affected indirectly because of direct effects to terrestrial or aquatic plants

Note that these potential direct or indirect effects are based on a risk screen. The potential for actual exposure and effects has not been determine through refined exposure analysis or co-occurrence analysis.

Appendix A:

Soybean EUP Projected Distribution

**Table 1. Projected Mesotrione EUP State Distribution
(Callisto Herbicide 4SC; EPA Reg. No. 100-1131)**

	States	Number of Acres	Maximum Amount of Formulated Product (gallons)	Maximum Amount of Active Ingredient (pounds)
2009				
Projected Amount Needed	Hawaii	100	37.5	150
	Iowa	100	37.5	150
	Illinois	100	37.5	150
	Indiana	50	18.75	75
	Missouri	50	18.75	75
	Nebraska	50	18.75	75
	Minnesota	25	9.38	37.5
	Arkansas	50	18.75	75
Total	8 States	525	196.88	787.5

2010				
Projected Amount Needed	Hawaii	100	37.5	150
	Iowa	100	37.5	150
	Illinois	100	37.5	150
	Indiana	50	18.75	75
	Missouri	50	18.75	75
	Nebraska	50	18.75	75
	Ohio	50	18.75	75
	Pennsylvania	20	7.5	30
	Minnesota	50	18.75	75
	Wisconsin	50	18.75	75
	South Dakota	25	9.38	37.5
	North Dakota	25	9.38	37.5
	Mississippi	25	9.38	37.5
	Arkansas	50	18.75	75
	Tennessee	25	9.38	37.5
	Georgia	25	9.38	37.5
	Alabama	25	9.38	37.5
	South Carolina	25	9.38	37.5
	North Carolina	50	18.75	75
	Kansas	25	9.38	37.5
	Louisiana	25	9.38	37.5
	Kentucky	25	9.38	37.5
	Florida	100	37.5	150
Puerto Rico	50	18.75	37.5	
Total	23 states & PR	1120	420	1680
2011				
Projected Amount Needed	Hawaii	150	56.25	225
	Iowa	200	75	300
	Illinois	200	75	300
	Indiana	50	18.75	75
	Missouri	50	18.75	75
	Nebraska	50	18.75	75
	Ohio	50	18.75	75
	Pennsylvania	20	7.5	30
	Minnesota	50	18.75	75
	Wisconsin	50	18.75	75
	South Dakota	25	9.38	37.5
	North Dakota	25	9.38	37.5
	Mississippi	25	9.38	37.5
	Arkansas	50	18.75	75

	Tennessee	25	9.38	37.5
	Georgia	25	9.38	37.5
	Alabama	25	9.38	37.5
	South Carolina	25	9.38	37.5
	North Carolina	50	18.75	75
	Kansas	25	9.38	37.5
	Louisiana	25	9.38	37.5
	Kentucky	25	9.38	37.5
	Florida	100	37.5	150
	Puerto Rico	100	37.5	150
Total	23 States & PR	1420	532.5	2130
2012				
Projected Amount Needed 12 13 10 15 11 15 7 8 2	Hawaii ✓	250	93.75	375
	Iowa ✓	500	187.5	750
	Illinois ✓	500	187.5	750
	Indiana ✓	50	18.75	75
	Missouri ✓	100	37.5	150
	Nebraska ✓	100	37.5	150
	Ohio ✓	50	18.75	75
	Pennsylvania ✓	20	7.5	30
	Minnesota ✓	100	37.5	150
	Wisconsin ✓	50	18.75	75
	South Dakota ✓	50	18.75	75
	North Dakota ✓	50	18.75	75
	Mississippi ✓	25	9.38	37.5
	Arkansas ✓	100	18.75	75
	Tennessee ✓	25	9.38	37.5
	Georgia ✓	25	9.38	37.5
	Alabama ✓	25	9.38	37.5
	South Carolina ✓	25	9.38	37.5
	North Carolina ✓	50	18.75	75
	Kansas ✓	25	9.38	37.5
	Louisiana ✓	25	9.38	37.5
	Kentucky ✓	25	9.38	37.5
	Florida ✓	100	37.5	150
Puerto Rico ✓	200	75	300	
Total	23 States & PR	2470	926.3	3705
Overall Total, 2009-2012		5535	2075.8	8303

Appendix B:

PRZM/EXAMS Modeling Outputs

Soybean EUP (1.5 lb a.i./A/yr)

stored as soy_EUP.out

Chemical: mesotrione

modified Tuesday, 29 May 2007 at
12:58:06

PRZM environment: MSsoybeanSTD.txt

EXAMS environment: pond298.exv

modified Thuday, 29 August 2002 at 15:33:30
modified Wedday, 3 July 2002 at
08:05:46

Metfile: w03940.dvf

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	14.66	14.29	12.94	11.04	9.309	2.884
1962	8.053	7.88	7.245	5.686	4.772	1.527
1963	2.905	2.829	2.64	2.39	2.176	0.6959
1964	24.03	23.46	20.97	19.25	16.97	5.254
1965	22.19	21.91	19.42	15.57	13.9	4.431
1966	8.575	8.394	7.776	6.638	5.789	1.856
1967	4.132	3.996	3.582	3.314	2.86	0.9415
1968	10.03	9.749	8.866	6.858	5.828	1.855
1969	6.197	6.02	5.492	4.939	4.283	1.383
1970	14.66	14.48	13.32	10.82	9.344	2.88
1971	12.37	12.21	11.51	10.25	9.283	2.994
1972	11.58	11.31	10.83	9.212	7.789	2.37
1973	6.9	6.734	6.36	5.622	4.732	1.517
1974	7.658	7.445	6.684	4.961	4.249	1.426
1975	5.287	5.17	4.934	4.434	3.771	1.175
1976	25.26	24.62	21.84	18.17	15.67	5.005
1977	20.9	20.52	19	17.68	15.17	4.603
1978	4.932	4.79	4.447	4.222	3.653	1.162
1979	18.97	18.45	17.55	16.21	14.48	4.682
1980	28.12	27.53	25.93	22.03	18.77	5.672
1981	12.89	12.7	11.59	10.48	8.926	2.755
1982	15.14	14.79	13.51	11.12	9.717	3.008
1983	29.29	28.73	26.26	23.58	21.22	6.794
1984	11.97	11.7	10.8	10.13	8.807	2.789
1985	3.426	3.326	3.099	2.503	2.255	0.7409
1986	10.37	10.13	9.289	7.411	6.128	1.848
1987	14.7	14.39	13.51	10.89	8.966	2.74
1988	11.08	10.76	9.765	7.566	6.174	1.911
1989	10.17	9.936	9.135	7.301	6.516	2.132
1990	10.49	10.24	9.677	8.254	7.067	2.165

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.0323	29.29	28.73	26.26	23.58	21.22	6.794
0.0645	28.12	27.53	25.93	22.03	18.77	5.672
0.0968	25.26	24.62	21.84	19.25	16.97	5.254

0.1290	24.03	23.46	20.97	18.17	15.67	5.005
0.1613	22.19	21.91	19.42	17.68	15.17	4.682
0.1935	20.9	20.52	19	16.21	14.48	4.603
0.2258	18.97	18.45	17.55	15.57	13.9	4.431
0.2581	15.14	14.79	13.51	11.12	9.717	3.008
0.2903	14.7	14.48	13.51	11.04	9.344	2.994
0.3226	14.66	14.39	13.32	10.89	9.309	2.884
0.3548	14.66	14.29	12.94	10.82	9.283	2.88
0.3871	12.89	12.7	11.59	10.48	8.966	2.789
0.4194	12.37	12.21	11.51	10.25	8.926	2.755
0.4516	11.97	11.7	10.83	10.13	8.807	2.74
0.4839	11.58	11.31	10.8	9.212	7.789	2.37
0.5161	11.08	10.76	9.765	8.254	7.067	2.165
0.5484	10.49	10.24	9.677	7.566	6.516	2.132
0.5806	10.37	10.13	9.289	7.411	6.174	1.911
0.6129	10.17	9.936	9.135	7.301	6.128	1.856
0.6452	10.03	9.749	8.866	6.858	5.828	1.855
0.6774	8.575	8.394	7.776	6.638	5.789	1.848
0.7097	8.053	7.88	7.245	5.686	4.772	1.527
0.7419	7.658	7.445	6.684	5.622	4.732	1.517
0.7742	6.9	6.734	6.36	4.961	4.283	1.426
0.8065	6.197	6.02	5.492	4.939	4.249	1.383
0.8387	5.287	5.17	4.934	4.434	3.771	1.175
0.8710	4.932	4.79	4.447	4.222	3.653	1.162
0.9032	4.132	3.996	3.582	3.314	2.86	0.9415
0.9355	3.426	3.326	3.099	2.503	2.255	0.7409
0.9677	2.905	2.829	2.64	2.39	2.176	0.6959

0.1	25.137	24.504	21.753	19.142	16.84	5.2291
Average of yearly averages:						2.7065433

Inputs generated by pe5.pl - Novemeber 2006

Data used for this run:

Output File: soy_EUP

Metfile: w03940.dvf

PRZM scenario: MSsoybeanSTD.txt

EXAMS environment file: pond298.exv

Chemical Name: mesotrione

Description	Variable	Name	Value	Units	Comments
Molecular weight	mwt		339	g/mol	
Henry's Law Const.	henry		5.00E-12	atm-m ³ /mol	
Vapor Pressure	vapr		4.30E-08	torr	
Solubility	sol		1600	mg/L	
Kd	Kd			mg/L	
Koc	Koc		113	mg/L	
Photolysis half-life	kdp		84	days	Half-life

Aerobic Aquatic Metabolism	kbacw	34.4	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	12	days	Halfife
Aerobic Soil Metabolism	asm	17.2	days	Halfife
Hydrolysis:	pH 5	0	days	Half-life
Hydrolysis:	pH 7	0	days	Half-life
Hydrolysis:	pH 9	0	days	Half-life
Method:	CAM	1	integer	See PRZM manual
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	0.84	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	3-Jan	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1 app. rate 1	interval apprate	14	days	Set to 0 or delete line for single app.
Interval 2 app. rate 2	interval apprate	14	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
	IPSCND	1		
	UPTKF			
Record 18:	PLVKRT			
	PLDKRT			
	FEXTRC	0.5		
Flag for Index Res. Run	IR	EPA Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	

Soybean Section 3 New Use (0.188 lb a.i./A/yr)

stored as soy_NU.out

Chemical: mesotrione

PRZM environment:

MSsoybeanSTD.txt

modified Tuesday, 29 May 2007 at 12:58:06

EXAMS environment: pond298.exv

modified Thursday, 29 August 2002 at 15:33:30

Metfile: w03940.dvf

modified Wednesday, 3 July 2002 at 08:05:46

Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.7515	0.7324	0.6808	0.5501	0.4586	0.1459
1962	0.7183	0.704	0.654	0.5563	0.4628	0.1401
1963	0.7192	0.7004	0.6282	0.5082	0.4238	0.1269
1964	5.316	5.196	4.821	3.911	3.24	0.9608
1965	3.502	3.457	3.265	2.715	2.263	0.6878
1966	2.129	2.084	1.909	1.551	1.306	0.4057
1967	0.458	0.4466	0.397	0.3159	0.2605	0.08807
1968	0.7534	0.7382	0.6966	0.6037	0.5107	0.1577
1969	0.7016	0.6893	0.6608	0.57	0.4809	0.1468
1970	2.334	2.292	2.181	1.882	1.571	0.4726
1971	2.295	2.248	2.165	1.836	1.563	0.4838
1972	2.889	2.82	2.675	2.166	1.806	0.5427
1973	0.6208	0.6045	0.5674	0.5019	0.4287	0.1324
1974	0.665	0.6516	0.5977	0.492	0.4089	0.127
1975	0.9281	0.9124	0.8648	0.6943	0.5725	0.1747
1976	2.486	2.45	2.303	1.841	1.541	0.4759
1977	5.191	5.096	4.699	3.732	3.076	0.9044
1978	1.159	1.135	1.044	0.8315	0.6956	0.2142
1979	4.539	4.436	4.043	3.265	2.748	0.8492
1980	1.677	1.657	1.528	1.255	1.057	0.3237
1981	2.974	2.91	2.669	2.131	1.763	0.5298
1982	2.48	2.42	2.177	1.923	1.614	0.487
1983	6.117	6	5.554	4.605	3.897	1.197
1984	2.973	2.907	2.652	2.145	1.801	0.5533
1985	0.5187	0.5053	0.4555	0.3832	0.3227	0.1006
1986	1.207	1.18	1.071	0.8588	0.7163	0.2154
1987	1.607	1.573	1.449	1.197	1.006	0.3045
1988	0.4138	0.408	0.3831	0.3408	0.2927	0.09146
1989	1.387	1.355	1.263	1.055	0.8901	0.2734
1990	2.614	2.551	2.34	1.893	1.589	0.4783

