

Region 3 PRIMR Summaries

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The following tables were generated using the Ad-hoc Report tool in PRIMR and the R program. Unless noted, only Current and Expected Surveys are included in Tables. Differences in totals reflect whether or not user can select more than one category.

This report summarizes the information currently in the PRIMR database for R3 Refuges. We would like to produce periodic reports of this information for purposes of understanding what our refuge stations are monitoring, collectively. This draft represents a first cut at portraying the information.

Recommendations:

1. Decide how often to summarize and report this information. Who is the target audience?
 - a. Pat's DNR_CP Leadership team, Regional Refuge Leadership Team, I&M Branch?

Pat suggested that we compile this information again after all the IMPs are completed and then annually to see where there are changes, if any, in the data.

2. Clarify how will we use this information
 - a. Gain a general understanding of what surveys are being conducted in R3.
 - b. Decide how to allocate regional resources for gathering ISI's, writing protocol frameworks and site specific survey protocols.
 - c. Detect problems with PRIMR records that make it difficult to produce useful summaries.
 - d. Prioritize work associated with improving PRIMR records.

For example, here are some tasks that would improve PRIMR records.

1. Create templates for commonly conducted surveys. This would standardize the names and some other associated information.
2. Gather ISI's and create links in PRIMR.
3. Zone biologist schedules annual call with refuge stations to review PRIMR records. At that time, they address problems we've identified.
4. Review/update PRIMR with regard to known water inventories and monitoring.

Here are some tasks/questions that would be derived from this report:

1. Why are so many stations still doing the Mid-winter Waterfowl survey? This survey has no protocol, no central data management system, and no reporting, to my knowledge. Why aren't they using IWMM protocol?

Pat suggested meeting with the Migratory bird folks to discuss this issue. She suggested that we could use our partners influence and their "priorities" to help stations determine the appropriate survey that should be used for waterfowl surveys.

2. There are perhaps many similar questions (see above) that could be asked about other surveys.
3. Write site-specific survey protocols for stations that are using approved survey protocol frameworks.
4. Gather ISI's and create links in PRIMR.
5. Zone biologists work to derive accurate estimates of resources (time and \$\$) for the most commonly conducted surveys. Update PRIMR with that info.
6. Use the summary information, along with interviews with station staff to identify future survey protocol frameworks that we need to plan for.

Summary Question: What types of surveys are being conducted in R3?

Information to answer this question was generated from the Resources & Species tab. Selecting a Resource Theme 1 and 2 on the Resources & Species tab is a required field for a "complete" survey. See Appendix A for definitions of Resource Theme 1 and 2 categories.

Table 1. Resource Theme 1 and 2 are required fields for "complete" surveys. These categories describe the types of survey. Resource Theme 2 categories are dependent on what was entered for Resources Theme 1. Only one from each drop down menu can be chosen. Resource Theme 1 is in **bold**.

Resource Theme	Resource Theme 1 Count	Resource Theme 2 Count
Air and Climate	8	
Air Quality		4
Weather and Climate		4
Biological Integrity	506	
At-risk Biota		58
Infestations and Disease		6
Invasive Species		42
Other Biota		400
Geology and Soils	2	
Geomorphology		1
Soil Quality		1
Human Use	15	
Consumptive Use		5
Visitor and Recreation Use		10
Landscapes (Ecosystem Pattern and Processes)	19	
Extreme Disturbance Events		1
Landscape Dynamics		18
Water	45	
Hydrology		36
Water Quality		9
Total	595	595

Summary Question: What groups are being surveyed in R3?

Information to answer this question was also generated from the Resources & Species tab. As mentioned above, selecting a Resource Theme 1 and 2 on the Resources & Species tab is a required field for a “complete” survey. If you choose Biological Integrity as your Resource Theme 1 you are then required to enter at least one entry for Biotic Group Levels 1 and 2. Other Resource Theme 1 categories (Water, Landscapes (Ecosystem Pattern and Processes), Human Use, Air and Climate, and Geology and Soils) do not require the selection of Biotic Groups.

CC on 11/15/16 discussed how this information would be more useful if PRIMR offered “groups”, “broad habitat types” or “categories” under Biotic Group Level 2. For example: instead of having the stations conducting a grassland survey and choosing multiple dominant plant types, they could instead choose “Grassland species” or “remnant prairie species”.

Table 2. Biotic Group Level 1 are Class and Kingdom categories and Biotic Group Level 2 are Family and Order. Multiple categories can be selected. See Appendix B for surveys associated with Biotic Group Levels.

Biotic Group Level 1	Biotic Group Level 1 Count	Biotic Group Level 2 Count
Amphibians	54	
Frogs, Toads		33
Salamanders		8
arthropods	110	
alderflies, dobsonflies, fishflies		4
amphipods		3
ants, bees, wasps		15
beetles		6
butterflies, moths		22
caddisflies		5
crabs, crayfishes, lobsters, prawns, shrimp		2
crickets, grasshoppers, katydids, locusts		3
daddy longlegs, harvestmen		1
damselflies, dragonflies		12
gnats, mosquitoes, true flies		8
hemipterans, true bugs		4
isopods, pillbugs, sowbugs		2
mayflies		5
snow flies, springtails		2
spiders		2
stoneflies		4
Birds	777	
Alcids, Auks, Gulls, Oystercatchers, Plovers, Shore Birds		80
Cormorants		44
Cranes, Rails		58
Cuckoos		13
Doves, Pigeons		26

Biotic Group Level 1	Biotic Group Level 1 Count	Biotic Group Level 2 Count
Ducks, Geese, Screamers, Swans, Waterfowl		136
Falconiforms, Falcons		24
Fowls, Gallinaceous Birds		32
Goatsuckers, Owls		22
Grebes		43
Hawks		60
Hérons, Ibises, Pelicans		60
Hummingbirds, Swifts		15
Kingfishers, Rollers		19
Loons		23
Perching Birds		64
Storks		2
Woodpeckers		28
bony fishes	50	
bowfin		2
catfishes		4
gars		3
mail-cheeked fishes, scorpion fishes, sculpins		2
minnows, suckers		6
mudminnows, pikes		3
paddlefishes, spoonfishes, sturgeons		2
perch-like fishes		10
percopsiforms, trout-perches		1
pipefishes, sticklebacks		4
salmons		4
fungi	1	
mammals	79	
artiodactyls, cloven-hoofed ungulates, even-toed ungulates		19
bats		22
carnivores		11
Hares, lagomorphs, Pikas, Rabbits		4
*No Common Name (Soricomorpha=moles, shrews)		1
rodents		13
molluscs, mollusks	3	
*No Common Name (Stylommatophora)		1
plants	584	
alder, birch		3
arrowhead, water-plantain		11
Arums		3
bayberries		3
bittersweet		4
bloodwort		2

Biotic Group Level 1	Biotic Group Level 1 Count	Biotic Group Level 2 Count
buckthorns		10
buckwheat, knotweed		12
buttercups, crowfoot		8
common ferns, licorice ferns		1
crucifers, mustards		10
custard apples		1
ditchgrass, ditch grass, ditch-grass		4
dogbane		6
dogwoods		4
elms		7
evening primroses		1
figworts		4
floating ferns, water ferns		2
four o'clocks		1
frog's bit, tape-grass, waternymphs		4
gentians		2
geraniums		2
grapes		6
grasses		70
heaths		2
hemp		3
honeysuckle		6
hornwort		1
horsetails		2
Indian lotus		2
laurels		1
legumes, peas		35
loosestrife		21
maidenhair ferns		1
mallows		5
marsh ferns		2
milkworts		1
mints		13
morningglories, morning-glories		7
mosquito ferns		1
mulberries		1
nettles		5
nightshades		5
*No Common Name (Acanthaceae, Amborellaceae, Apiaceae, Butomaceae, Cactaceae, Echinodiaceae, Fagaceae, Iridaceae, Lemnaceae, Myristicaceae, Pentaphragmataceae, Phragmonemataceae, Typhaceae)		42

Biotic Group Level 1	Biotic Group Level 1 Count	Biotic Group Level 2 Count
oleasters		3
olives		10
orchids		13
papayas		1
pickerel-weed		1
pigweed		6
pinos		5
plantains		5
pokeweed		2
pondweed, pond weed, Pondweed family		12
primroses		6
purslane		1
quassias		4
roses		14
rushes, Rush Family		7
saxifrages		1
sedges		22
Spiderwort Family		1
spurge		5
sunflowers		48
sweet-flag		1
tamarisk		2
teasel		3
verbenas		4
violets		1
walnuts		6
water lilies		3
water milfoil		5
water-shields		3
waterworts		1
willows		23
witch hazel		2
woodferns, wood ferns		2
Yam Family		3
Reptiles	34	
Amphisbaenians, Lizards, Snakes		11
terrapins, tortoises, Turtles		13
**Total	1692	1591

*No Common Name = some scientific names in PRIMR indicate having "(No Common Name)".