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
0.0323	6.117	6	5.554	4.605	3.897	1.197
0.0645	5.316	5.196	4.821	3.911	3.24	0.9608
0.0968	5.191	5.096	4.699	3.732	3.076	0.9044
0.1290	4.539	4.436	4.043	3.265	2.748	0.8492
0.1613	3.502	3.457	3.265	2.715	2.263	0.6878
0.1935	2.974	2.91	2.675	2.166	1.806	0.5533
0.2258	2.973	2.907	2.669	2.145	1.801	0.5427
0.2581	2.889	2.82	2.652	2.131	1.763	0.5298

0.2903	2.614	2.551	2.34	1.923	1.614	0.487
0.3226	2.486	2.45	2.303	1.893	1.589	0.4838
0.3548	2.48	2.42	2.181	1.882	1.571	0.4783
0.3871	2.334	2.292	2.177	1.841	1.563	0.4759
0.4194	2.295	2.248	2.165	1.836	1.541	0.4726
0.4516	2.129	2.084	1.909	1.551	1.306	0.4057
0.4839	1.677	1.657	1.528	1.255	1.057	0.3237
0.5161	1.607	1.573	1.449	1.197	1.006	0.3045
0.5484	1.387	1.355	1.263	1.055	0.8901	0.2734
0.5806	1.207	1.18	1.071	0.8588	0.7163	0.2154
0.6129	1.159	1.135	1.044	0.8315	0.6956	0.2142
0.6452	0.9281	0.9124	0.8648	0.6943	0.5725	0.1747
0.6774	0.7534	0.7382	0.6966	0.6037	0.5107	0.1577
0.7097	0.7515	0.7324	0.6808	0.57	0.4809	0.1468
0.7419	0.7192	0.704	0.6608	0.5563	0.4628	0.1459
0.7742	0.7183	0.7004	0.654	0.5501	0.4586	0.1401
0.8065	0.7016	0.6893	0.6282	0.5082	0.4287	0.1324
0.8387	0.665	0.6516	0.5977	0.5019	0.4238	0.127
0.8710	0.6208	0.6045	0.5674	0.492	0.4089	0.1269
0.9032	0.5187	0.5053	0.4555	0.3832	0.3227	0.1006
0.9355	0.458	0.4466	0.397	0.3408	0.2927	0.09146
0.9677	0.4138	0.408	0.3831	0.3159	0.2605	0.08807
0.1	5.1258	5.03	4.6334	3.6853	3.0432	0.89888

Average of yearly averages:

0.393038

Inputs generated by pe5.pl - Novemeber 2006

Data used for this run:

Output File: soy_NU

Metfile:

w03940.dvf

PRZM scenario:

MSsoybeanSTD.txt

EXAMS environment file:

pond298.exv

Chemical Name:

mesotrione

Description

Variable Name

Value

Units

Comments

Molecular weight

mwt

339

g/mol

Henry's Law Const.

henry

5.00E-12

atm-m³/mol

Vapor Pressure

vapr

4.30E-08

torr

Solubility

sol

1600

mg/L

Kd

Kd

mg/L

Koc

Koc

113

mg/L

Photolysis half-life

kdp

84

days

Half-life

Aerobic Aquatic Metabolism

kbacw

34.4

days

Halfife

Anaerobic Aquatic

Metabolism

kbacs

12

days

Halfife

Aerobic Soil Metabolism

asm

17.2

days

Halfife

Hydrolysis:

pH 5

0

days

Half-life

Hydrolysis:

pH 7

0

days

Half-life

Hydrolysis:

pH 9

0

days

Half-life

Method:

CAM

1

integer

See PRZM manual

Incorporation Depth:

DEPI

0

cm

Application Rate:	TAPP	0.21	kg/ha
Application Efficiency:	APPEFF	0.99	fraction
Spray Drift	DRFT	0.01	fraction of application rate applied to pond
Application Date	Date	3-Jan	dd/mm or dd/mmm or dd-mm or dd-mmm
Record 17:	FILTRA		
	IPSCND	1	
	UPTKF		
Record 18:	PLVKRT		
	PLDKRT		
	FEXTRC	0.5	
Flag for Index Res. Run	IR	EPA Pond	
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)

Appendix C:

Endangered Species potentially at risk from direct effects

Species Listing by State with Use Criteria

Soybeans New Use-Potential Direct Effects

No species were excluded

Minimum of 1 Acre.

All Medium Types Reported

Dicot, Monocot, Ferns, Conf/cycds, Lichen
soybeans for beans, soybeans for beans (irrigated)

Alabama	(14) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Barbara Buttons, Mohr's (<i>Marshallia mohrii</i>)		Threatened	Dicot Terrestrial	No
Bladderpod, Lyrate (<i>Lesquerella lyrata</i>)		Threatened	Dicot Terrestrial	No
Clover, Leafy Prairie (<i>Dalea foliosa</i>)		Endangered	Dicot Terrestrial	No
Harperella (<i>Ptilimnium nodosum</i>)		Endangered	Dicot Freshwater	No
Leather-flower, Alabama (<i>Clematis socialis</i>)		Endangered	Dicot Terrestrial	No
Leather-flower, Morefield's (<i>Clematis morefieldii</i>)		Endangered	Dicot Terrestrial	No
Pitcher-plant, Alabama Canebrake (<i>Sarracenia rubra alabamensis</i>)		Endangered	Dicot Freshwater, Terrestrial	No
Pitcher-plant, Green (<i>Sarracenia oreophila</i>)		Endangered	Dicot Terrestrial, Freshwater	No
Potato-bean, Price's (<i>Apios priceana</i>)		Threatened	Dicot Terrestrial	No
Fern, American hart's-tongue (<i>Asplenium scolopendrium var. americanum</i>)		Threatened	Ferns Terrestrial	No
Quillwort, Louisiana (<i>Isoetes louisianensis</i>)		Endangered	Ferns Freshwater, Terrestrial	No
Grass, Tennessee Yellow-eyed (<i>Xyris tennesseensis</i>)		Endangered	Monocot Terrestrial	No
Trillium, Relict (<i>Trillium reliquum</i>)		Endangered	Monocot Terrestrial	No
Water-plantain, Kral's (<i>Sagittaria secundifolia</i>)		Threatened	Monocot Freshwater	No
Arkansas	(3) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Fruit, Earth (=geocarpon) (<i>Geocarpon minimum</i>)		Threatened	Dicot Terrestrial	No
Harperella (<i>Ptilimnium nodosum</i>)		Endangered	Dicot Freshwater	No
Pondberry (<i>Lindera melissifolia</i>)		Endangered	Dicot Terrestrial	No

12/22/2008 1:32:38 PM Ver. 2.10.3

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Connecticut		(1) species:	<u>Taxa</u>	<u>Critical Habitat</u>
Pogonia, Small Whorled		Threatened	Monocot	No
(<i>Isotria medeoloides</i>)			Terrestrial	
Delaware		(2) species:	<u>Taxa</u>	<u>Critical Habitat</u>
Pink, Swamp		Threatened	Monocot	No
(<i>Helonias bullata</i>)			Terrestrial, Freshwater	
Pogonia, Small Whorled		Threatened	Monocot	No
(<i>Isotria medeoloides</i>)			Terrestrial	
Florida		(26) species:	<u>Taxa</u>	<u>Critical Habitat</u>
Torreya, Florida		Endangered	Conf/cycads	No
(<i>Torreya taxifolia</i>)			Terrestrial	
Blazing Star, Scrub		Endangered	Dicot	No
(<i>Liatris ohlingerae</i>)			Terrestrial	
Bonamia, Florida		Threatened	Dicot	No
(<i>Bonamia grandiflora</i>)			Terrestrial	
Buckwheat, Scrub		Threatened	Dicot	No
(<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i>)			Terrestrial	
Campion, Fringed		Endangered	Dicot	No
(<i>Silene polypetala</i>)			Terrestrial	
Chaffseed, American		Endangered	Dicot	No
(<i>Schwalbea americana</i>)			Terrestrial	
Fringe Tree, Pygmy		Endangered	Dicot	No
(<i>Chionanthus pygmaeus</i>)			Terrestrial	
Gooseberry, Miccosukee		Threatened	Dicot	No
(<i>Ribes echinellum</i>)			Terrestrial	
Harebells, Avon Park		Endangered	Dicot	No
(<i>Crotalaria avonensis</i>)			Terrestrial	
Hypericum, Highlands Scrub		Endangered	Dicot	No
(<i>Hypericum cumulicola</i>)			Terrestrial	
Lupine, Scrub		Endangered	Dicot	No
(<i>Lupinus aridorum</i>)			Terrestrial	
Mint, Longspurred		Endangered	Dicot	No
(<i>Dicerandra cornutissima</i>)			Terrestrial	
Mustard, Carter's		Endangered	Dicot	No
(<i>Warea carteri</i>)			Terrestrial	
Pinkroot, Gentian		Endangered	Dicot	No
(<i>Spigelia gentianoides</i>)			Terrestrial	
Plum, Scrub		Endangered	Dicot	No
(<i>Prunus geniculata</i>)			Terrestrial	
Polygala, Lewton's		Endangered	Dicot	No
(<i>Polygala lewtonii</i>)			Terrestrial	
Rhododendron, Chapman		Endangered	Dicot	No
(<i>Rhododendron chapmanii</i>)			Terrestrial	

Florida

(26) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Rosemary, Short-leaved (<i>Conradina brevifolia</i>)	Endangered	Terrestrial Dicot	No
Sandlace (<i>Polygonella myriophylla</i>)	Endangered	Terrestrial Dicot	No
Warea, Wide-leaf (<i>Warea amplexifolia</i>)	Endangered	Terrestrial Dicot	No
Whitlow-wort, Papery (<i>Paronychia chartacea</i>)	Threatened	Terrestrial Dicot	No
Wings, Pigeon (<i>Ciitoria fragrans</i>)	Threatened	Terrestrial Dicot	No
Wireweed (<i>Polygonella basiramia</i>)	Endangered	Terrestrial Dicot	No
Ziziphus, Florida (<i>Ziziphus celata</i>)	Endangered	Terrestrial Dicot	No
Cladonia, Florida Perforate (<i>Cladonia perforata</i>)	Endangered	Terrestrial Lichen	No
Beargrass, Britton's (<i>Nolina brittoniana</i>)	Endangered	Terrestrial Monocot	No

Georgia

(16) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Torreya, Florida (<i>Torreya taxifolia</i>)	Endangered	Terrestrial Conf/cycds	No
Amphianthus, Little (<i>Amphianthus pusillus</i>)	Threatened	Freshwater Dicot	No
Barbara Buttons, Mohr's (<i>Marshallia mohrii</i>)	Threatened	Terrestrial Dicot	No
Campion, Fringed (<i>Silene polypetala</i>)	Endangered	Terrestrial Dicot	No
Dropwort, Canby's (<i>Oxypolis canbyi</i>)	Endangered	Terrestrial, Freshwater Dicot	No
Pitcher-plant, Green (<i>Sarracenia oreophila</i>)	Endangered	Terrestrial, Freshwater Dicot	No
Pondberry (<i>Lindera melissifolia</i>)	Endangered	Terrestrial Dicot	No
Rattleweed, Hairy (<i>Baptisia arachnifera</i>)	Endangered	Terrestrial Dicot	No
Skullcap, Large-flowered (<i>Scutellaria montana</i>)	Threatened	Terrestrial Dicot	No
Spiraea, Virginia (<i>Spiraea virginiana</i>)	Threatened	Terrestrial Dicot	No
Quillwort, Black-spored (<i>Isoetes melanospora</i>)	Endangered	Vernal pool Ferns	No
Quillwort, Mat-forming (<i>Isoetes tegetiformans</i>)	Endangered	Vernal pool Ferns	No

Georgia

(16) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Grass, Tennessee Yellow-eyed (<i>Xyris tennesseensis</i>)	Endangered	Monocot Terrestrial	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No
Trillium, Relict (<i>Trillium reliquum</i>)	Endangered	Monocot Terrestrial	No
Water-plantain, Kral's (<i>Sagittaria secundifolia</i>)	Threatened	Monocot Freshwater	No