** Biotic Group level 1 and 2 Totals differ because multiple categories can be selected.

Summary Question: Which National Protocol Frameworks are being used in R3?

This information is taken from the Protocols & Products tab in PRIMR and is not a required field for “complete” surveys. That means that we don’t have comprehensive information from across the Region.

PRIMR asks: Does the survey use an established protocol as defined in the I&M Policy? Yes/No

If YES, user can indicate which approved protocol is being used by selecting from a pull-down menu.

Only nationally approved protocols are on this list; presently only 20 exist. However, not all 20 apply to R3. NOTE: A link to the selected protocol stored in ServCat is automatically added to Table 1 which can be generated in PRIMR for IMPs.

Table 3. This table lists the 7 National Protocols that are presently selected for surveys in R3. 37 surveys in PRIMR are associated with a national protocols. This information is not presently a required field for “complete” surveys in PRIMR and therefore we do not have comprehensive information from across the Region.

<u>Has.Protocol</u>	<u>Count</u>
Forest Invasives Adaptive Management*	1
Integrated Waterbird Management and Monitoring Initiative	11
International Shorebird Survey	2
National Protocol Framework for the Inventory and Monitoring of Bees	12
National Protocol Framework for the Inventory and Monitoring of Breeding Landbirds Using Point Counts	3
North American Breeding Bird Survey	7
Rapid ecological assessment of forest cover of Huron NWR	1

*Protocol Used: [Regional Protocol Framework for Effectiveness Monitoring of Invasive Plants: Eastern Broadleaf Forest Biology Network - Midwest Region](#). This protocol is presently in the DRAFT stage and can no longer be selected in PRIMR. If previously selected in PRIMR it will indicate “visibility has changed”.

Summary Question: Which surveys provided a URL to initial survey instructions?

CC on 11/15/16 discussed next steps in regards to Frameworks and ISIs. Providing URLs to Frameworks or ISIs are not required in PRIMR and therefore these tables are not “complete”. However, Melinda talked about the steps we could take to obtain this information in R3:

- Decide where to store ISIs: ServCat or SharePoint?
- Should all ISI be uploaded regardless of the “quality”?
- Should we use a cover sheet like some other Regions are doing?
- How do we determine if a station is using a certain protocol? For example: What if a station does a Christmas Bird Count but does not use Audubon’s Christmas Bird Count?

Table 4. This table lists the surveys that provide a URL to initial survey instructions (ISI). Mixed means that some stations provided a URL and some did not for the same survey. This field is not a required field in PRIMR for a “complete” record. That means that we don’t have comprehensive information from across the Region.

Survey.Name	Count	Has.ISI
Audubon's Christmas Bird Count	18	Mixed
Mid-Winter Waterfowl Survey	18	Mixed
American Woodcock Singing-ground Survey	12	Mixed
Colonial Waterbird Survey	7	Mixed
North American Amphibian Monitoring Program	7	Mixed
National Midwinter Bald Eagle Survey	6	Mixed
Fall Sandhill Crane Count	5	Mixed
Forest Inventory	4	Mixed
Boltonia decurrens Survey	3	Mixed
National Marsh Bird Monitoring and Research Program	3	Mixed
Ruffed Grouse Drumming Survey	2	Mixed
Annual Kirtland's Warbler Official Census: Lower and Upper Peninsulas of Michigan	1	TRUE
Bat Inventory	1	TRUE
Common Tern Survey and Reproductive Monitoring	1	TRUE
International Crane Foundation Spring Crane Count	1	TRUE
Invasive Species Inventory	1	TRUE
Macroinvertebrate Monitoring	1	TRUE
Mercury Deposition Network	1	TRUE
Mobile Acoustical Bat Monitoring	1	TRUE
National Atmospheric Deposition Program	1	TRUE
Piping Plover Census	1	TRUE
Pool Surveys for Trumpeter Swan, Osprey, Common Loon Occupancy and Productivity	1	TRUE
Sharp-tailed Grouse Dancing Ground (Lek) Survey	1	TRUE
Stream Gage Station Monitoring	1	TRUE
Stream Habitat Monitoring	1	TRUE
Swan Lake Habitat Monitoring	1	TRUE
Whittlesey Creek Sediment Transport Study	1	TRUE

Summary Question: What surveys are being conducted by more than one station in R3?

Table 5. Surveys and the number (count) of stations doing that survey. Only surveys being conducted by more than one station is included. Surveys in bold are national framework surveys. See Appendix B for surveys by Biotic Group Levels.

Survey Name	Count
Mid-Winter Waterfowl Survey	20
Audubon's Christmas Bird Count	18
American Woodcock Singing-ground Survey	12
National Protocol Framework for the Inventory and Monitoring of Bees	12
Integrated Waterbird Management and Monitoring Initiative	11
Four-Square-Mile Breeding Waterfowl Survey	10
Wilderness Character Monitoring	10
Water Level Monitoring	9
Colonial Waterbird Survey	7
North American Amphibian Monitoring Program	7
North American Breeding Bird Survey	7
National Midwinter Bald Eagle Survey	6
Fall Sandhill Crane Count	5
FWS Duck Banding	5
Bald Eagle Nesting Survey	4
Forest Inventory	4
North American Butterfly Count	4
Western Prairie Fringed Orchid Survey	4
Bat Survey stationary acoustic	3
Boltonia decurrens Survey	3
Bottomland Forest Inventory	3
Deformed Frog and Toad Survey	3
Eastern Prairie Fringed Orchid Inventory and Monitoring	3
Forest Bird Survey	3
Habitat Types-Baseline Inventory-WMD	3
Heron, Egret, and Cormorant Nesting Activity Survey	3
Invasive species monitoring	3
Invasive Species Survey	3
Inventory of Prairie Fens	3
National Marsh Bird Monitoring and Research Program	3
National Protocol Framework for the Inventory and Monitoring of Breeding Landbirds Using Point Counts	3
Remnant Prairie Monitoring	3
Reptile Survey	3
Singing Frog Survey	3
Small Mammal Survey	3
Small White Lady's Slipper Monitoring	3
Tree Removal Follow-up monitoring	3

Survey Name	Count
Waterbird and associates	3
Waterfowl Census	3
Weather Monitoring	3
Annual Midwest Crane Count	2
Aquatic Invertebrate Survey	2
Bald Eagle Productivity Survey	2
Bathymetric Survey	2
Black Tern Nesting Survey	2
Common tern nesting platform monitoring	2
DASK & POSK monitoring	2
Dragonfly Survey	2
Fire Effects Monitoring	2
Grassland Monitoring Team	2
Grazing Monitoring	2
Great Lakes Marsh Monitoring Program, Amphibian Survey	2
Great Lakes Marsh Monitoring Program, Marsh Bird Survey	2
Habitat Monitoring	2
Habitat photo points	2
International Shorebird Survey	2
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Mobile Acoustic Bat Survey	2
Monitoring of Hand-harvest Sites	2
Muskrat House Survey	2
Native Prairie Adaptive Management	2
Periodic inspection.	2
Prairie Chicken Lek Survey	2
Prairie Reconstruction Monitoring	2
Predator Scent Post Survey	2
Ruffed Grouse Drumming Survey	2
Secretive Marsh Bird Survey	2
Shorebird Survey	2
Songbird Point Counts	2
Spring Bird Count	2
Staff Gage Monitoring	2
U.S. Great Lakes Colonial Waterbird Survey	2
Upland Vegetation Monitoring	2
Vegetation Monitoring	2
Vegetation Photopoints	2
Water Management Capability Inventory	2
Waterfowl Banding	2
Waterfowl Breeding Pair Count	2
Waterfowl Breeding Pair Survey	2
Waterfowl Brood Survey	2

Survey Name	Count
Waterfowl Hunter Harvest Bag Checks	2
Waterfowl Nest Study	2
Waterfowl Survey	2
Wildlife Lake Habitat Surveys	2
Wood Duck Banding	2
Wood Duck Box Monitoring	2

The following are Regional/National Reports that can be generated directly from PRIMR's home page.

Summary question: What T&E species are being surveyed in R3?

PRIMR Report Table 1. T&E species being surveyed in R3. This information was generated from the [ESA Surveys](#) PRIMR report. Only “complete” surveys are included. Information may include current, expected, future, or historic surveys that are “complete”. See Appendix C for T&E surveys being conducted by stations.

Common Name	Scientific Name	Listing Status	R3
Dakota Skipper	<i>Hesperia dacotae</i>	Threatened	1
Gray wolf	<i>Canis lupus</i>	Threatened	1
Iowa Pleistocene snail	<i>Discus macclintocki</i>	Endangered	1
Kirtland's Warbler	<i>Setophaga kirtlandii</i> (= <i>Dendroica kirtlandii</i>)	Endangered	1
Northern wild monkshood	<i>Aconitum noveboracense</i>	Threatened	1
Piping Plover	<i>Charadrius melodus</i>	Endangered	1
Pitcher's thistle	<i>Cirsium pitcheri</i>	Threatened	1
Poweshiek skipperling	<i>Oarisma poweshiek</i>	Endangered	1
Whooping crane	<i>Grus americana</i>	Experimental Population	1
Bald eagle	<i>Haliaeetus leucocephalus</i>	Recovery	2
Karner blue butterfly	<i>Lycaeides melissa samuelis</i>	Endangered	2
Decurrent false aster	<i>Boltonia decurrens</i>	Threatened	3
Eastern prairie fringed orchid	<i>Platanthera leucophaea</i>	Threatened	3
Western prairie fringed Orchid	<i>Platanthera praeclara</i>	Threatened	4
Gray bat	<i>Myotis grisescens</i>	Endangered	5
Northern Long-Eared Bat	<i>Myotis septentrionalis</i>	Threatened	6
Indiana bat	<i>Myotis sodalis</i>	Endangered	13
Totals			47

[NEW](#) I redid the T&E table using the ad hoc tool in PRIMR and only included current and expected surveys. There were no T&E surveys with an expected status

T&E Common Name	T&E Listing Status	Count
Piping Plover	Endangered	1
Poweshiek skipperling	Endangered	1
Iowa Pleistocene snail	Endangered	1
Kirtland's Warbler	Endangered	1
Northern wild monkshood	Threatened	1
Dakota Skipper	Threatened	1
Pitcher's thistle	Threatened	1
Gray wolf	Threatened	1
	Experimental	
Whooping crane	Population	1
Bald eagle	Recovery	2
Karner blue butterfly	Endangered	3
Decurrent false aster	Threatened	3
Eastern prairie fringed orchid	Threatened	3
Western prairie fringed orchid	Threatened	4
Gray bat	Endangered	6
Northern long-eared bat	Threatened	8
Indiana bat	Endangered	17
TOTAL		55

[NEW](#) In this table I included future and historic surveys to see if any other T&E species showed up.

T&E Inverted Name	T&E Listing Status	<u>Survey Status</u>			Total
		Current	Future	Historic	
Piping Plover	Endangered	1			1
Poweshiek skipperling	Endangered	1			1
Iowa Pleistocene snail	Endangered	1			1
Kirtland's Warbler	Endangered	1			1
	Experimental	1			
Whooping crane	Population			1	2
Northern wild monkshood	Threatened	1			1
Dakota Skipper	Threatened	1	1		2
Pitcher's thistle	Threatened	1			1
Gray wolf	Threatened	1			1
Bald eagle	Recovery	2		1	3
Karner blue butterfly	Endangered	3	1		4
Decurrent false aster	Threatened	3			3
Eastern prairie fringed orchid	Threatened	3	2		5
Western prairie fringed orchid	Threatened	4			4
Gray bat	Endangered	6			6
Northern long-eared bat	Threatened	8			8
Indiana bat	Endangered	17	3		20
Whooping crane	Endangered			1	1
Higgins eye (pearlymussel)	Endangered		1		1
Least tern	Endangered			1	1
Gray wolf	Endangered			1	1
Prairie bush-clover	Threatened		2		2

Dwarf lake iris	Threatened	1		1
Copperbelly water snake	Threatened		1	1
TOTAL		55	11	6
				72

PRIMR Report Table 2. Summary of all R3 station surveys by status. This information was generated from the Regional Survey Summary PRIMR report.

Station Name	Total Surveys	Total Complete Surveys	Total Incomplete Surveys	Current Complete Surveys	Current Incomplete Surveys	Expected Complete Surveys	Expected Incomplete Surveys	Future Complete Surveys	Future Incomplete Surveys	Historic Complete Surveys	Historic Incomplete Surveys
Agassiz National Wildlife Refuge	1	1	0	1	0	0	0	0	0	0	0
Big Muddy National Fish and Wildlife Refuge	15	8	7	8	0	0	0	0	1	0	6
Big Oaks National Wildlife Refuge	21	21	0	21	0	0	0	0	0	0	0
Big Stone National Wildlife Refuge	5	5	0	5	0	0	0	0	0	0	0
Big Stone Wetland Management District	2	2	0	2	0	0	0	0	0	0	0
Boyer Chute National Wildlife Refuge	2	2	0	2	0	0	0	0	0	0	0
Cedar Point National Wildlife Refuge	11	10	1	10	0	0	0	0	1	0	0
Chautauqua National Wildlife Refuge	55	29	26	21	0	0	0	0	2	8	24
Clarence Cannon National Wildlife Refuge	30	12	18	7	0	0	0	5	5	0	13
Crab Orchard National Wildlife Refuge	14	5	9	5	0	0	0	0	0	0	9
Crane Meadows National Wildlife Refuge	4	4	0	2	0	0	0	1	0	1	0
Cypress Creek National Wildlife Refuge	21	21	0	16	0	0	0	2	0	3	0
Desoto National Wildlife Refuge	8	7	1	7	0	0	0	0	1	0	0
Detroit Lakes Wetland Management District	29	29	0	21	0	2	0	2	0	4	0
Detroit River International Wildlife Refuge	31	31	0	4	0	1	0	8	0	18	0
Driftless Area National Wildlife Refuge	6	6	0	4	0	0	0	0	0	2	0
Emiquon National Wildlife Refuge	21	16	5	11	0	0	0	0	1	5	4
Fergus Falls Wetland Management District	10	10	0	9	0	0	0	0	0	1	0
Fox River National Wildlife Refuge	11	2	9	2	0	0	0	0	0	0	9
Glacial Ridge National Wildlife Refuge	31	31	0	14	0	1	0	8	0	8	0
Gravel Island National Wildlife Refuge	10	4	6	4	0	0	0	0	0	0	6
Great River National Wildlife Refuge	35	9	26	4	0	0	0	5	7	0	19
Green Bay National Wildlife Refuge	11	4	7	4	0	0	0	0	0	0	7
Hackmatack National Wildlife Refuge	0	0	0	0	0	0	0	0	0	0	0
Hamden Slough National Wildlife Refuge	12	12	0	11	0	1	0	0	0	0	0
Harbor Island National Wildlife Refuge	5	3	2	1	0	1	0	0	0	1	2
Horicon National Wildlife Refuge	31	12	19	11	0	0	0	1	0	0	19
Huron National Wildlife Refuge	6	4	2	2	0	2	0	0	0	0	2
Iowa Wetland Management District	4	4	0	4	0	0	0	0	0	0	0
Kirtlands Warbler Wildlife Management Area	2	1	1	1	0	0	0	0	0	0	1
Leopold Wetland Management District	10	3	7	3	0	0	0	0	3	0	4
Litchfield Wetland Management District	5	5	0	5	0	0	0	0	0	0	0
Meredosia National Wildlife Refuge	34	18	16	13	0	0	0	0	6	5	10
Michigan Islands National Wildlife Refuge	5	5	0	5	0	0	0	0	0	0	0

Station Name	Total Surveys	Total Complete Surveys	Total Incomplete Surveys	Current Complete Surveys	Current Incomplete Surveys	Expected Complete Surveys	Expected Incomplete Surveys	Future Complete Surveys	Future Incomplete Surveys	Historic Complete Surveys	Historic Incomplete Surveys
Michigan Wetland Management District	0	0	0	0	0	0	0	0	0	0	0
Middle Mississippi River National Wildlife Refuge	10	8	2	4	0	0	0	0	0	4	2
Mille Lacs National Wildlife Refuge	1	0	1	0	0	0	0	0	1	0	0
Mingo National Wildlife Refuge	23	22	1	15	0	1	0	1	1	5	0
Minnesota Valley National Wildlife Refuge	19	13	6	12	0	0	0	0	0	1	6
Minnesota Valley Wetland Management District	12	6	6	6	0	0	0	0	4	0	2
Morris Wetland Management District	37	37	0	23	0	1	0	1	0	12	0
Muscatatuck National Wildlife Refuge	36	23	13	14	0	1	0	7	1	1	12
Neal Smith National Wildlife Refuge	6	6	0	6	0	0	0	0	0	0	0
Necedah National Wildlife Refuge	24	15	9	15	0	0	0	0	0	0	9
Northern Tallgrass Prairie National Wildlife Refuge	9	9	0	8	0	1	0	0	0	0	0
Ottawa National Wildlife Refuge	32	21	11	21	0	0	0	0	1	0	10
Ozark Cavefish National Wildlife Refuge	0	0	0	0	0	0	0	0	0	0	0
Patoka River National Wildlife Refuge	20	18	2	2	0	0	0	1	2	15	0
Pilot Knob National Wildlife Refuge	1	1	0	1	0	0	0	0	0	0	0
Port Louisa National Wildlife Refuge	28	14	14	10	0	0	0	2	7	2	7
Rice Lake National Wildlife Refuge	0	0	0	0	0	0	0	0	0	0	0
Rydell National Wildlife Refuge	21	21	0	8	0	0	0	7	0	6	0
Seney National Wildlife Refuge	67	29	38	17	0	1	0	3	1	8	35
Sherburne National Wildlife Refuge	12	12	0	10	0	0	0	0	0	2	0
Shiawassee National Wildlife Refuge	39	19	20	15	0	1	0	2	11	1	9
Squaw Creek National Wildlife Refuge	40	33	7	28	0	0	0	1	0	4	7
St. Croix Wetland Management District	4	4	0	3	0	0	0	0	0	1	0
Swan Lake National Wildlife Refuge	37	37	0	5	0	0	0	16	0	16	0
Tamarac National Wildlife Refuge	33	17	16	17	0	0	0	0	0	0	16
Tamarac Wetland Management District	0	0	0	0	0	0	0	0	0	0	0
Trempealeau National Wildlife Refuge	14	14	0	12	0	0	0	2	0	0	0
Two Rivers National Wildlife Refuge	31	25	6	6	0	0	0	8	4	11	2
Union Slough National Wildlife Refuge	22	18	4	14	0	0	0	1	1	3	3
Upper Mississippi River National Wildlife and Fish Refuge	13	4	9	4	0	0	0	0	0	0	9
Upper Mississippi River National Wildlife and Fish Refuge-La Crosse District	41	10	31	10	0	0	0	0	0	0	31
Upper Mississippi River National Wildlife and Fish Refuge-Mcgregor District	18	3	15	3	0	0	0	0	0	0	15