Hawaii

(85) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
A'e (<i>Zanthoxylum hawaiiense</i>) (<i>Zanthoxylum hawaiiense</i>)	Endangered	Dicot Terrestrial	Yes
'Aiea (<i>Nothocestrum peltatum</i>) (<i>Nothocestrum peltatum</i>)	Endangered	Dicot Terrestrial	Yes
'Akoko (<i>Euphorbia haeleeleana</i>) (<i>Euphorbia haeleeleana</i>)	Endangered	Dicot Terrestrial	Yes
Alani (<i>Melicope haupuensis</i>) (<i>Melicope haupuensis</i>)	Endangered	Dicot Terrestrial	Yes
Alani (<i>Melicope knudsenii</i>) (<i>Melicope knudsenii</i>)	Endangered	Dicot Terrestrial	Yes
Alani (<i>Melicope pallida</i>) (<i>Melicope pallida</i>)	Endangered	Dicot Terrestrial	Yes
Alani (<i>Melicope quadrangularis</i>) (<i>Melicope quadrangularis</i>)	Endangered	Dicot Terrestrial	No
'Alsinidendron viscosum (ncn) (<i>Alsinidendron viscosum</i>)	Endangered	Dicot Terrestrial	Yes
Aupaka (<i>Isodendron laurifolium</i>) (<i>Isodendron laurifolium</i>)	Endangered	Dicot Terrestrial	Yes
Aupaka (<i>Isodendron longifolium</i>) (<i>Isodendron longifolium</i>)	Threatened	Dicot Terrestrial	Yes
'Awiwi (<i>Centaurium sebaeoides</i>) (<i>Centaurium sebaeoides</i>)	Endangered	Dicot Terrestrial	Yes
'Awiwi (<i>Hedyotis cookiana</i>) (<i>Hedyotis cookiana</i>)	Endangered	Dicot Terrestrial	Yes
Bonamia menziesii (ncn) (<i>Bonamia menziesii</i>)	Endangered	Dicot Terrestrial	Yes
Chamaesyce Halemanui (ncn) (<i>Chamaesyce halemanui</i>)	Endangered	Dicot Terrestrial	Yes
Cyanea undulata (ncn) (<i>Cyanea undulata</i>)	Endangered	Dicot Terrestrial	Yes
Delissea rhytidisperma (ncn) (<i>Delissea rhytidisperma</i>)	Endangered	Dicot Terrestrial	Yes
Dubautia latifolia (ncn) (<i>Dubautia latifolia</i>)	Endangered	Dicot Terrestrial	Yes

Hawaii

(85) species:

			<u>Taxa</u>	<u>Critical Habitat</u>
Dubautia pauciflora (ncn)	Endangered		Dicot	Yes
(<i>Dubautia pauciflora</i>)		Terrestrial		
Gouania meyenii (ncn)	Endangered		Dicot	Yes
(<i>Gouania meyenii</i>)		Terrestrial		
Haha (Cyanea asarifolia)	Endangered		Dicot	Yes
(<i>Cyanea asarifolia</i>)		Terrestrial		
Haha (Cyanea recta)	Threatened		Dicot	Yes
(<i>Cyanea recta</i>)		Terrestrial		
Haha (Cyanea remyi)	Endangered		Dicot	Yes
(<i>Cyanea remyi</i>)		Terrestrial		
Ha'iwale (Cyrtandra limahuliensis)	Threatened		Dicot	Yes
(<i>Cyrtandra limahuliensis</i>)		Terrestrial		
Hau Kauhiwi (Hibiscadelphus woodii)	Endangered		Dicot	Yes
(<i>Hibiscadelphus woodii</i>)		Terrestrial		
Hau Kuahiwi (Hibiscadelphus distans)	Endangered		Dicot	No
(<i>Hibiscadelphus distans</i>)		Terrestrial		
Heau (Exocarpos luteolus)	Endangered		Dicot	Yes
(<i>Exocarpos luteolus</i>)		Terrestrial		
Hedyotis St.-Johnii (ncn)	Endangered		Dicot	Yes
(<i>Hedyotis st.-johnii</i>)		Terrestrial		
Hesperomannia lydgatei (ncn)	Endangered		Dicot	Yes
(<i>Hesperomannia lydgatei</i>)		Terrestrial		
Hibiscus, Clay's	Endangered		Dicot	Yes
(<i>Hibiscus clayi</i>)		Terrestrial		
Iliau (Wilkesia hobdyi)	Endangered		Dicot	Yes
(<i>Wilkesia hobdyi</i>)		Terrestrial		
Kamakahala (Lobelia lydgatei)	Endangered		Dicot	Yes
(<i>Lobelia lydgatei</i>)		Terrestrial		
Kamakahala (Lobelia tinifolia var. wahiawaen)	Endangered		Dicot	Yes
(<i>Lobelia tinifolia var. wahiawaensis</i>)		Terrestrial		
Kaulu (Pteralyxia kauaiensis)	Endangered		Dicot	Yes
(<i>Pteralyxia kauaiensis</i>)		Terrestrial		
Koki'o (Kokia kauaiensis)	Endangered		Dicot	Yes
(<i>Kokia kauaiensis</i>)		Terrestrial		
Koki'o Ke'oke'o (Hibiscus waimeae ssp. hannerae)	Endangered		Dicot	Yes
(<i>Hibiscus waimeae ssp. hannerae</i>)		Terrestrial		
Kolea (Myrsine linearifolia)	Threatened		Dicot	Yes
(<i>Myrsine linearifolia</i>)		Terrestrial		
Kuawawaenuhu (Alsinidendron lychnoides)	Endangered		Dicot	Yes
(<i>Alsinidendron lychnoides</i>)		Terrestrial		
Laukahi Kuahiwi (Plantago princeps)	Endangered		Dicot	Yes
(<i>Plantago princeps</i>)		Terrestrial		

Hawaii

(85) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Laulihilihi (<i>Schiedea stellarioides</i>)	Endangered	Dicot	Yes
(<i>Schiedea stellarioides</i>)		Terrestrial	
Lobelia niihauensis (ncn)	Endangered	Dicot	Yes
(<i>Lobelia niihauensis</i>)		Terrestrial	
Lysimachia filifolia (ncn)	Endangered	Dicot	Yes
(<i>Lysimachia filifolia</i>)		Terrestrial	
Mahoe (<i>Alectryon macrococcus</i>)	Endangered	Dicot	Yes
(<i>Alectryon macrococcus</i>)		Terrestrial	
Makou (<i>Peucedanum sandwicense</i>)	Threatened	Dicot	Yes
(<i>Peucedanum sandwicense</i>)		Terrestrial	
Ma'oli'oli (<i>Schiedea apokremnos</i>)	Endangered	Dicot	Yes
(<i>Schiedea apokremnos</i>)		Terrestrial	
Mapele (<i>Cyrtandra cyaneoides</i>)	Endangered	Dicot	Yes
(<i>Cyrtandra cyaneoides</i>)		Terrestrial	
Mehamehame (<i>Flueggea neowawraea</i>)	Endangered	Dicot	Yes
(<i>Flueggea neowawraea</i>)		Terrestrial	
Munroidendron racemosum (ncn)	Endangered	Dicot	Yes
(<i>Munroidendron racemosum</i>)		Terrestrial	
Nani Wai'ale'ale (<i>Viola kauaensis</i> var. <i>wahiawaensis</i>)	Endangered	Dicot	Yes
(<i>Viola kauaensis</i> var. <i>wahiawaensis</i>)		Terrestrial	
Nehe (<i>Lipochaeta fauriei</i>)	Endangered	Dicot	Yes
(<i>Lipochaeta fauriei</i>)		Terrestrial	
Nehe (<i>Lipochaeta micrantha</i>)	Endangered	Dicot	Yes
(<i>Lipochaeta micrantha</i>)		Terrestrial	
Nehe (<i>Lipochaeta waimeaensis</i>)	Endangered	Dicot	Yes
(<i>Lipochaeta waimeaensis</i>)		Terrestrial	
'Oha (<i>Delissea rivularis</i>)	Endangered	Dicot	Yes
(<i>Delissea rivularis</i>)		Terrestrial	
'Ohai (<i>Sesbania tomentosa</i>)	Endangered	Dicot	Yes
(<i>Sesbania tomentosa</i>)		Terrestrial	
'Olulu (<i>Brighamia insignis</i>)	Endangered	Dicot	Yes
(<i>Brighamia insignis</i>)		Terrestrial	
Phyllostegia knudsenii (ncn)	Endangered	Dicot	Yes
(<i>Phyllostegia knudsenii</i>)		Terrestrial	
Phyllostegia waimeae (ncn)	Endangered	Dicot	Yes
(<i>Phyllostegia waimeae</i>)		Terrestrial	
Phyllostegia wawrana (ncn)	Endangered	Dicot	Yes
(<i>Phyllostegia wawrana</i>)		Terrestrial	
Popolo 'Aiakeakua (<i>Solanum sandwicense</i>)	Endangered	Dicot	Yes
(<i>Solanum sandwicense</i>)		Terrestrial	
Remya kauaiensis (ncn)	Endangered	Dicot	Yes
(<i>Remya kauaiensis</i>)		Terrestrial	

Hawaii

(85) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Remya montgomeryi (ncn) (<i>Remya montgomeryi</i>)	Endangered	Dicot Terrestrial	Yes
Schiedea helleri (ncn) (<i>Schiedea helleri</i>)	Endangered	Dicot Terrestrial	Yes
Schiedea kauaiensis (ncn) (<i>Schiedea kauaiensis</i>)	Endangered	Dicot Terrestrial	Yes
Schiedea membranacea (ncn) (<i>Schiedea membranacea</i>)	Endangered	Dicot Terrestrial	Yes
Schiedea nuttallii (ncn) (<i>Schiedea nuttallii</i>)	Endangered	Dicot Terrestrial	Yes
Schiedea spergulina var. leiopoda (ncn) (<i>Schiedea spergulina</i> var. <i>leiopoda</i>)	Endangered	Dicot Terrestrial	Yes
Schiedea spergulina var. spergulina (ncn) (<i>Schiedea spergulina</i> var. <i>spergulina</i>)	Threatened	Dicot Terrestrial	Yes
Silene lanceolata (ncn) (<i>Silene lanceolata</i>)	Endangered	Dicot Terrestrial	Yes
Spermolepis hawaiiensis (ncn) (<i>Spermolepis hawaiiensis</i>)	Endangered	Dicot Terrestrial	Yes
Stenogyne campanulata (ncn) (<i>Stenogyne campanulata</i>)	Endangered	Dicot Terrestrial	Yes
Vigna o-wahuensis (ncn) (<i>Vigna o-wahuensis</i>)	Endangered	Dicot Terrestrial	Yes
Viola helenae (ncn) (<i>Viola helenae</i>)	Endangered	Dicot Terrestrial	Yes
Xylosma crenatum (ncn) (<i>Xylosma crenatum</i>)	Endangered	Dicot Terrestrial	Yes
Diellia pallida (ncn) (<i>Diellia pallida</i>)	Endangered	Ferns Terrestrial	Yes
Fern, Pendant Kihī (Adenophorus periens) (<i>Adenophorus periens</i>)	Endangered	Ferns Terrestrial	Yes
Bluegrass, Hawaiian (<i>Poa sandvicensis</i>)	Endangered	Monocot Terrestrial	Yes
Bluegrass, Mann's (Poa mannii) (<i>Poa mannii</i>)	Endangered	Monocot Terrestrial	Yes
Hilo Ischaemum (Ischaemum byrone) (<i>Ischaemum byrone</i>)	Endangered	Monocot Terrestrial	Yes
Lau'ehu (Panicum niihauense) (<i>Panicum niihauense</i>)	Endangered	Monocot Terrestrial	Yes
Lo'ulu (Pritchardia napaliensis) (<i>Pritchardia napaliensis</i>)	Endangered	Monocot Terrestrial	No
Lo'ulu (Pritchardia viscosa) (<i>Pritchardia viscosa</i>)	Endangered	Monocot Terrestrial	No

Hawaii	(85) species:		Taxa	Critical Habitat
Mariscus pennatiformis (ncn)		Endangered	Monocot	Yes
(<i>Mariscus pennatiformis</i>)			Terrestrial	
Platanthera holochila (ncn)		Endangered	Monocot	Yes
(<i>Platanthera holochila</i>)			Terrestrial	
Poa siphonoglossa (ncn)		Endangered	Monocot	Yes
(<i>Poa siphonoglossa</i>)			Terrestrial	
Pu'uka'a (Cyperus trachysanthos)		Endangered	Monocot	Yes
(<i>Cyperus trachysanthos</i>)			Terrestrial	
Wahane (Pritchardia aylmer-robinsonii)		Endangered	Monocot	No
(<i>Pritchardia aylmer-robinsonii</i>)			Terrestrial	