Station Name	Total Surveys	Total Complete Surveys	Total Incomplete Surveys	Current Complete Surveys	Current Incomplete Surveys	Expected Complete Surveys	Expected Incomplete Surveys	Future Complete Surveys	Future Incomplete Surveys	Historic Complete Surveys	Historic Incomplete Surveys
Upper Mississippi River National Wildlife and Fish Refuge-Savanna District	21	16	5	16	0	0	0	0	0	0	5
Upper Mississippi River National Wildlife and Fish Refuge-Winona District	28	9	19	9	0	0	0	0	0	0	19
West Sister Island National Wildlife Refuge	3	3	0	3	0	0	0	0	0	0	0
Whittlesey Creek National Wildlife Refuge	22	22	0	12	0	0	0	7	0	3	0
Windom Wetland Management District	24	15	9	15	0	0	0	0	9	0	0
Totals (71 Stations)	1246	840	406	586	0	14	0	91	70	151	334

Appendix A: Resource Theme 1 Definitions:

Air and Climate: Abiotic surveys that focus on physical conditions related to the atmosphere

Geology and Soils: Abiotic surveys that focus on geologic or soil resources; surveys of soil organisms that are not conducted to gauge soil quality should be classified under 'biological integrity'

Water: Abiotic surveys that focus on physical conditions in aquatic systems; surveys of aquatic organisms that are used to gauge water quality should be classified under 'biological integrity'

Biological Integrity: Biotic surveys that focus on conditions in a biological population or community

Landscapes (Ecosystem Pattern and Processes): Biotic surveys that focus on conditions at an ecosystem or broader level of biological organization

Human Use: Surveys where the predominant focus is on human use of a resource

Resource Theme 2 Definitions:

Air and Climate

Air Quality: Surveys that focus on quality of air resources

Weather and Climate: Surveys that focus on weather and climate conditions or patterns

Geology and Soils

Geomorphology: Surveys that focus on landform patterns or the processes that shape landforms

Subsurface Geologic Processes: Surveys that focus on geologic conditions or processes below the earth's surface

Soil Quality: Surveys that focus on conditions of soil resources excepting surveys of nutrient dynamics

Paleontology: Surveys that focus on prehistoric biological conditions or processes

Water

Hydrology: Surveys that focus on aquatic processes including quantity and movement of water; surveys that focus on specific effects and conditions of extensive floods should be included under 'Extreme Disturbance Events.'

Water Quality: Surveys that focus on quality of water resources

Biological Integrity

Invasive Species: Surveys that focus on patterns and processes created by invading species

Infestations and Disease: Surveys that focus on pathogens and health of organisms

At-risk Biota: Surveys with a primary focus on species with some form of at-risk status

Other Biota: Surveys with a primary focus on species that are not invasive, pathogens, or at risk

Landscapes (Ecosystem Pattern and Processes)

Fire and Fuel Dynamics: Surveys that focus on fire management effects or conditions that influence fire

Landscape Dynamics: Surveys that focus on processes and conditions associated with landscape changes, excluding extreme disturbance events

Extreme Disturbance Events: Surveys that focus on shorter-term, more extreme changes in landscape conditions or processes

Soundscape: Surveys that focus on patterns or effects of noise

Viewscape: Surveys that focus on conditions or processes associated with landscape views; surveys that use clarity of views for measures of air quality (e.g., amount of particulate matter) should be classified as and air quality survey.

Nutrient Dynamics: Surveys that focus on chemical elements required for productivity or growth in biological systems

Energy Flow: Surveys that focus on transfer of physical or chemical energy within or between ecosystems

Human Use

Point Source Human Effects: Surveys of human caused effects on a resource from a single non-diffuse source

Non-point Source Human Effects: Surveys of human caused effects on a resource from multiple or diffuse source(s)

Consumptive Use: Surveys that focus on the extent or manner of consumption of a resource(s) by humans

Visitor and Recreation Use: Surveys that focus on patterns or effects of human visitation on a resource(s) excepting surveys that focus specifically on noise, which would be included under 'Soundscape'.

Cultural Landscapes: Surveys that focus primarily on cultural resources and landscapes; surveys that focus on broader patterns of change in landscapes that included cultural and natural resources should be included in 'Landscape Dynamics'

Appendix B: Surveys associated with Biotic Group Levels:

Table B.1. Surveys associated with Biotic Group Levels. Multiple biotic groups can be selected for a survey and therefore a survey can appear more than once in this table.

Biotic Group Levels 1 and 2	Survey Name (count)
Amphibians	
Frogs, Toads	
Aquatic surveys of scour hole and temporary wetlands	1
Baseline Wildlife Inventories	1
Bioblitz	1
Cover Board Surveys	1
Crawfish Frog Breeding Pond Occupancy	1
Crawfish Frog Breeding Success	1
Crawfish Frog Demography	1
Crawfish Frog Response to Management Actions	1
Deformed Frog and Toad Survey	3
Environmental Health Monitoring	1
Fire Effects Monitoring	1
Frog and Toad nocturnal call surveys	1
Great Lakes Marsh Monitoring Program, Amphibian Survey	2
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
National Abnormal Amphibian Monitoring Project	1
North American Amphibian Monitoring Program	7
Singing Frog Survey	3
Southern Illinois Anuran Survey	1
Wetland Class/Condition Baseline Inventory	1
Wetland Hydrology	1
Wisconsin DNR Frog Call Count	1
Salamanders	
Aquatic surveys of scour hole and temporary wetlands	1
Baseline Wildlife Inventories	1
Cover Board Surveys	1
Environmental Health Monitoring	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
North American Amphibian Monitoring Program	1
Wetland Management	1
(blank)	
Aquatic surveys of scour hole and temporary wetlands	1
Baseline Wildlife Inventories	1
Bioblitz	1
Cover Board Surveys	1
Environmental Health Monitoring	1
Fire Effects Monitoring	1
Forest Inventory and Assessment	1
Hydrologic/Hydraulic Modeling Work	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Wetland Class/Condition Baseline Inventory	1

Biotic Group Levels 1 and 2	Survey Name (count)
Wetland Hydrology	1
Wetland Management	1
arthropods	
alderflies, dobsonflies, fishflies	
Aquatic Invertebrate Survey	2
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
amphipods	3
Impoundment System water level monitoring	1
Macroinvertebrate Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
ants, bees, wasps	
Baseline Wildlife Inventories	1
Fire Effects Monitoring	1
National Protocol Framework for the Inventory and Monitoring of Bees	12
Native Bee Survey	1
beetles	
Baseline Wildlife Inventories	1
Emerald Ash Borer Traps	1
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
National Protocol Framework for the Inventory and Monitoring of Bees	1
butterflies, moths	
Baseline Wildlife Inventories	1
Bioblitz	1
Butterfly and Moth (Lepidoptera) Survey	1
DASK & POSK monitoring	2
Fire Effects Monitoring	1
Gypsy Moth Traps	1
Impoundment System water level monitoring	1
Karner Blue Butterfly Survey	1
Long-term monitoring of butterflies, conducted by Black Swamp Bird Observatory	1
Lost Mound Butterfly Count	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monarch tagging	1
National Protocol Framework for the Inventory and Monitoring of Bees	1
Native Bee Survey	1
North American Butterfly Count	4
POSK/DASK Survey	1
Prairie Obligate Butterfly Surveys	1
Vegetation Survey in Karner Blue Butterfly Habitat	1
caddisflies	
Aquatic Invertebrate Survey	2
Impoundment System water level monitoring	1
Macroinvertebrate Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1

Biotic Group Levels 1 and 2	Survey Name (count)
crabs, crayfishes, lobsters, prawns, shrimp	
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
crickets, grasshoppers, katydids, locusts	
Baseline Wildlife Inventories	1
Fire Effects Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
daddy longlegs, harvestmen	
Fire Effects Monitoring	1
damselflies, dragonflies	
Aquatic Invertebrate Survey	2
Baseline Wildlife Inventories	1
Dragonfly Survey	2
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Macroinvertebrate Monitoring	1
Macro-Invertebrates and Wetland Condition	1
Minnesota PCA Citizen Stream Monitoring Program	1
Shallow Lake Survey	1
Wetland Health Evaluation Project	1
gnats, mosquitoes, true flies	
Aquatic Invertebrate Survey	2
Baseline Wildlife Inventories	1
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Macroinvertebrate Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Wetland Class/Condition Baseline Inventory	1
hemipterans, true bugs	
Baseline Wildlife Inventories	1
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Wetland Class/Condition Baseline Inventory	1
isopods, pillbugs, sowbugs	
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
mayflies	
Aquatic Invertebrate Survey	2
Impoundment System water level monitoring	1
Macroinvertebrate Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
snow flies, springtails	
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
spiders	
Baseline Wildlife Inventories	1
Fire Effects Monitoring	1
stoneflies	

Biotic Group Levels 1 and 2	Survey Name (count)
Aquatic Invertebrate Survey	2
Macroinvertebrate Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
(blank)	
Baseline Wildlife Inventories	1
Bioblitz	1
Contaminant Effects on Wetland Invertebrates	1
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Invertebrate/Fish Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
Shallow Lake Survey	1
Wetland Class/Condition Baseline Inventory	1
Wetland Health Evaluation Project	1
Birds	
Alcids, Auks, Gulls, Oystercatchers, Plovers, Shore Birds	
Aerial Waterfowl Migration Survey	1
American Woodcock Singing-ground Survey	12
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	9
Avian Influenza Monitoring	1
Baseline Wildlife Inventories	1
Big Sit	1
Black Tern Nesting Survey	2
Breeding Bird Survey (Refuge)	1
Cedar Point point counts	1
Colonial Waterbird Survey	4
Common tern nesting platform monitoring	2
Common Tern Survey and Reproductive Monitoring	1
Godwit/Upland Sandpiper Survey	1
Grebe & Tern Survey	1
Hydrologic/Hydraulic Modeling Work	1
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	11
International Shorebird Survey	2
Lake Erie Marsh Region Shorebird population survey, conducted by Black Swamp	
Bird Observatory	1
Lakeplain Prairie Monitoring	1
Mid-Winter Waterfowl Survey	1
Migratory Bird Survey (Waterfowl Survey)	1
Migratory Waterfowl Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
National Marsh Bird Monitoring and Research Program	1
North American Breeding Bird Survey	3
Piping Plover Census	1
Refuge Woodcock Singing-Ground Surveys	1
Sherburne NWR Modified Woodcock Singing-ground Survey	1

Biotic Group Levels 1 and 2	Survey Name (count)
Shorebird Survey	2
Spring Bird Count	1
U.S. Great Lakes Colonial Waterbird Survey	2
Union Slough NWR Waterfowl Survey	1
Waterbird and associates	3
Weekly Shorebird Survey	1
Wilderness Character Monitoring	1
Woodcock Survey	1
Cormorants	
Aerial Waterfowl Migration Survey	1
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	4
Big Sit	1
Cedar Point point counts	1
Colonial Waterbird Survey	6
Double-crested cormorant management and monitoring	1
Heron, Egret, and Cormorant Nesting Activity Survey	3
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	8
Lake Erie Marsh Region Shorebird population survey, conducted by Black Swamp	
Bird Observatory	1
Lakeplain Prairie Monitoring	1
Mid-Winter Waterfowl Survey	1
Migratory Bird Survey (Waterfowl Survey)	1
Migratory Waterfowl Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
North American Breeding Bird Survey	3
Spring Bird Count	1
U.S. Great Lakes Colonial Waterbird Survey	2
Union Slough NWR Waterfowl Survey	1
Waterbird and associates	3
Wilderness Character Monitoring	1
Cranes, Rails	
Aerial Waterfowl Migration Survey	1
Annual Midwest Crane Count	2
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	5
Big Sit	1
Breeding Bird Survey (Refuge)	1
Cedar Point point counts	1
Fall Sandhill Crane Count	5
Goose and Crane Fly-out Count	1
Great Lakes Marsh Monitoring Program, Marsh Bird Survey	2
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	11
International Crane Foundation Spring Crane Count	1
Lake Erie Marsh Region Shorebird population survey, conducted by Black Swamp	
Bird Observatory	1

Biotic Group Levels 1 and 2	Survey Name (count)
Mid-Winter Waterfowl Survey	1
Migratory Bird Survey (Waterfowl Survey)	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
National Marsh Bird Monitoring and Research Program	3
North American Breeding Bird Survey	5
Point Count Breeding Bird Survey	1
Secretive Marsh Bird Survey	2
Union Slough NWR Waterfowl Survey	1
Waterbird and associates	3
Waterbird Nest Searching	1
Waterfowl Die-offs associated with Trematodes	1
Weekly Fall Waterfowl Count	1
Wetland Hydrology	1
Whooping Crane Monitoring	1
Cuckoos	
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	1
Breeding Bird Survey (Refuge)	1
Fire Effects Monitoring	1
Go Zero Breeding Bird	1
Minnesota PCA Citizen Stream Monitoring Program	1
National Protocol Framework for the Inventory and Monitoring of Breeding	
Landbirds Using Point Counts	1
North American Breeding Bird Survey	5
Songbird Point Counts	1
Doves, Pigeons	
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	10
Big Sit	1
Breeding Bird Survey (Refuge)	1
Fire Effects Monitoring	1
FWS Mourning Dove Call Count Survey	1
Go Zero Breeding Bird	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
North American Breeding Bird Survey	5
Songbird Point Counts	1
Spring Bird Count	1
Ducks, Geese, Screamers, Swans, Waterfowl	
Aerial Waterfowl Migration Survey	1
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	15
Avian Influenza Monitoring	1
Baseline Wildlife Inventories	1
Big Lake waterfowl ground survey	1
Big Sit	1

Biotic Group Levels 1 and 2	Survey Name (count)
Breeding Bird Survey (Refuge)	1
Cavity nesting waterfowl, nest box monitoring	1
Cedar Point point counts	1
District Pair and Brood Surveys	1
Fall Weekly Waterfowl Surveys	1
Fire Effects Monitoring	1
Forest Inventory and Assessment	1
Four-Square-Mile Breeding Waterfowl Survey	10
FWS Duck Banding	5
FWS Waterfowl Breeding Population and Habitat Survey (aerial survey transects)	1
Goose and Crane Fly-out Count	1
Goose Island Waterfowl Ground Survey	1
Goose roundup/ goose collar surveys	1
Great Lakes Marsh Monitoring Program, Marsh Bird Survey	2
Hydrologic/Hydraulic Modeling Work	1
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	11
Lake Erie Marsh Region Shorebird population survey, conducted by Black Swamp	
Bird Observatory	1
Lakeplain Prairie Monitoring	1
Managing Temporary and Seasonal Wetlands	1
Marsh Bird Survey	1
Mid-Winter Waterfowl Survey	19
Migratory Bird Survey (Waterfowl Survey)	1
Migratory Waterfowl Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monitor hen house use	1
Monitor trumpeter swan production	1
Monthly bird walk	1
North American Breeding Bird Survey	5
North American Trumpeter Swan Survey	1
Pool Surveys for Trumpeter Swan, Osprey, Common Loon Occupancy and	
Productivity	1
Spring Bird Count	1
Union Slough NWR Waterfowl Survey	1
Waterbird and associates	3
Waterfowl Banding	2
Waterfowl Breeding Pair Count	2
Waterfowl Breeding Pair Survey	2
Waterfowl Brood Survey	2
Waterfowl Census	3
Waterfowl Count	1
Waterfowl Die-offs associated with Trematodes	1
Waterfowl Hunter Harvest Bag Checks	2
Waterfowl Nest Structure Use Monitoring	1
Waterfowl Nest Study	2
Waterfowl Pair and Brood Monitoring	1
Waterfowl Parts Collection Survey	1