Illinois	(9) species:		Taxa	Critical Habitat
Aster, Decurrent False		Threatened	Dicot	No
(<i>Boltonia decurrens</i>)			Terrestrial, Freshwater	
Clover, Leafy Prairie		Endangered	Dicot	No
(<i>Dalea foliosa</i>)			Terrestrial	
Clover, Prairie Bush		Threatened	Dicot	No
(<i>Lespedeza leptostachya</i>)			Terrestrial	
Daisy, Lakeside		Threatened	Dicot	No
(<i>Hymenoxys herbacea</i>)			Freshwater	
Milkweed, Mead's		Threatened	Dicot	No
(<i>Asclepias meadii</i>)			Terrestrial	
Potato-bean, Price's		Threatened	Dicot	No
(<i>Apios priceana</i>)			Terrestrial	
Thistle, Pitcher's		Threatened	Dicot	No
(<i>Cirsium pitcheri</i>)			Terrestrial	
Orchid, Eastern Prairie Fringed		Threatened	Monocot	No
(<i>Platanthera leucophaea</i>)			Terrestrial	
Pogonia, Small Whorled		Threatened	Monocot	No
(<i>Isotria medeoloides</i>)			Terrestrial	

Indiana	(5) species:		Taxa	Critical Habitat
Clover, Running Buffalo		Endangered	Dicot	No
(<i>Trifolium stoloniferum</i>)			Terrestrial	
Goldenrod, Short's		Endangered	Dicot	No
(<i>Solidago shortii</i>)			Terrestrial	
Milkweed, Mead's		Threatened	Dicot	No
(<i>Asclepias meadii</i>)			Terrestrial	
Thistle, Pitcher's		Threatened	Dicot	No
(<i>Cirsium pitcheri</i>)			Terrestrial	
Orchid, Eastern Prairie Fringed		Threatened	Monocot	No
(<i>Platanthera leucophaea</i>)			Terrestrial	

Iowa	(6) species:		Taxa	Critical Habitat
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Iowa (6) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Clover, Prairie Bush (<i>Lespedeza leptostachya</i>)	Threatened	Terrestrial Dicot	No
Milkweed, Mead's (<i>Asclepias meadii</i>)	Threatened	Terrestrial Dicot	No
Monkshood, Northern Wild (<i>Aconitum noveboracense</i>)	Threatened	Terrestrial Dicot	No
Fern, American hart's-tongue (<i>Asplenium scolopendrium</i> var. <i>americanum</i>)	Threatened	Terrestrial Ferns	No
Orchid, Eastern Prairie Fringed (<i>Platanthera leucophaea</i>)	Threatened	Terrestrial Monocot	No
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Terrestrial Monocot	No
Kansas (2) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Milkweed, Mead's (<i>Asclepias meadii</i>)	Threatened	Terrestrial Dicot	No
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Terrestrial Monocot	No
Kentucky (10) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Chaffseed, American (<i>Schwalbea americana</i>)	Endangered	Terrestrial Dicot	No
Clover, Running Buffalo (<i>Trifolium stoloniferum</i>)	Endangered	Terrestrial Dicot	No
Goldenrod, Short's (<i>Solidago shortii</i>)	Endangered	Terrestrial Dicot	No
Goldenrod, White-haired (<i>Solidago albopilosa</i>)	Threatened	Terrestrial Dicot	No
Potato-bean, Price's (<i>Apios priceana</i>)	Threatened	Terrestrial Dicot	No
Rock-cress, Large (=Braun's) (<i>Arabis perstellata</i> E. L. Braun var. <i>ampla</i> Rollins)	Endangered	Terrestrial Dicot	Yes
Rock-cress, Small (<i>Arabis perstellata</i> E. L. Braun var. <i>perstellata</i> Fernald)	Endangered	Terrestrial Dicot	Yes
Rosemary, Cumberland (<i>Conradina verticillata</i>)	Threatened	Terrestrial Dicot	No
Sandwort, Cumberland (<i>Arenaria cumberlandensis</i>)	Endangered	Terrestrial Dicot	No
Spiraea, Virginia (<i>Spiraea virginiana</i>)	Threatened	Terrestrial Dicot	No
Louisiana (2) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Chaffseed, American (<i>Schwalbea americana</i>)	Endangered	Terrestrial Dicot	No

Louisiana (2) species:
 Fruit, Earth (=geocarpon) Threatened Taxa Critical Habitat
 (*Geocarpon minimum*) Terrestrial Dicot No

Maine (3) species:
 Lousewort, Furbish Endangered Taxa Critical Habitat
 (*Pedicularis furbishiae*) Terrestrial Dicot No
 Orchid, Eastern Prairie Fringed Threatened Monocot No
 (*Platanthera leucophaea*) Terrestrial
 Pogonia, Small Whorled Threatened Monocot No
 (*Isotria medeoloides*) Terrestrial

Maryland (6) species:
 Dropwort, Canby's Endangered Taxa Critical Habitat
 (*Oxypolis canbyi*) Terrestrial, Freshwater Dicot No
 Gerardia, Sandplain Endangered Dicot No
 (*Agalinis acuta*) Terrestrial
 Harperella Endangered Dicot No
 (*Ptilimnium nodosum*) Freshwater
 Joint-vetch, Sensitive Threatened Dicot No
 (*Aeschynomene virginica*) Terrestrial, Brackish
 Bulrush, Northeastern (=Barbed Bristle) Endangered Monocot No
 (*Scirpus ancistrochaetus*) Terrestrial, Freshwater
 Pink, Swamp Threatened Monocot No
 (*Helonias bullata*) Terrestrial, Freshwater

Massachusetts (1) species:
 Pogonia, Small Whorled Threatened Taxa Critical Habitat
 (*Isotria medeoloides*) Monocot No
 Terrestrial

Michigan (6) species:
 Goldenrod, Houghton's Threatened Taxa Critical Habitat
 (*Solidago houghtonii*) Terrestrial Dicot No
 Monkey-flower, Michigan Endangered Dicot No
 (*Mimulus glabratus var. michiganensis*) Terrestrial, Freshwater
 Thistle, Pitcher's Threatened Dicot No
 (*Cirsium pitcheri*) Terrestrial
 Iris, Dwarf Lake Threatened Monocot No
 (*Iris lacustris*) Terrestrial
 Orchid, Eastern Prairie Fringed Threatened Monocot No
 (*Platanthera leucophaea*) Terrestrial
 Pogonia, Small Whorled Threatened Monocot No
 (*Isotria medeoloides*) Terrestrial

Minnesota (4) species:
 Clover, Prairie Bush Threatened Taxa Critical Habitat
 (*Lespedeza leptostachya*) Dicot No
 Terrestrial

Minnesota (4) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Roseroot, Leedy's (<i>Sedum integrifolium</i> ssp. <i>leedyi</i>)	Threatened	Dicot Terrestrial	No
Lily, Minnesota Trout (<i>Erythronium propullans</i>)	Endangered	Monocot Terrestrial	No
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Monocot Terrestrial	No
Mississippi (3) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Pondberry (<i>Lindera melissifolia</i>)	Endangered	Dicot Terrestrial	No
Potato-bean, Price's (<i>Apios priceana</i>)	Threatened	Dicot Terrestrial	No
Quillwort, Louisiana (<i>Isoetes louisianensis</i>)	Endangered	Ferns Freshwater, Terrestrial	No
Missouri (8) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Aster, Decurrent False (<i>Boltonia decurrens</i>)	Threatened	Dicot Terrestrial, Freshwater	No
Bladderpod, Missouri (<i>Lesquerella filiformis</i>)	Threatened	Dicot Terrestrial	No
Clover, Running Buffalo (<i>Trifolium stoloniferum</i>)	Endangered	Dicot Terrestrial	No
Fruit, Earth (=geocarpon) (<i>Geocarpon minimum</i>)	Threatened	Dicot Terrestrial	No
Milkweed, Mead's (<i>Asclepias meadii</i>)	Threatened	Dicot Terrestrial	No
Pondberry (<i>Lindera melissifolia</i>)	Endangered	Dicot Terrestrial	No
Sneezeweed, Virginia (<i>Helenium virginicum</i>)	Threatened	Dicot Vernal pool	No
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Monocot Terrestrial	No
Nebraska (2) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Penstemon, Blowout (<i>Penstemon haydenii</i>)	Endangered	Dicot Terrestrial	No
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Monocot Terrestrial	No
New Jersey (5) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Chaffseed, American (<i>Schwalbea americana</i>)	Endangered	Dicot Terrestrial	No
Joint-vetch, Sensitive (<i>Aeschynomene virginica</i>)	Threatened	Dicot Terrestrial, Brackish	No
Beaked-rush, Knieskern's (<i>Rhynchospora knieskernii</i>)	Threatened	Monocot Terrestrial	No

New Jersey (5) species:		Taxa	Critical Habitat
Pink, Swamp (<i>Helonias bullata</i>)	Threatened	Monocot Terrestrial, Freshwater	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No
New York (6) species:		Taxa	Critical Habitat
Amaranth, Seabeach (<i>Amaranthus pumilus</i>)	Threatened	Dicot Coastal (neritic)	No
Gerardia, Sandplain (<i>Agalinis acuta</i>)	Endangered	Dicot Terrestrial	No
Monkshood, Northern Wild (<i>Aconitum noveboracense</i>)	Threatened	Dicot Terrestrial	No
Roseroot, Leedy's (<i>Sedum integrifolium ssp. leedyi</i>)	Threatened	Dicot Terrestrial	No
Fern, American hart's-tongue (<i>Asplenium scolopendrium var. americanum</i>)	Threatened	Ferns Terrestrial	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No
North Carolina (26) species:		Taxa	Critical Habitat
Amaranth, Seabeach (<i>Amaranthus pumilus</i>)	Threatened	Dicot Coastal (neritic)	No
Avens, Spreading (<i>Geum radiatum</i>)	Endangered	Dicot Terrestrial	No
Bittercress, Small-anthered (<i>Cardamine micranthera</i>)	Endangered	Dicot Terrestrial	No
Blazing Star, Heller's (<i>Liatris helleri</i>)	Threatened	Dicot Terrestrial	No
Chaffseed, American (<i>Schwalbea americana</i>)	Endangered	Dicot Terrestrial	No
Coneflower, Smooth (<i>Echinacea laevigata</i>)	Endangered	Dicot Terrestrial	No
Dropwort, Canby's (<i>Oxypolis canbyi</i>)	Endangered	Dicot Terrestrial, Freshwater	No
Goldenrod, Blue Ridge (<i>Solidago spithamea</i>)	Threatened	Dicot Terrestrial	No
Harperella (<i>Ptilimnium nodosum</i>)	Endangered	Dicot Freshwater	No
Heartleaf, Dwarf-flowered (<i>Hexastylis naniflora</i>)	Threatened	Dicot Terrestrial	No
Heather, Mountain Golden (<i>Hudsonia montana</i>)	Threatened	Dicot Terrestrial	Yes
Joint-vetch, Sensitive (<i>Aeschynomene virginica</i>)	Threatened	Dicot Terrestrial, Brackish	No

North Carolina (26) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Loosestrife, Rough-leaved (<i>Lysimachia asperulaefolia</i>)	Endangered	Dicot Terrestrial	No
Meadowrue, Cooley's (<i>Thalictrum cooleyi</i>)	Endangered	Dicot Terrestrial	No
Pitcher-plant, Green (<i>Sarracenia oreophila</i>)	Endangered	Dicot Terrestrial, Freshwater	No
Pitcher-plant, Mountain Sweet (<i>Sarracenia rubra ssp. jonesii</i>)	Endangered	Dicot Freshwater, Terrestrial	No
Pondberry (<i>Lindera melissifolia</i>)	Endangered	Dicot Terrestrial	No
Spiraea, Virginia (<i>Spiraea virginiana</i>)	Threatened	Dicot Terrestrial	No
Sumac, Michaux's (<i>Rhus michauxii</i>)	Endangered	Dicot Terrestrial	No
Sunflower, Schweinitz's (<i>Helianthus schweinitzii</i>)	Endangered	Dicot Terrestrial	No
Lichen, Rock Gnome (<i>Gymnoderma lineare</i>)	Endangered	Lichen Terrestrial	No
Arrowhead, Bunched (<i>Sagittaria fasciculata</i>)	Endangered	Monocot Freshwater	No
Irisette, White (<i>Sisyrinchium dichotomum</i>)	Endangered	Monocot Terrestrial	No
Pink, Swamp (<i>Helonias bullata</i>)	Threatened	Monocot Terrestrial, Freshwater	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No
Sedge, Golden (<i>Carex lutea</i>)	Endangered	Monocot Terrestrial	No

North Dakota (1) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Monocot Terrestrial	No