Biotic Group Levels 1 and 2	Survey Name (count)
Waterfowl Survey	2
Weekly Fall Waterfowl Count	1
Weekly Waterbird Survey	1
Weekly Waterfowl Survey	1
Wetland Class/Condition Baseline Inventory	1
Wood Duck Banding	2
Wood Duck Box Monitoring	2
Wood Duck Nest Box Monitoring	1
Wood Duck Nest Boxes	1
Wood Duck Nest Success	1
Falconiforms, Falcons	
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	9
Big Sit	1
Breeding Bird Survey (Refuge)	1
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
North American Breeding Bird Survey	5
Point Count Breeding Bird Survey	1
Songbird Point Counts	1
Spring Bird Count	1
Fowls, Gallinaceous Birds	
Audubon's Christmas Bird Count	6
Big Sit	1
Cedar Point point counts	1
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	2
Iowa August Roadside Pheasant and Upland Game Survey	1
Lake Erie Marsh Region Shorebird population survey, conducted by Black Swamp Bird Observatory	1
Marsh Bird Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
North American Breeding Bird Survey	2
Prairie Chicken Counts	1
Prairie Chicken Lek Survey	2
Prairie Chicken Survey	1
Relocating Greater Prairie Chickens to West Central Minnesota	1
Ruffed Grouse Drumming Survey	2
Sharp-tailed Grouse Dancing Ground (Lek) Survey	1
Songbird Point Counts	1
Waterfowl Census	3
Wild Turkey Hunter Harvest	1
Goatsuckers, Owls	
Audubon Mayday Bird Count	1

Biotic Group Levels 1 and 2	Survey Name (count)
Audubon's Christmas Bird Count	8
Big Sit	1
Breeding Bird Survey (Refuge)	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
North American Breeding Bird Survey	6
Northern Saw-whet owl Banding:Migration Monitoring	1
Spring Bird Count	1
Grebes	
Audubon's Christmas Bird Count	6
Baseline Wildlife Inventories	1
Big Sit	1
Colonial Waterbird Survey	1
Great Lakes Marsh Monitoring Program, Marsh Bird Survey	1
Grebe & Tern Survey	1
Hydrologic/Hydraulic Modeling Work	1
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	8
Lake Erie Marsh Region Shorebird population survey, conducted by Black Swamp	
Bird Observatory	1
Lakeplain Prairie Monitoring	1
Marsh Bird Survey	1
Mid-Winter Waterfowl Survey	1
Migratory Bird Survey (Waterfowl Survey)	1
Migratory Waterfowl Survey	1
Monthly bird walk	1
National Marsh Bird Monitoring and Research Program	1
North American Breeding Bird Survey	4
Secretive Marsh Bird Survey	1
Union Slough NWR Waterfowl Survey	1
Waterbird and associates	3
Waterbird Nest Searching	1
Waterfowl Census	3
Weekly Fall Waterfowl Count	1
Hawks	
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	16
Bald Eagle Lead Exposure Sampling	1
Bald Eagle Nest Inventory	1
Bald Eagle Nest/Fledging Survey	1
Bald Eagle Nesting Survey	4
Bald Eagle Productivity Survey	2
Big Sit	1
Breeding Bird Survey (Refuge)	1
Cedar Point point counts	1
Fire Effects Monitoring	1
Impoundment System water level monitoring	1

Biotic Group Levels 1 and 2	Survey Name (count)
Integrated Waterbird Management and Monitoring Initiative	2
Iowa Mid Winter Bald Eagle Survey	1
Lost Mound Bald Eagle Count	1
Lost Mound Golden Eagle Survey	1
Mid-Winter Waterfowl Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
National Midwinter Bald Eagle Survey	6
National Protocol Framework for the Inventory and Monitoring of Breeding Landbirds Using Point Counts	1
North American Breeding Bird Survey	6
Point Count Breeding Bird Survey	1
Pool Surveys for Trumpeter Swan, Osprey, Common Loon Occupancy and Productivity	1
Songbird Point Counts	1
Spring Bird Count	1
Union Slough NWR Waterfowl Survey	1
Weekly Bald Eagle Counts	1
Wilderness Character Monitoring	2
Herons, Ibises, Pelicans	
Aerial Waterfowl Migration Survey	1
Audubon's Christmas Bird Count	7
Baseline Wildlife Inventories	1
Big Sit	1
Breeding Bird Survey (Refuge)	1
Cedar Point point counts	1
Colonial Waterbird Survey	7
Great Lakes Marsh Monitoring Program, Marsh Bird Survey	2
Heron, Egret, and Cormorant Nesting Activity Survey	3
Hydrologic/Hydraulic Modeling Work	1
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	11
Lakeplain Prairie Monitoring	1
Marsh Bird Survey	1
Mid-Winter Waterfowl Survey	1
Migratory Bird Survey (Waterfowl Survey)	1
Migratory Waterfowl Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
National Marsh Bird Monitoring and Research Program	1
North American Breeding Bird Survey	4
Pelican Nesting, and Productivity Survey	1
Secretive Marsh Bird Survey	2
Spring Bird Count	1
U.S. Great Lakes Colonial Waterbird Survey	2
Union Slough NWR Waterfowl Survey	1
Waterbird and associates	3
Waterbird Nest Searching	1
Wetland Hydrology	1

Biotic Group Levels 1 and 2	Survey Name (count)
Hummingbirds, Swifts	
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	1
Breeding Bird Survey (Refuge)	1
Fire Effects Monitoring	1
Go Zero Breeding Bird	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
North American Breeding Bird Survey	6
Point Count Breeding Bird Survey	1
Spring Bird Count	1
Kingfishers, Rollers	
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	5
Big Sit	1
Breeding Bird Survey (Refuge)	1
Cedar Point point counts	1
Impoundment System water level monitoring	1
Lake Erie Marsh Region Shorebird population survey, conducted by Black Swamp	
Bird Observatory	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
North American Breeding Bird Survey	5
Spring Bird Count	1
Loons	
Aerial Waterfowl Migration Survey	1
Audubon's Christmas Bird Count	2
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	5
Lake Erie Marsh Region Shorebird population survey, conducted by Black Swamp	
Bird Observatory	1
Loon Productivity	1
Mid-Winter Waterfowl Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
North American Breeding Bird Survey	4
Pool Surveys for Trumpeter Swan, Osprey, Common Loon Occupancy and	
Productivity	1
Union Slough NWR Waterfowl Survey	1
Waterbird and associates	3
Perching Birds	
Annual Kirtland's Warbler Official Census: Lower and Upper Peninsulas of	
Michigan	1
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	16
Baseline Wildlife Inventories	1
Big Sit	1
Bioblitz	1

Biotic Group Levels 1 and 2	Survey Name (count)
Blue Bird Nest Boxes	1
Bluebird Trail	1
Breeding Bird Survey (Refuge)	1
Cedar Point point counts	1
Fire Effects Monitoring	1
Forest Bird Survey	3
Forest Inventory and Assessment	1
Go Zero Breeding Bird	1
Grassland Monitoring Team	1
Grasslands Bird Survey	1
Great Lakes Marsh Monitoring Program, Marsh Bird Survey	2
Henslow's Sparrow Road Side Transect Survey	1
Illinois Spring Bird Count	1
Impoundment System water level monitoring	1
Lake Erie Marsh Region Shorebird population survey, conducted by Black Swamp Bird Observatory	1
Migrational movements and habitat usage of passerines, conducted by Black Swamp Bird Observatory	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
National Marsh Bird Monitoring and Research Program	1
National Protocol Framework for the Inventory and Monitoring of Breeding Landbirds Using Point Counts	3
Nest Drag (search)	1
Nest Structure Survey (use)	1
North American Breeding Bird Survey	7
Point Count Breeding Bird Survey	1
Secretive Marsh Bird Survey	1
Songbird Nestbox Monitoring	1
Songbird Point Counts	2
Spring Bird Count	2
Upland Nest Box Survey	1
Wetland Class/Condition Baseline Inventory	1
Storks	
Integrated Waterbird Management and Monitoring Initiative	2
Woodpeckers	
Audubon Mayday Bird Count	1
Audubon's Christmas Bird Count	10
Big Sit	1
Breeding Bird Survey (Refuge)	1
Cavity nesting waterfowl, nest box monitoring	1
Cedar Point point counts	1
Fire Effects Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monthly bird walk	1
National Protocol Framework for the Inventory and Monitoring of Breeding Landbirds Using Point Counts	1
North American Breeding Bird Survey	6

Biotic Group Levels 1 and 2	Survey Name (count)
Point Count Breeding Bird Survey	1
Songbird Point Counts	1
Spring Bird Count	1
(blank)	
Audubon's Christmas Bird Count	2
Baseline Wildlife Inventories	1
Bat Survey/Study	1
Bioblitz	1
Fire Effects Monitoring	1
Forest Inventory and Assessment	1
Grasslands Bird Survey	1
Hydrologic/Hydraulic Modeling Work	1
Illinois Spring Bird Count	1
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	3
Managing Temporary and Seasonal Wetlands	1
Minnesota PCA Citizen Stream Monitoring Program	1
Nest Drag (search)	1
Nest Structure Survey (use)	1
North American Trumpeter Swan Survey	1
Spring Bird Count	1
Wetland Class/Condition Baseline Inventory	1
Wetland Hydrology	1
Wilderness Character Monitoring	2
Wildlife Lake Habitat Surveys	2
bony fishes	
bowfin	
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
catfishes	
Aquatic surveys of scour hole and temporary wetlands	1
Evaluation of Fish Use in Side-Channel Chutes	1
Fish assemblages of lower Missouri River side channels	1
Fish Survey	1
gars	
Aquatic surveys of scour hole and temporary wetlands	1
Evaluation of Fish Use in Side-Channel Chutes	1
Fish assemblages of lower Missouri River side channels	1
mail-cheeked fishes, scorpion fishes, sculpins	
Evaluation of Fish Use in Side-Channel Chutes	1
Fish assemblages of lower Missouri River side channels	1
minnows, suckers	
Aquatic surveys of scour hole and temporary wetlands	1
Baseline Wildlife Inventories	1
Evaluation of Fish Use in Side-Channel Chutes	1
Fish assemblages of lower Missouri River side channels	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1

Biotic Group Levels 1 and 2	Survey Name (count)
mudminnows, pikes	
Fish Survey	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
paddlefishes, spoonfishes, sturgeons	
Evaluation of Fish Use in Side-Channel Chutes	1
Fish assemblages of lower Missouri River side channels	1
perch-like fishes	
Aquatic surveys of scour hole and temporary wetlands	1
Conduct Fisheries Assessments on Various Refuge Lakes	1
Evaluation of Fish Use in Side-Channel Chutes	1
Fish assemblages of lower Missouri River side channels	1
Fish Survey	1
Hydrologic/Hydraulic Modeling Work	1
Impoundment System water level monitoring	1
Invertebrate/Fish Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
Yellow Perch/Fish Survey	1
percopsiforms, trout-perches	
Wetland Management	1
pipefishes, sticklebacks	
Aquatic surveys of scour hole and temporary wetlands	1
Evaluation of Fish Use in Side-Channel Chutes	1
Fish assemblages of lower Missouri River side channels	1
Minnesota PCA Citizen Stream Monitoring Program	1
salmons	
Brook Trout PIT Tag Stations	1
Comprehensive Fish Survey	1
Fish Index	1
Restore Fish	1
(blank)	
Aquatic surveys of scour hole and temporary wetlands	1
Baseline Wildlife Inventories	1
Impoundment System water level monitoring	1
Invasive Species Inventory	1
Invertebrate/Fish Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
Wetland Management	1
Wildlife Lake Habitat Surveys	2
fungi	
(blank)	
Forest Inventory and Assessment	1
mammals	
artiodactyls, cloven-hoofed ungulates, even-toed ungulates	
Aerial Deer Survey	1
Aerial Winter Deer Survey	1
Chronic Wasting Disease Sampling	1
Deer Population Survey	1

Biotic Group Levels 1 and 2	Survey Name (count)
Deer Spotlight Survey	1
Deer Survey	1
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Lost Mount Spotlight Deer Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
Spotlight Deer Survey	1
White-tailed Deer Aging Studies	1
White-tailed Deer Fall Count	1
White-tailed Deer Health and Population Survey	1
White-tailed Deer Hunter Harvest	1
White-tailed Deer Hunter Harvest Survey	1
White-tailed Deer Population Studies	1
White-tailed Deer Reproduction and Health (fetus, blood parasites, CWD, and brain worms)	1
Winter Aerial Deer Count	1
bats	
Acoustical Bat Monitoring	1
Bat Detector Monitoring	1
Bat Hibernaculum survey	1
Bat Inventory	1
Bat Survey	1
Bat Survey stationary acoustic	3
Bat Survey/Study	1
Fire Effects Monitoring	1
Forest and Snag Inventory	1
Forest Bat Mist Netting	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Mobile Acoustic Bat Survey	2
Mobile Acoustical Bat Monitoring	1
Mobile Forest Bat Acoustic Surveys	1
Passive Forest bat Acoustic Surveys	1
Wilderness Character Monitoring	2
Wisconsin Bat Program Roost Monitoring	1
carnivores	
Baseline Wildlife Inventories	1
Fur Harvest Report	1
Furbearer Harvest	1
Impoundment System water level monitoring	1
Minnesota DNR Carnivore Scent Post Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
Minnesota Wolf Survey	1
Predator Scent Post Survey	2
Raccoon Population Survey	1
Winter Track Survey	1
Hares, lagomorphs, Pikas, Rabbits	
Baseline Wildlife Inventories	1

Biotic Group Levels 1 and 2	Survey Name (count)
Fire Effects Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Small Mammal Survey	1
No Common Name (Soricomorpha=moles, shrews)	
Small Mammal Survey	1
rodents	
Baseline Wildlife Inventories	1
Beaver Lodge Counts	1
Fur Harvest Report	1
Furbearer Harvest	1
Minnesota PCA Citizen Stream Monitoring Program	1
Muskrat House Count	1
Muskrat House Survey	2
Muskrat Survey	1
Small Mammal Survey	3
Wetland Class/Condition Baseline Inventory	1
(blank)	
Baseline Wildlife Inventories	1
Bat Survey/Study	1
Fire Effects Monitoring	1
Forest Inventory and Assessment	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Western Prairie Fringed Orchid Survey	1
Wetland Class/Condition Baseline Inventory	1
Wilderness Character Monitoring	1
molluscs, mollusks	
No Common Name (Stylommatophora)	
Iowa Pleistocene snail monitoring	1
(blank)	
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
plants	
alder, birch	
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
USACE Forest Inventory	1
arrowhead, water-plantain	
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	3
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Minnesota PCA Citizen Stream Monitoring Program	1
Moist Soil Plant Inventory	1
Submersed Aquatic Vegetation Sampling	1
Vegetation Photopoints	2
Arums	
Integrated Waterbird Management and Monitoring Initiative	1
Shallow Lake Survey	1

Biotic Group Levels 1 and 2	Survey Name (count)
Wetland Health Evaluation Project	1
bayberries	
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
bittersweet	
Forest Invasives Adaptive Management	1
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
bloodwort	
Fire Effects Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
buckthorns	
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Invasive Species Monitoring	3
Minnesota PCA Citizen Stream Monitoring Program	1
Tree Removal Follow-up monitoring	3
USACE Forest Inventory	1
buckwheat, knotweed	
Integrated Waterbird Management and Monitoring Initiative	3
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Minnesota PCA Citizen Stream Monitoring Program	1
Moist Soil Plant Inventory	1
Seed Production Estimation	1
Swan Lake Habitat Monitoring	1
buttercups, crowfoot	
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monopoly Lake Vegetation Surveys	1
Northern monkshood monitoring	1
common ferns, licorice ferns	
Minnesota PCA Citizen Stream Monitoring Program	1
crucifers, mustards	
Fire Effects Monitoring	1
Garlic Mustard Surveys	1
Integrated Waterbird Management and Monitoring Initiative	2
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1

Biotic Group Levels 1 and 2	Survey Name (count)
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Noxious Weeds	1
custard apples	
Forest and Snag Inventory	1
ditchgrass, ditch grass, ditch-grass	
Integrated Waterbird Management and Monitoring Initiative	2
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
dogbane	
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	1
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
Moist Soil Plant Inventory	1
dogwoods	
Fire Effects Monitoring	1
Habitat Monitoring	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
elms	
Forest and Snag Inventory	1
Habitat Monitoring	1
Invasive plant mapping	1
Tree Removal Follow-up monitoring	3
USACE Forest Inventory	1
evening primroses	
Fire Effects Monitoring	1
figworts	
Fire Effects Monitoring	1
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
floating ferns, water ferns	
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	1
four o'clocks	
Fire Effects Monitoring	1
frog's bit, tape-grass, waternymphs	
Aquatic Vegetation	1
Integrated Waterbird Management and Monitoring Initiative	1
Submersed Aquatic Vegetation Survey	1
Wild Celery Sampling	1
gentians	
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
geraniums	
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1