Ohio (6) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Clover, Running Buffalo (<i>Trifolium stoloniferum</i>)	Endangered	Dicot Terrestrial	No
Daisy, Lakeside (<i>Hymenoxys herbacea</i>)	Threatened	Dicot Freshwater	No
Monkshood, Northern Wild (<i>Aconitum noveboracense</i>)	Threatened	Dicot Terrestrial	No
Spiraea, Virginia (<i>Spiraea virginiana</i>)	Threatened	Dicot Terrestrial	No
Orchid, Eastern Prairie Fringed (<i>Platanthera leucophaea</i>)	Threatened	Monocot Terrestrial	No

Ohio		(6) species:	<u>Taxa</u>	<u>Critical Habitat</u>
Pogonia, Small Whorled	Threatened		Monocot	No
(<i>Isotria medeoloides</i>)			Terrestrial	
Oklahoma		(2) species:	<u>Taxa</u>	<u>Critical Habitat</u>
Orchid, Eastern Prairie Fringed	Threatened		Monocot	No
(<i>Platanthera leucophaea</i>)			Terrestrial	
Orchid, Western Prairie Fringed	Threatened		Monocot	No
(<i>Platanthera praeclara</i>)			Terrestrial	
Pennsylvania		(2) species:	<u>Taxa</u>	<u>Critical Habitat</u>
Bulrush, Northeastern (=Barbed Bristle)	Endangered		Monocot	No
(<i>Scirpus ancistrochaetus</i>)			Terrestrial, Freshwater	
Pogonia, Small Whorled	Threatened		Monocot	No
(<i>Isotria medeoloides</i>)			Terrestrial	
Rhode Island		(1) species:	<u>Taxa</u>	<u>Critical Habitat</u>
Gerardia, Sandplain	Endangered		Dicot	No
(<i>Agalinis acuta</i>)			Terrestrial	
South Carolina		(20) species:	<u>Taxa</u>	<u>Critical Habitat</u>
Amaranth, Seabeach	Threatened		Dicot	No
(<i>Amaranthus pumilus</i>)			Coastal (neritic)	
Amphianthus, Little	Threatened		Dicot	No
(<i>Amphianthus pusillus</i>)			Freshwater	
Chaffseed, American	Endangered		Dicot	No
(<i>Schwalbea americana</i>)			Terrestrial	
Coneflower, Smooth	Endangered		Dicot	No
(<i>Echinacea laevigata</i>)			Terrestrial	
Dropwort, Canby's	Endangered		Dicot	No
(<i>Oxypolis canbyi</i>)			Terrestrial, Freshwater	
Gooseberry, Miccosukee	Threatened		Dicot	No
(<i>Ribes echinellum</i>)			Terrestrial	
Harperella	Endangered		Dicot	No
(<i>Ptilimnium nodosum</i>)			Freshwater	
Heartleaf, Dwarf-flowered	Threatened		Dicot	No
(<i>Hexastylis naniflora</i>)			Terrestrial	
Loosestrife, Rough-leaved	Endangered		Dicot	No
(<i>Lysimachia asperulaefolia</i>)			Terrestrial	
Pitcher-plant, Mountain Sweet	Endangered		Dicot	No
(<i>Sarracenia rubra ssp. jonesii</i>)			Freshwater, Terrestrial	
Pondberry	Endangered		Dicot	No
(<i>Lindera melissifolia</i>)			Terrestrial	
Sunflower, Schweinitz's	Endangered		Dicot	No
(<i>Helianthus schweinitzii</i>)			Terrestrial	
Quillwort, Black-spored	Endangered		Ferns	No
(<i>Isoetes melanospora</i>)			Vernal pool	

South Carolina (20) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Lichen, Rock Gnome (<i>Gymnoderma lineare</i>)	Endangered	Lichen Terrestrial	No
Arrowhead, Bunched (<i>Sagittaria fasciculata</i>)	Endangered	Monocot Freshwater	No
Irissette, White (<i>Sisyrinchium dichotomum</i>)	Endangered	Monocot Terrestrial	No
Pink, Swamp (<i>Helonias bullata</i>)	Threatened	Monocot Terrestrial, Freshwater	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No
Trillium, Persistent (<i>Trillium persistens</i>)	Endangered	Monocot Terrestrial	No
Trillium, Relict (<i>Trillium reliquum</i>)	Endangered	Monocot Terrestrial	No

South Dakota (1) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Monocot Terrestrial	No

Tennessee (20) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Aster, Ruth's Golden (<i>Pityopsis ruthii</i>)	Endangered	Dicot Terrestrial	No
Avens, Spreading (<i>Geum radiatum</i>)	Endangered	Dicot Terrestrial	No
Bladderpod, Spring Creek (<i>Lesquerella perforata</i>)	Endangered	Dicot Floodplain	No
Bluet, Roan Mountain (<i>Hedyotis purpurea var. montana</i>)	Endangered	Dicot Terrestrial	No
Chaffseed, American (<i>Schwalbea americana</i>)	Endangered	Dicot Terrestrial	No
Clover, Leafy Prairie (<i>Dalea foliosa</i>)	Endangered	Dicot Terrestrial	No
Coneflower, Tennessee Purple (<i>Echinacea tennesseensis</i>)	Endangered	Dicot Terrestrial	No
Goldenrod, Blue Ridge (<i>Solidago spithamea</i>)	Threatened	Dicot Terrestrial	No
Ground-plum, Guthrie's (<i>Astragalus bibullatus</i>)	Endangered	Dicot Terrestrial	No
Pitcher-plant, Green (<i>Sarracenia oreophila</i>)	Endangered	Dicot Terrestrial, Freshwater	No
Potato-bean, Price's (<i>Apios priceana</i>)	Threatened	Dicot Terrestrial	No
Rock-cress, Large (=Braun's) (<i>Arabis perstellata</i> E. L. Braun var. <i>ampla</i> Rollins)	Endangered	Dicot Terrestrial	Yes

Tennessee (20) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Rosemary, Cumberland (<i>Conradina verticillata</i>)	Threatened	Dicot Terrestrial	No
Sandwort, Cumberland (<i>Arenaria cumberlandensis</i>)	Endangered	Dicot Terrestrial	No
Skullcap, Large-flowered (<i>Scutellaria montana</i>)	Threatened	Dicot Terrestrial	No
Spiraea, Virginia (<i>Spiraea virginiana</i>)	Threatened	Dicot Terrestrial	No
Fern, American hart's-tongue (<i>Asplenium scoiopedrium</i> var. <i>americanum</i>)	Threatened	Ferns Terrestrial	No
Lichen, Rock Gnome (<i>Gymnoderma lineare</i>)	Endangered	Lichen Terrestrial	No
Grass, Tennessee Yellow-eyed (<i>Xyris tennesseensis</i>)	Endangered	Monocot Terrestrial	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No

Texas (16) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Ambrosia, South Texas (<i>Ambrosia cheiranthifolia</i>)	Endangered	Dicot Terrestrial	No
Ayenia, Texas (<i>Ayenia limitaris</i>)	Endangered	Dicot Terrestrial	No
Bladderpod, Zapata (<i>Lesquerella thamnophila</i>)	Endangered	Dicot Terrestrial	Yes
Cactus, Black Lace (<i>Echinocereus reichenbachii</i> var. <i>albertii</i>)	Endangered	Dicot Terrestrial	No
Cactus, Sneed Pincushion (<i>Coryphantha sneedii</i> var. <i>sneedii</i>)	Endangered	Dicot Terrestrial	No
Cactus, Star (<i>Astrophytum asterias</i>)	Endangered	Dicot Terrestrial	No
Cactus, Tobusch Fishhook (<i>Ancistrocactus tobuschii</i>)	Endangered	Dicot Terrestrial	No
Dawn-flower, Texas Prairie (=Texas Bitterweed) (<i>Hymenoxys texana</i>)	Endangered	Dicot Terrestrial	No
Dogweed, Ashy (<i>Thymophylla tephroleuca</i>)	Endangered	Dicot Terrestrial	No
Frankenia, Johnston's (<i>Frankenia johnstonii</i>)	Endangered	Dicot Terrestrial	No
Manioc, Walker's (<i>Manihot walkerae</i>)	Endangered	Dicot Terrestrial	No
Phlox, Texas Trailing (<i>Phlox nivalis</i> ssp. <i>texensis</i>)	Endangered	Dicot Terrestrial	No
Sand-verbena, Large-fruited (<i>Abronia macrocarpa</i>)	Endangered	Dicot Terrestrial	No

Texas	(16) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Snowbells, Texas (<i>Styrax texanus</i>)		Endangered	Terrestrial Dicot	No
Ladies'-tresses, Navasota (<i>Spiranthes parksii</i>)		Endangered	Terrestrial Monocot	No
Wild-rice, Texas (<i>Zizania texana</i>)		Endangered	Freshwater Monocot	Yes

Vermont	(1) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Milk-vetch, Jesup's (<i>Astragalus robbinsii</i> var. <i>jesupi</i>)		Endangered	Terrestrial Dicot	No

Virginia	(16) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Amaranth, Seabeach (<i>Amaranthus pumilus</i>)		Threatened	Coastal (neritic) Dicot	No
Birch, Virginia Round-leaf (<i>Betula uber</i>)		Threatened	Floodplain Dicot	No
Bittercress, Small-anthered (<i>Cardamine micranthera</i>)		Endangered	Terrestrial Dicot	No
Chaffseed, American (<i>Schwalbea americana</i>)		Endangered	Terrestrial Dicot	No
Coneflower, Smooth (<i>Echinacea laevigata</i>)		Endangered	Terrestrial Dicot	No
Harperella (<i>Ptilimnium nodosum</i>)		Endangered	Freshwater Dicot	No
Joint-vetch, Sensitive (<i>Aeschynomene virginica</i>)		Threatened	Terrestrial, Brackish Dicot	No
Rock-cress, Shale Barren (<i>Arabis serotina</i>)		Endangered	Terrestrial Dicot	No
Sneezeweed, Virginia (<i>Helenium virginicum</i>)		Threatened	Vernal pool Dicot	No
Spiraea, Virginia (<i>Spiraea virginiana</i>)		Threatened	Terrestrial Dicot	No
Sumac, Michaux's (<i>Rhus michauxii</i>)		Endangered	Terrestrial Dicot	No
Sunflower, Schweinitz's (<i>Helianthus schweinitzii</i>)		Endangered	Terrestrial Dicot	No
Bulrush, Northeastern (=Barbed Bristle) (<i>Scirpus ancistrochaetus</i>)		Endangered	Terrestrial, Freshwater Monocot	No
Orchid, Eastern Prairie Fringed (<i>Platanthera leucophaea</i>)		Threatened	Terrestrial Monocot	No
Pink, Swamp (<i>Helonias bullata</i>)		Threatened	Terrestrial, Freshwater Monocot	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)		Threatened	Terrestrial Monocot	No

West Virginia (4) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Clover, Running Buffalo (<i>Trifolium stoloniferum</i>)	Endangered	Dicot Terrestrial	No
Harperella (<i>Ptilimnium nodosum</i>)	Endangered	Dicot Freshwater	No
Rock-cress, Shale Barren (<i>Arabis serotina</i>)	Endangered	Dicot Terrestrial	No
Bulrush, Northeastern (=Barbed Bristle) (<i>Scirpus ancistrochaetus</i>)	Endangered	Monocot Terrestrial, Freshwater	No

Wisconsin (6) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Clover, Prairie Bush (<i>Lespedeza leptostachya</i>)	Threatened	Dicot Terrestrial	No
Locoweed, Fassett's (<i>Oxytropis campestris</i> var. <i>chartacea</i>)	Threatened	Dicot Terrestrial	No
Monkshood, Northern Wild (<i>Aconitum noveboracense</i>)	Threatened	Dicot Terrestrial	No
Thistle, Pitcher's (<i>Cirsium pitcheri</i>)	Threatened	Dicot Terrestrial	No
Iris, Dwarf Lake (<i>Iris lacustris</i>)	Threatened	Monocot Terrestrial	No
Orchid, Eastern Prairie Fringed (<i>Platanthera leucophaea</i>)	Threatened	Monocot Terrestrial	No

No species were selected for exclusion.

Dispersed species included in report.

Species Listing by State with Use Criteria Soybean EUP-Potential Direct Effects

No species were excluded
Minimum of 1 Acre.

All Medium Types Reported

Bird, Dicot, Monocot, Ferns, Conf/cycds, Lichen
soybeans for beans, soybeans for beans (irrigated)

Alabama	(17) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping (<i>Charadrius melodus</i>)	Endangered		Bird Terrestrial	Yes
Stork, Wood (<i>Mycteria americana</i>)	Endangered		Bird Terrestrial	No
Woodpecker, Red-cockaded (<i>Picoides borealis</i>)	Endangered		Bird Terrestrial	No
Barbara Buttons, Mohr's (<i>Marshallia mohrii</i>)	Threatened		Dicot Terrestrial	No
Bladderpod, Lyrate (<i>Lesquerella lyrata</i>)	Threatened		Dicot Terrestrial	No
Clover, Leafy Prairie (<i>Dalea foliosa</i>)	Endangered		Dicot Terrestrial	No
Harperella (<i>Ptilimnium nodosum</i>)	Endangered		Dicot Freshwater	No
Leather-flower, Alabama (<i>Clematis socialis</i>)	Endangered		Dicot Terrestrial	No
Leather-flower, Morefield's (<i>Clematis morefieldii</i>)	Endangered		Dicot Terrestrial	No
Pitcher-plant, Alabama Canebrake (<i>Sarracenia rubra alabamensis</i>)	Endangered		Dicot Freshwater, Terrestrial	No
Pitcher-plant, Green (<i>Sarracenia oreophila</i>)	Endangered		Dicot Terrestrial, Freshwater	No
Potato-bean, Price's (<i>Apios priceana</i>)	Threatened		Dicot Terrestrial	No
Fern, American hart's-tongue (<i>Asplenium scolopendrium var. americanum</i>)	Threatened		Ferns Terrestrial	No
Quillwort, Louisiana (<i>Isoetes louisianensis</i>)	Endangered		Ferns Freshwater, Terrestrial	No
Grass, Tennessee Yellow-eyed (<i>Xyris tennesseensis</i>)	Endangered		Monocot Terrestrial	No
Trillium, Relict (<i>Trillium reliquum</i>)	Endangered		Monocot Terrestrial	No
Water-plantain, Kral's (<i>Sagittaria secundifolia</i>)	Threatened		Monocot Freshwater	No

Arkansas (5) species:

Taxa Critical Habitat

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Arkansas (5) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Tern, Interior (population) Least (<i>Sterna antillarum</i>)	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded (<i>Picoides borealis</i>)	Endangered	Bird Terrestrial	No
Fruit, Earth (=geocarpon) (<i>Geocarpon minimum</i>)	Threatened	Dicot Terrestrial	No
Harperella (<i>Ptilimnium nodosum</i>)	Endangered	Dicot Freshwater	No
Pondberry (<i>Lindera meiissiifolia</i>)	Endangered	Dicot Terrestrial	No

Florida (33) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Caracara, Audubon's Crested (<i>Polyborus plancus audubonii</i>)	Threatened	Bird Terrestrial	No
Kite, Everglade Snail (<i>Rostrhamus sociabilis plumbeus</i>)	Endangered	Bird Terrestrial	Yes
Plover, Piping (<i>Charadrius melodus</i>)	Endangered	Bird Terrestrial	Yes
Scrub-Jay, Florida (<i>Aphelocoma coerulescens</i>)	Threatened	Bird Terrestrial	No
Sparrow, Florida Grasshopper (<i>Ammodramus savannarum floridanus</i>)	Endangered	Bird Terrestrial	No
Stork, Wood (<i>Mycteria americana</i>)	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded (<i>Picoides borealis</i>)	Endangered	Bird Terrestrial	No
Torreya, Florida (<i>Torreya taxifolia</i>)	Endangered	Conf/cycds Terrestrial	No
Blazing Star, Scrub (<i>Liatris ohlingerae</i>)	Endangered	Dicot Terrestrial	No
Bonamia, Florida (<i>Bonamia grandiflora</i>)	Threatened	Dicot Terrestrial	No
Buckwheat, Scrub (<i>Eriogonum longifolium var. gnaphalifolium</i>)	Threatened	Dicot Terrestrial	No
Campion, Fringed (<i>Silene polypetala</i>)	Endangered	Dicot Terrestrial	No
Chaffseed, American (<i>Schwalbea americana</i>)	Endangered	Dicot Terrestrial	No
Fringe Tree, Pygmy (<i>Chionanthus pygmaeus</i>)	Endangered	Dicot Terrestrial	No
Gooseberry, Miccosukee (<i>Ribes echinellum</i>)	Threatened	Dicot Terrestrial	No
Harebells, Avon Park (<i>Crotalaria avonensis</i>)	Endangered	Dicot Terrestrial	No

Florida (33) species:

			<u>Taxa</u>	<u>Critical Habitat</u>
Hypericum, Highlands Scrub (<i>Hypericum cumulicola</i>)	Endangered		Dicot Terrestrial	No
Lupine, Scrub (<i>Lupinus aridorum</i>)	Endangered		Dicot Terrestrial	No
Mint, Longspurred (<i>Dicerandra cornutissima</i>)	Endangered		Dicot Terrestrial	No
Mustard, Carter's (<i>Warea carteri</i>)	Endangered		Dicot Terrestrial	No
Pinkroot, Gentian (<i>Spigelia gentianoides</i>)	Endangered		Dicot Terrestrial	No
Plum, Scrub (<i>Prunus geniculata</i>)	Endangered		Dicot Terrestrial	No
Polygala, Lewton's (<i>Polygala lewtonii</i>)	Endangered		Dicot Terrestrial	No
Rhododendron, Chapman (<i>Rhododendron chapmanii</i>)	Endangered		Dicot Terrestrial	No
Rosemary, Short-leaved (<i>Conradina brevifolia</i>)	Endangered		Dicot Terrestrial	No
Sandlace (<i>Polygonella myriophylla</i>)	Endangered		Dicot Terrestrial	No
Warea, Wide-leaf (<i>Warea amplexifolia</i>)	Endangered		Dicot Terrestrial	No
Whitlow-wort, Papery (<i>Paronychia chartacea</i>)	Threatened		Dicot Terrestrial	No
Wings, Pigeon (<i>Clitoria fragrans</i>)	Threatened		Dicot Terrestrial	No
Wireweed (<i>Polygonella basiramia</i>)	Endangered		Dicot Terrestrial	No
Ziziphus, Florida (<i>Ziziphus celata</i>)	Endangered		Dicot Terrestrial	No
Cladonia, Florida Perforate (<i>Cladonia perforata</i>)	Endangered		Lichen Terrestrial	No
Beargrass, Britton's (<i>Nolina brittoniana</i>)	Endangered		Monocot Terrestrial	No

Georgia (20) species:

			<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping (<i>Charadrius melodus</i>)	Endangered		Bird Terrestrial	Yes
Stork, Wood (<i>Mycteria americana</i>)	Endangered		Bird Terrestrial	No
Warbler (=Wood), Kirtland's (<i>Dendroica kirtlandii</i>)	Endangered		Bird Terrestrial	No
Woodpecker, Red-cockaded (<i>Picoides borealis</i>)	Endangered		Bird Terrestrial	No

Georgia

(20) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Torreya, Florida (<i>Torreya taxifolia</i>)	Endangered	Conf/cycds Terrestrial	No
Amphianthus, Little (<i>Amphianthus pusillus</i>)	Threatened	Dicot Freshwater	No
Barbara Buttons, Mohr's (<i>Marshallia mohrii</i>)	Threatened	Dicot Terrestrial	No
Campion, Fringed (<i>Silene polypetala</i>)	Endangered	Dicot Terrestrial	No
Dropwort, Canby's (<i>Oxypolis canbyi</i>)	Endangered	Dicot Terrestrial, Freshwater	No
Pitcher-plant, Green (<i>Sarracenia oreophila</i>)	Endangered	Dicot Terrestrial, Freshwater	No
Pondberry (<i>Lindera melissifolia</i>)	Endangered	Dicot Terrestrial	No
Rattleweed, Hairy (<i>Baptisia arachnifera</i>)	Endangered	Dicot Terrestrial	No
Skullcap, Large-flowered (<i>Scutellaria montana</i>)	Threatened	Dicot Terrestrial	No
Spiraea, Virginia (<i>Spiraea virginiana</i>)	Threatened	Dicot Terrestrial	No
Quillwort, Black-spored (<i>Isoetes melanospora</i>)	Endangered	Ferns Vernal pool	No
Quillwort, Mat-forming (<i>Isoetes tegetiformans</i>)	Endangered	Ferns Vernal pool	No
Grass, Tennessee Yellow-eyed (<i>Xyris tennesseensis</i>)	Endangered	Monocot Terrestrial	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No
Trillium, Relict (<i>Trillium reliquum</i>)	Endangered	Monocot Terrestrial	No
Water-plantain, Kral's (<i>Sagittaria secundifolia</i>)	Threatened	Monocot Freshwater	No

Hawaii

(98) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
'Akia Loa, Kauai (<i>Hemignathus procerus</i>) (<i>Hemignathus procerus</i>)	Endangered	Bird Terrestrial	No
Coot, Hawaiian (=Alae keo keo) (<i>Fulica americana alai</i>)	Endangered	Bird Terrestrial	No
Duck, Hawaiian (Koloa) (<i>Anas wyvilliana</i>)	Endangered	Bird Freshwater, Terrestrial	No
Goose, Hawaiian (Nene) (<i>Branta (=Nesochen) sandvicensis</i>)	Endangered	Bird Terrestrial, Freshwater	No
Moorhen, Hawaiian Common (<i>Gallinula chloropus sandvicensis</i>)	Endangered	Bird Terrestrial	No

Hawaii

(98) species:

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

Hawaii

(98) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Chamaesyce Halemanui (ncn) (<i>Chamaesyce halemanui</i>)	Endangered	Dicot Terrestrial	Yes
Cyanea undulata (ncn) (<i>Cyanea undulata</i>)	Endangered	Dicot Terrestrial	Yes
Delissea rhytidisperma (ncn) (<i>Delissea rhytidisperma</i>)	Endangered	Dicot Terrestrial	Yes
Dubautia latifolia (ncn) (<i>Dubautia latifolia</i>)	Endangered	Dicot Terrestrial	Yes
Dubautia pauciflora (ncn) (<i>Dubautia pauciflora</i>)	Endangered	Dicot Terrestrial	Yes
Gouania meyenii (ncn) (<i>Gouania meyenii</i>)	Endangered	Dicot Terrestrial	Yes
Haha (Cyanea asarifolia) (<i>Cyanea asarifolia</i>)	Endangered	Dicot Terrestrial	Yes
Haha (Cyanea recta) (<i>Cyanea recta</i>)	Threatened	Dicot Terrestrial	Yes
Haha (Cyanea remyi) (<i>Cyanea remyi</i>)	Endangered	Dicot Terrestrial	Yes
Ha'iwale (Cyrtandra limahuliensis) (<i>Cyrtandra limahuliensis</i>)	Threatened	Dicot Terrestrial	Yes
Hau Kauhiwi (Hibiscadelphus woodii) (<i>Hibiscadelphus woodii</i>)	Endangered	Dicot Terrestrial	Yes
Hau Kuahiwi (Hibiscadelphus distans) (<i>Hibiscadelphus distans</i>)	Endangered	Dicot Terrestrial	No
Heau (Exocarpos luteolus) (<i>Exocarpos luteolus</i>)	Endangered	Dicot Terrestrial	Yes
Hedyotis St.-Johnii (ncn) (<i>Hedyotis st.-johnii</i>)	Endangered	Dicot Terrestrial	Yes
Hesperomannia lydgatei (ncn) (<i>Hesperomannia lydgatei</i>)	Endangered	Dicot Terrestrial	Yes
Hibiscus, Clay's (<i>Hibiscus clayi</i>)	Endangered	Dicot Terrestrial	Yes
Iliau (Wilkesia hobdyi) (<i>Wilkesia hobdyi</i>)	Endangered	Dicot Terrestrial	Yes
Kamakahala (Labordia lydgatei) (<i>Labordia lydgatei</i>)	Endangered	Dicot Terrestrial	Yes
Kamakahala (Labordia tinifolia var. wahiawaen) (<i>Labordia tinifolia var. wahiawaensis</i>)	Endangered	Dicot Terrestrial	Yes
Kaulu (Pteralyxia kauaiensis) (<i>Pteralyxia kauaiensis</i>)	Endangered	Dicot Terrestrial	Yes
Koki'o (Kokia kauaiensis) (<i>Kokia kauaiensis</i>)	Endangered	Dicot Terrestrial	Yes

Hawaii

(98) species:

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

Hawaii

(98) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Phyllostegia waimeae (ncn) (<i>Phyllostegia waimeae</i>)	Endangered	Terrestrial Dicot	Yes
Phyllostegia wawrana (ncn) (<i>Phyllostegia wawrana</i>)	Endangered	Terrestrial Dicot	Yes
Popolo 'Aiakeakua (<i>Solanum sandwicense</i>) (<i>Solanum sandwicense</i>)	Endangered	Terrestrial Dicot	Yes
Remya kauaiensis (ncn) (<i>Remya kauaiensis</i>)	Endangered	Terrestrial Dicot	Yes
Remya montgomeryi (ncn) (<i>Remya montgomeryi</i>)	Endangered	Terrestrial Dicot	Yes
Schiedea helleri (ncn) (<i>Schiedea helleri</i>)	Endangered	Terrestrial Dicot	Yes
Schiedea kauaiensis (ncn) (<i>Schiedea kauaiensis</i>)	Endangered	Terrestrial Dicot	Yes
Schiedea membranacea (ncn) (<i>Schiedea membranacea</i>)	Endangered	Terrestrial Dicot	Yes
Schiedea nuttallii (ncn) (<i>Schiedea nuttallii</i>)	Endangered	Terrestrial Dicot	Yes
Schiedea spergulina var. leiopoda (ncn) (<i>Schiedea spergulina</i> var. <i>leiopoda</i>)	Endangered	Terrestrial Dicot	Yes
Schiedea spergulina var. spergulina (ncn) (<i>Schiedea spergulina</i> var. <i>spergulina</i>)	Threatened	Terrestrial Dicot	Yes
Silene lanceolata (ncn) (<i>Silene lanceolata</i>)	Endangered	Terrestrial Dicot	Yes
Spermolepis hawaiiensis (ncn) (<i>Spermolepis hawaiiensis</i>)	Endangered	Terrestrial Dicot	Yes
Stenogyne campanulata (ncn) (<i>Stenogyne campanulata</i>)	Endangered	Terrestrial Dicot	Yes
Vigna o-wahuensis (ncn) (<i>Vigna o-wahuensis</i>)	Endangered	Terrestrial Dicot	Yes
Viola helenae (ncn) (<i>Viola helenae</i>)	Endangered	Terrestrial Dicot	Yes
Xylosma crenatum (ncn) (<i>Xylosma crenatum</i>)	Endangered	Terrestrial Dicot	Yes
Diellia pallida (ncn) (<i>Diellia pallida</i>)	Endangered	Terrestrial Ferns	Yes
Fern, Pendant Kihī (<i>Adenophorus periens</i>) (<i>Adenophorus periens</i>)	Endangered	Terrestrial Ferns	Yes
Bluegrass, Hawaiian (<i>Poa sandwicensis</i>)	Endangered	Terrestrial Monocot	Yes
Bluegrass, Mann's (<i>Poa mannii</i>) (<i>Poa mannii</i>)	Endangered	Terrestrial Monocot	Yes

Hawaii (98) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Hilo Ischaemum (Ischaemum byrone)	Endangered	Monocot	Yes
(<i>Ischaemum byrone</i>)		Terrestrial	
Lau'ehu (Panicum niihauense)	Endangered	Monocot	Yes
(<i>Panicum niihauense</i>)		Terrestrial	
Lo'ulu (Pritchardia napatensis)	Endangered	Monocot	No
(<i>Pritchardia napatensis</i>)		Terrestrial	
Lo'ulu (Pritchardia viscosa)	Endangered	Monocot	No
(<i>Pritchardia viscosa</i>)		Terrestrial	
Mariscus pennatifomis (ncn)	Endangered	Monocot	Yes
(<i>Mariscus pennatifomis</i>)		Terrestrial	
Platanthera holochila (ncn)	Endangered	Monocot	Yes
(<i>Platanthera holochila</i>)		Terrestrial	
Poa siphonoglossa (ncn)	Endangered	Monocot	Yes
(<i>Poa siphonoglossa</i>)		Terrestrial	
Pu'uka'a (Cyperus trachysanthos)	Endangered	Monocot	Yes
(<i>Cyperus trachysanthos</i>)		Terrestrial	
Wahane (Pritchardia aylmer-robinsonii)	Endangered	Monocot	No
(<i>Pritchardia aylmer-robinsonii</i>)		Terrestrial	

Illinois (11) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping	Endangered	Bird	Yes
(<i>Charadrius melodus</i>)		Terrestrial	
Tern, Interior (population) Least	Endangered	Bird	No
(<i>Sterna antillarum</i>)		Terrestrial	
Aster, Decurrent False	Threatened	Dicot	No
(<i>Boltonia decurrens</i>)		Terrestrial, Freshwater	
Clover, Leafy Prairie	Endangered	Dicot	No
(<i>Dalea foliosa</i>)		Terrestrial	
Clover, Prairie Bush	Threatened	Dicot	No
(<i>Lespedeza leptostachya</i>)		Terrestrial	
Daisy, Lakeside	Threatened	Dicot	No
(<i>Hymenoxys herbacea</i>)		Freshwater	
Milkweed, Mead's	Threatened	Dicot	No
(<i>Asclepias meadii</i>)		Terrestrial	
Potato-bean, Price's	Threatened	Dicot	No
(<i>Apios priceana</i>)		Terrestrial	
Thistle, Pitcher's	Threatened	Dicot	No
(<i>Cirsium pitcheri</i>)		Terrestrial	
Orchid, Eastern Prairie Fringed	Threatened	Monocot	No
(<i>Platanthera leucophaea</i>)		Terrestrial	
Pogonia, Small Whorled	Threatened	Monocot	No
(<i>Isotria medeoloides</i>)		Terrestrial	

Indiana (7) species:

Taxa Critical Habitat

Indiana

(7) species:

			<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping (<i>Charadrius melodus</i>)	Endangered		Bird Terrestrial	Yes
Tern, Interior (population) Least (<i>Sterna antillarum</i>)	Endangered		Bird Terrestrial	No
Clover, Running Buffalo (<i>Trifolium stoloniferum</i>)	Endangered		Dicot Terrestrial	No
Goldenrod, Short's (<i>Solidago shortii</i>)	Endangered		Dicot Terrestrial	No
Milkweed, Mead's (<i>Asclepias meadii</i>)	Threatened		Dicot Terrestrial	No
Thistle, Pitcher's (<i>Cirsium pitcheri</i>)	Threatened		Dicot Terrestrial	No
Orchid, Eastern Prairie Fringed (<i>Platanthera leucophaea</i>)	Threatened		Monocot Terrestrial	No

Iowa

(8) species:

			<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping (<i>Charadrius melodus</i>)	Endangered		Bird Terrestrial	Yes
Tern, Interior (population) Least (<i>Sterna antillarum</i>)	Endangered		Bird Terrestrial	No
Clover, Prairie Bush (<i>Lespedeza leptostachya</i>)	Threatened		Dicot Terrestrial	No
Milkweed, Mead's (<i>Asclepias meadii</i>)	Threatened		Dicot Terrestrial	No
Monkshood, Northern Wild (<i>Aconitum noveboracense</i>)	Threatened		Dicot Terrestrial	No
Fern, American hart's-tongue (<i>Asplenium scolopendrium var. americanum</i>)	Threatened		Ferns Terrestrial	No
Orchid, Eastern Prairie Fringed (<i>Platanthera leucophaea</i>)	Threatened		Monocot Terrestrial	No
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened		Monocot Terrestrial	No

Kansas

(5) species:

			<u>Taxa</u>	<u>Critical Habitat</u>
Crane, Whooping (<i>Grus americana</i>)	Endangered		Bird Terrestrial, Freshwater	Yes
Plover, Piping (<i>Charadrius melodus</i>)	Endangered		Bird Terrestrial	Yes
Tern, Interior (population) Least (<i>Sterna antillarum</i>)	Endangered		Bird Terrestrial	No
Milkweed, Mead's (<i>Asclepias meadii</i>)	Threatened		Dicot Terrestrial	No
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened		Monocot Terrestrial	No

Kentucky

(16) species:

			<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping (<i>Charadrius melodus</i>)	Endangered		Bird	Yes
		Terrestrial		
Tern, Interior (population) Least (<i>Sterna antillarum</i>)	Endangered		Bird	No
		Terrestrial		
Warbler (=Wood), Kirtland's (<i>Dendroica kirtlandii</i>)	Endangered		Bird	No
		Terrestrial		
Warbler, Bachman's (<i>Vermivora bachmanii</i>)	Endangered		Bird	No
		Terrestrial		
Woodpecker, Ivory-billed (<i>Campephilus principalis</i>)	Endangered		Bird	No
		Terrestrial		
Woodpecker, Red-cockaded (<i>Picoides borealis</i>)	Endangered		Bird	No
		Terrestrial		
Chaffseed, American (<i>Schwalbea americana</i>)	Endangered		Dicot	No
		Terrestrial		
Clover, Running Buffalo (<i>Trifolium stoloniferum</i>)	Endangered		Dicot	No
		Terrestrial		
Goldenrod, Short's (<i>Solidago shortii</i>)	Endangered		Dicot	No
		Terrestrial		
Goldenrod, White-haired (<i>Solidago albopilosa</i>)	Threatened		Dicot	No
		Terrestrial		
Potato-bean, Price's (<i>Apios priceana</i>)	Threatened		Dicot	No
		Terrestrial		
Rock-cress, Large (=Braun's) (<i>Arabis perstellata</i> E. L. Braun var. <i>ampla</i> Rollins)	Endangered		Dicot	Yes
		Terrestrial		
Rock-cress, Small (<i>Arabis perstellata</i> E. L. Braun var. <i>perstellata</i> Fernald)	Endangered		Dicot	Yes
		Terrestrial		
Rosemary, Cumberland (<i>Conradina verticillata</i>)	Threatened		Dicot	No
		Terrestrial		
Sandwort, Cumberland (<i>Arenaria cumberlandensis</i>)	Endangered		Dicot	No
		Terrestrial		
Spiraea, Virginia (<i>Spiraea virginiana</i>)	Threatened		Dicot	No
		Terrestrial		

Louisiana

(7) species:

			<u>Taxa</u>	<u>Critical Habitat</u>
Pelican, Brown (<i>Pelecanus occidentalis</i>)	Endangered		Bird	No
		Terrestrial		
Plover, Piping (<i>Charadrius melodus</i>)	Endangered		Bird	Yes
		Terrestrial		
Tern, California Least (<i>Sterna antillarum browni</i>)	Endangered		Bird	No
		Terrestrial		
Tern, Interior (population) Least (<i>Sterna antillarum</i>)	Endangered		Bird	No
		Terrestrial		
Woodpecker, Red-cockaded (<i>Picoides borealis</i>)	Endangered		Bird	No
		Terrestrial		

Louisiana (7) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Chaffseed, American (<i>Schwalbea americana</i>)	Endangered	Dicot Terrestrial	No
Fruit, Earth (=geocarpon) (<i>Geocarpon minimum</i>)	Threatened	Dicot Terrestrial	No
Minnesota (5) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping (<i>Charadrius melodus</i>)	Endangered	Bird Terrestrial	Yes
Clover, Prairie Bush (<i>Lespedeza leptostachya</i>)	Threatened	Dicot Terrestrial	No
Roseroot, Leedy's (<i>Sedum integrifolium ssp. leedyi</i>)	Threatened	Dicot Terrestrial	No
Lily, Minnesota Trout (<i>Erythronium propullans</i>)	Endangered	Monocot Terrestrial	No
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Monocot Terrestrial	No
Mississippi (8) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Crane, Mississippi Sandhill (<i>Grus canadensis pulla</i>)	Endangered	Bird Terrestrial, Freshwater	Yes
Pelican, Brown (<i>Pelecanus occidentalis</i>)	Endangered	Bird Terrestrial	No
Plover, Piping (<i>Charadrius melodus</i>)	Endangered	Bird Terrestrial	Yes
Tern, Interior (population) Least (<i>Sterna antillarum</i>)	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded (<i>Picoides borealis</i>)	Endangered	Bird Terrestrial	No
Pondberry (<i>Lindera melissifolia</i>)	Endangered	Dicot Terrestrial	No
Potato-bean, Price's (<i>Apios priceana</i>)	Threatened	Dicot Terrestrial	No
Quillwort, Louisiana (<i>Isoetes louisianensis</i>)	Endangered	Ferns Freshwater, Terrestrial	No
Missouri (10) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping (<i>Charadrius melodus</i>)	Endangered	Bird Terrestrial	Yes
Tern, Interior (population) Least (<i>Sterna antillarum</i>)	Endangered	Bird Terrestrial	No
Aster, Decurrent False (<i>Boltonia decurrens</i>)	Threatened	Dicot Terrestrial, Freshwater	No
Bladderpod, Missouri (<i>Lesquerella filiformis</i>)	Threatened	Dicot Terrestrial	No

Missouri (10) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Clover, Running Buffalo (<i>Trifolium stoloniferum</i>)	Endangered	Dicot Terrestrial	No
Fruit, Earth (=geocarpon) (<i>Geocarpon minimum</i>)	Threatened	Dicot Terrestrial	No
Milkweed, Mead's (<i>Asclepias meadii</i>)	Threatened	Dicot Terrestrial	No
Pondberry (<i>Lindera melissifolia</i>)	Endangered	Dicot Terrestrial	No
Sneezeweed, Virginia (<i>Helenium virginicum</i>)	Threatened	Dicot Vernal pool	No
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Monocot Terrestrial	No
Nebraska (5) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Crane, Whooping (<i>Grus americana</i>)	Endangered	Bird Terrestrial, Freshwater	Yes
Plover, Piping (<i>Charadrius melodus</i>)	Endangered	Bird Terrestrial	Yes
Tern, Interior (population) Least (<i>Sterna antillarum</i>)	Endangered	Bird Terrestrial	No
Penstemon, Blowout (<i>Penstemon haydenii</i>)	Endangered	Dicot Terrestrial	No
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Monocot Terrestrial	No
North Carolina (30) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping (<i>Charadrius melodus</i>)	Endangered	Bird Terrestrial	Yes
Stork, Wood (<i>Mycteria americana</i>)	Endangered	Bird Terrestrial	No
Tern, Roseate (<i>Sterna dougallii dougallii</i>)	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded (<i>Picoides borealis</i>)	Endangered	Bird Terrestrial	No
Amaranth, Seabeach (<i>Amaranthus pumilus</i>)	Threatened	Dicot Coastal (neritic)	No
Avens, Spreading (<i>Geum radiatum</i>)	Endangered	Dicot Terrestrial	No
Bittercress, Small-anthered (<i>Cardamine micranthera</i>)	Endangered	Dicot Terrestrial	No
Blazing Star, Heller's (<i>Liatris helleri</i>)	Threatened	Dicot Terrestrial	No
Chaffseed, American (<i>Schwalbea americana</i>)	Endangered	Dicot Terrestrial	No

North Carolina (30) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Coneflower, Smooth (<i>Echinacea laevigata</i>)	Endangered	Dicot Terrestrial	No
Dropwort, Canby's (<i>Oxypolis canbyi</i>)	Endangered	Dicot Terrestrial, Freshwater	No
Goldenrod, Blue Ridge (<i>Solidago spithamaea</i>)	Threatened	Dicot Terrestrial	No
Harperella (<i>Ptilimnium nodosum</i>)	Endangered	Dicot Freshwater	No
Heartleaf, Dwarf-flowered (<i>Hexastylis naniflora</i>)	Threatened	Dicot Terrestrial	No
Heather, Mountain Golden (<i>Hudsonia montana</i>)	Threatened	Dicot Terrestrial	Yes
Joint-vetch, Sensitive (<i>Aeschynomene virginica</i>)	Threatened	Dicot Terrestrial, Brackish	No
Loosestrife, Rough-leaved (<i>Lysimachia asperulaefolia</i>)	Endangered	Dicot Terrestrial	No
Meadowrue, Cooley's (<i>Thalictrum cooleyi</i>)	Endangered	Dicot Terrestrial	No
Pitcher-plant, Green (<i>Sarracenia oreophila</i>)	Endangered	Dicot Terrestrial, Freshwater	No
Pitcher-plant, Mountain Sweet (<i>Sarracenia rubra ssp. jonesii</i>)	Endangered	Dicot Freshwater, Terrestrial	No
Pondberry (<i>Lindera melissifolia</i>)	Endangered	Dicot Terrestrial	No
Spiraea, Virginia (<i>Spiraea virginiana</i>)	Threatened	Dicot Terrestrial	No
Sumac, Michaux's (<i>Rhus michauxii</i>)	Endangered	Dicot Terrestrial	No
Sunflower, Schweinitz's (<i>Helianthus schweinitzii</i>)	Endangered	Dicot Terrestrial	No
Lichen, Rock Gnome (<i>Gymnoderma lineare</i>)	Endangered	Lichen Terrestrial	No
Arrowhead, Bunched (<i>Sagittaria fasciculata</i>)	Endangered	Monocot Freshwater	No
Irisette, White (<i>Sisyrinchium dichotomum</i>)	Endangered	Monocot Terrestrial	No
Pink, Swamp (<i>Helonias bullata</i>)	Threatened	Monocot Terrestrial, Freshwater	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No
Sedge, Golden (<i>Carex lutea</i>)	Endangered	Monocot Terrestrial	No

North Dakota (4) species:

Taxa Critical Habitat

North Dakota

(4) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Crane, Whooping (<i>Grus americana</i>)	Endangered	Bird Terrestrial, Freshwater	Yes
Plover, Piping (<i>Charadrius melodus</i>)	Endangered	Bird Terrestrial	Yes
Tern, Interior (population) Least (<i>Sterna antillarum</i>)	Endangered	Bird Terrestrial	No
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Monocot Terrestrial	No

Ohio

(7) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping (<i>Charadrius melodus</i>)	Endangered	Bird Terrestrial	Yes
Clover, Running Buffalo (<i>Trifolium stoloniferum</i>)	Endangered	Dicot Terrestrial	No
Daisy, Lakeside (<i>Hymenoxys herbacea</i>)	Threatened	Dicot Freshwater	No
Monkshood, Northern Wild (<i>Aconitum noveboracense</i>)	Threatened	Dicot Terrestrial	No
Spiraea, Virginia (<i>Spiraea virginiana</i>)	Threatened	Dicot Terrestrial	No
Orchid, Eastern Prairie Fringed (<i>Platanthera leucophaea</i>)	Threatened	Monocot Terrestrial	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No

Pennsylvania

(3) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping (<i>Charadrius melodus</i>)	Endangered	Bird Terrestrial	Yes
Bulrush, Northeastern (=Barbed Bristle) (<i>Scirpus ancistrochaetus</i>)	Endangered	Monocot Terrestrial, Freshwater	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No

South Carolina

(23) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Plover, Piping (<i>Charadrius melodus</i>)	Endangered	Bird Terrestrial	Yes
Stork, Wood (<i>Mycteria americana</i>)	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded (<i>Picoides borealis</i>)	Endangered	Bird Terrestrial	No
Amaranth, Seabeach (<i>Amaranthus pumilus</i>)	Threatened	Dicot Coastal (neritic)	No
Amphianthus, Little (<i>Amphianthus pusillus</i>)	Threatened	Dicot Freshwater	No

South Carolina (23) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Chaffseed, American (<i>Schwalbea americana</i>)	Endangered	Dicot Terrestrial	No
Coneflower, Smooth (<i>Echinacea laevigata</i>)	Endangered	Dicot Terrestrial	No
Dropwort, Canby's (<i>Oxypolis canbyi</i>)	Endangered	Dicot Terrestrial, Freshwater	No
Gooseberry, Miccosukee (<i>Ribes echinellum</i>)	Threatened	Dicot Terrestrial	No
Harperella (<i>Ptilimnium nodosum</i>)	Endangered	Dicot Freshwater	No
Heartleaf, Dwarf-flowered (<i>Hexastylis naniflora</i>)	Threatened	Dicot Terrestrial	No
Loosestrife, Rough-leaved (<i>Lysimachia asperulaefolia</i>)	Endangered	Dicot Terrestrial	No
Pitcher-plant, Mountain Sweet (<i>Sarracenia rubra ssp. jonesii</i>)	Endangered	Dicot Freshwater, Terrestrial	No
Pondberry (<i>Lindera melissifolia</i>)	Endangered	Dicot Terrestrial	No
Sunflower, Schweinitz's (<i>Helianthus schweinitzii</i>)	Endangered	Dicot Terrestrial	No
Quillwort, Black-spored (<i>Isoetes melanospora</i>)	Endangered	Ferns Vernal pool	No
Lichen, Rock Gnome (<i>Gymnoderma lineare</i>)	Endangered	Lichen Terrestrial	No
Arrowhead, Bunched (<i>Sagittaria fasciculata</i>)	Endangered	Monocot Freshwater	No
Irisette, White (<i>Sisyrinchium dichotomum</i>)	Endangered	Monocot Terrestrial	No
Pink, Swamp (<i>Helonias bullata</i>)	Threatened	Monocot Terrestrial, Freshwater	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No
Trillium, Persistent (<i>Trillium persistens</i>)	Endangered	Monocot Terrestrial	No
Trillium, Relict (<i>Trillium reliquum</i>)	Endangered	Monocot Terrestrial	No

South Dakota (4) species:

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

South Dakota (4) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)	Threatened	Monocot Terrestrial	No

Tennessee (23) species:

		<u>Taxa</u>	<u>Critical Habitat</u>
Stork, Wood (<i>Mycteria americana</i>)	Endangered	Bird Terrestrial	No
Tern, Interior (population) Least (<i>Sterna antillarum</i>)	Endangered	Bird Terrestrial	No
Woodpecker, Red-cockaded (<i>Picoides borealis</i>)	Endangered	Bird Terrestrial	No
Aster, Ruth's Golden (<i>Pityopsis ruthii</i>)	Endangered	Dicot Terrestrial	No
Avens, Spreading (<i>Geum radiatum</i>)	Endangered	Dicot Terrestrial	No
Bladderpod, Spring Creek (<i>Lesquerella perforata</i>)	Endangered	Dicot Floodplain	No
Bluet, Roan Mountain (<i>Hedyotis purpurea</i> var. <i>montana</i>)	Endangered	Dicot Terrestrial	No
Chaffseed, American (<i>Schwalbea americana</i>)	Endangered	Dicot Terrestrial	No
Clover, Leafy Prairie (<i>Dalea foliosa</i>)	Endangered	Dicot Terrestrial	No
Coneflower, Tennessee Purple (<i>Echinacea tennesseensis</i>)	Endangered	Dicot Terrestrial	No
Goldenrod, Blue Ridge (<i>Solidago spithamea</i>)	Threatened	Dicot Terrestrial	No
Ground-plum, Guthrie's (<i>Astragalus bibullatus</i>)	Endangered	Dicot Terrestrial	No
Pitcher-plant, Green (<i>Sarracenia oreophila</i>)	Endangered	Dicot Terrestrial, Freshwater	No
Potato-bean, Price's (<i>Apios priceana</i>)	Threatened	Dicot Terrestrial	No
Rock-cress, Large (=Braun's) (<i>Arabis perstellata</i> E. L. Braun var. <i>ampla</i> Rollins)	Endangered	Dicot Terrestrial	Yes
Rosemary, Cumberland (<i>Conradina verticillata</i>)	Threatened	Dicot Terrestrial	No
Sandwort, Cumberland (<i>Arenaria cumberlandensis</i>)	Endangered	Dicot Terrestrial	No
Skullcap, Large-flowered (<i>Scutellaria montana</i>)	Threatened	Dicot Terrestrial	No
Spiraea, Virginia (<i>Spiraea virginiana</i>)	Threatened	Dicot Terrestrial	No
Fern, American hart's-tongue (<i>Asplenium scolopendrium</i> var. <i>americanum</i>)	Threatened	Ferns Terrestrial	No

Tennessee (23) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Lichen, Rock Gnome (<i>Gymnoderma lineare</i>)	Endangered	Lichen Terrestrial	No
Grass, Tennessee Yellow-eyed (<i>Xyris tennesseensis</i>)	Endangered	Monocot Terrestrial	No
Pogonia, Small Whorled (<i>Isotria medeoloides</i>)	Threatened	Monocot Terrestrial	No

Wisconsin (9) species:		<u>Taxa</u>	<u>Critical Habitat</u>
Crane, Whooping (<i>Grus americana</i>)	Endangered	Bird Terrestrial, Freshwater	Yes
Plover, Piping (<i>Charadrius melodus</i>)	Endangered	Bird Terrestrial	Yes
Warbler (=Wood), Kirtland's (<i>Dendroica kirtlandii</i>)	Endangered	Bird Terrestrial	No
Clover, Prairie Bush (<i>Lespedeza leptostachya</i>)	Threatened	Dicot Terrestrial	No
Locoweed, Fassett's (<i>Oxytropis campestris var. chartacea</i>)	Threatened	Dicot Terrestrial	No
Monkshood, Northern Wild (<i>Aconitum noveboracense</i>)	Threatened	Dicot Terrestrial	No
Thistle, Pitcher's (<i>Cirsium pitcheri</i>)	Threatened	Dicot Terrestrial	No
Iris, Dwarf Lake (<i>Iris lacustris</i>)	Threatened	Monocot Terrestrial	No
Orchid, Eastern Prairie Fringed (<i>Platanthera leucophaea</i>)	Threatened	Monocot Terrestrial	No

No species were selected for exclusion.

Dispersed species included in report.