Biotic Group Levels 1 and 2	Survey Name (count)
grapes	
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	2
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Minnesota PCA Citizen Stream Monitoring Program	1
grasses	
2015 Grazing Monitoring	1
Bioblitz	1
Cane Survey	1
Evaluation of Methods for Canada Thistle-Free Habitat Restoration	1
Fire Effects Monitoring	1
Giant Cane ARM Monitoring	1
Giant Cane Inventory	1
Grassland Monitoring	1
Grassland Monitoring Team	1
Grassland Monitoring Transects	1
Grazing Effects Rapid Assessment	1
Grazing Monitoring	1
Habitat Monitoring	1
Habitat Types-Baseline Inventory-WMD	3
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	2
Invasive plant mapping	1
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Inventory and Monitoring	1
Invasive Plant Species Refuge-scale Inventory	1
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Invasive Species Inventory	1
Invasive Species Monitoring	3
Long-term vegetation transects	1
Managing Temporary and Seasonal Wetlands	1
Moist Soil Plant Inventory	1
Monitoring of Hand-harvest Sites	2
Monitoring of hand-seeded areas	1
Narrow-leaved reedgrass (<i>Calamagrostis stricta</i>) inventory	1
Native Prairie Adaptive Management	2
Native Prairie Remnant Inventory	1
Noxious Weeds	1
Oak savanna monitoring	2
Oak Savanna pre-assessments	1
Olson/Longtin Habitat Monitoring	1
Photopoint Monitoring	1
Prairie Management Monitoring	1
Prairie Reconstruction and Interseeding Monitoring	1
Prairie Reconstruction Monitoring	2
Reed Canary	1
Remnant Prairie Monitoring	3

Biotic Group Levels 1 and 2	Survey Name (count)
Sediment Removal Adaptive Management Study	1
Sediment Removal in Wetland Restorations	1
Seed Production Estimation	1
Staff Gage Monitoring	2
Treatment Evaluation of Phragmites, Invasive Cattail, and Reed Canary Grass	1
Upland Vegetation Monitoring	2
Vegetation Monitoring	2
Vegetation Photo Plots	1
Wabasha Prairie Vegetation Inventory	1
Wetland Class/Condition Baseline Inventory	1
Wetland Vegetation Cover Survey	1
Wetland Vegetation Survey	1
Wild Rice Monitoring	1
heaths	
Fire Effects Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
hemp	
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
honeysuckle	
Fire Effects Monitoring	1
Forest Invasives Adaptive Management	1
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
Noxious Weeds	1
hornwort	
Aquatic Vegetation	1
horsetails	
Habitat Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Indian lotus	
Aquatic Vegetation	1
Monopoly Lake Vegetation Surveys	1
laurels	
Habitat Monitoring	1
legumes, peas	
Evaluation of Methods for Canada Thistle-Free Habitat Restoration	1
Fire Effects Monitoring	1
Grassland Monitoring Team	1
Grazing Monitoring	1
Habitat Monitoring	1
Habitat Types-Baseline Inventory-WMD	3
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	2
Invasive Plant Species Grid-scale Monitoring	1

Biotic Group Levels 1 and 2	Survey Name (count)
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Invasive Species Monitoring	3
Long-term vegetation transects	1
Minnesota PCA Citizen Stream Monitoring Program	1
Moist Soil Plant Inventory	1
Monitoring of Hand-harvest Sites	2
Monitoring of hand-seeded areas	1
Native Prairie Adaptive Management	2
Native Prairie Remnant Inventory	1
Noxious Weeds	1
Prairie Reconstruction and Interseeding Monitoring	1
Prairie Reconstruction Monitoring	2
Remnant Prairie Monitoring	3
loosestrife	
Forest Invasives Adaptive Management	1
Habitat Monitoring	1
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	3
Invasive Plant Inventory	1
Invasive plant mapping	1
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Invasive Species Monitoring	4
Invasive Species Survey	1
Minnesota PCA Citizen Stream Monitoring Program	1
Moist Soil Plant Inventory	1
Noxious Weeds	1
maidenhair ferns	
Fire Effects Monitoring	1
mallows	
Integrated Waterbird Management and Monitoring Initiative	2
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Minnesota PCA Citizen Stream Monitoring Program	1
marsh ferns	
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
milkworts	
Fire Effects Monitoring	1
mints	
Fire Effects Monitoring	1
Grassland Monitoring Team	1
Integrated Waterbird Management and Monitoring Initiative	3
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1

Biotic Group Levels 1 and 2	Survey Name (count)
Invasive Plant Species Refuge-scale Inventory	1
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Minnesota PCA Citizen Stream Monitoring Program	1
Native Prairie Adaptive Management	1
Prairie Reconstruction and Interseeding Monitoring	1
morningglories, morning-glories	
Integrated Waterbird Management and Monitoring Initiative	3
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Minnesota PCA Citizen Stream Monitoring Program	1
Moist Soil Plant Inventory	1
mosquito ferns	
Integrated Waterbird Management and Monitoring Initiative	1
mulberries	
USACE Forest Inventory	1
nettles	
Integrated Waterbird Management and Monitoring Initiative	2
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Minnesota PCA Citizen Stream Monitoring Program	1
nightshades	
Fire Effects Monitoring	1
Integrated Waterbird Management and Monitoring Initiative	2
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
No Common Name (Acanthaceae, Amborellaceae, Apiaceae, Butomaceae, Cactaceae, Echinodiaceae, Fagaceae, Iridaceae, Lemnaceae, Myristicaceae, Pentaphragmataceae, Phragmonemataceae, Typhaceae)	
Aquatic Vegetation	1
Ball cactus monitoring	1
Bottomland Forest Inventory	3
Cattail Control Study	1
Forest and Snag Inventory	1
Forest Inventory	4
Habitat Monitoring	1
Integrated Waterbird Management and Monitoring Initiative	1
Invasive Plant Inventory	1
Invasive plant mapping	1
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
Invasive Species Survey	3
Managing Temporary and Seasonal Wetlands	1
Mast Production Survey	1
Moss Lake/GTR Tree Regeneration Survey	1
Noxious Weeds	1
Oak savanna monitoring	2
Oak Savanna pre-assessments	1
Reforestation Monitoring	1
Sediment Removal in Wetland Restorations	1
Shiawassee portion: Michigan Islands Early Detection and Rapid Response	1

Biotic Group Levels 1 and 2	Survey Name (count)
Staff Gage Monitoring	2
Swan Lake Habitat Monitoring	1
Treatment Evaluation of Phragmites, Invasive Cattail, and Reed Canary Grass	1
Tree Dormancy	1
Upland Forest Inventory	1
USACE Forest Inventory	1
Vegetation Surveys	1
Wetland Class/Condition Baseline Inventory	1
Wetland Vegetation Monitoring	1
Wilderness Character Monitoring	1
oleasters	
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
olives	
Forest and Snag Inventory	1
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
Invasive Species Monitoring	3
Tree Removal Follow-up monitoring	3
orchids	
Eastern Prairie Fringed Orchid Inventory and Monitoring	3
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Small White Lady's Slipper Monitoring	3
Western Prairie Fringed Orchid Survey	4
papayas	
General Plant Survey and Upgrade of Refuge Plant Collection	1
pickerel-weed	
Habitat Monitoring	1
pigweed	
Integrated Waterbird Management and Monitoring Initiative	3
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Moist Soil Plant Inventory	1
pinos	
Forest Inventory	1
Moss Lake/GTR Tree Regeneration Survey	1
Tree Removal Follow-up monitoring	3
plantains	
Integrated Waterbird Management and Monitoring Initiative	2
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Minnesota PCA Citizen Stream Monitoring Program	1
pokeweed	
Fire Effects Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1

Biotic Group Levels 1 and 2	Survey Name (count)
pondweed, pond weed, Pondweed family	
Aquatic Vegetation	1
Habitat Monitoring	1
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	2
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Minnesota PCA Citizen Stream Monitoring Program	1
Monopoly Lake Vegetation Surveys	1
Sediment Removal Adaptive Management Study	1
Wildlife Lake Habitat Surveys	2
primroses	
Fire Effects Monitoring	1
Integrated Waterbird Management and Monitoring Initiative	2
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Moist Soil Plant Inventory	1
purslane	
Fire Effects Monitoring	1
quassias	
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
Noxious Weeds	1
roses	
Fire Effects Monitoring	2
Grassland Monitoring Team	1
Invasive Grid Scale Monitoring	1
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
Native Prairie Adaptive Management	1
Native Prairie Remnant Inventory	1
Noxious Weeds	1
Prairie Reconstruction and Interseeding Monitoring	1
Tree Removal Follow-up monitoring	3
rushes, Rush Family	
Integrated Waterbird Management and Monitoring Initiative	2
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Minnesota PCA Citizen Stream Monitoring Program	1
Sediment Removal Adaptive Management Study	1
Wetland Class/Condition Baseline Inventory	1
saxifrages	
Fire Effects Monitoring	1
sedges	
Fire Effects Monitoring	1
Habitat Monitoring	1
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	3
Invasive Species and Moist-Soil Management Vegetation Monitoring	2

Biotic Group Levels 1 and 2	Survey Name (count)
Inventory of Prairie Fens	3
Managing Temporary and Seasonal Wetlands	1
Minnesota PCA Citizen Stream Monitoring Program	1
Moist Soil Plant Inventory	1
Oak savanna monitoring	1
Oak Savanna pre-assessments	1
Sediment Removal in Wetland Restorations	1
Seed Production Estimation	1
Staff Gage Monitoring	2
Wetland Class/Condition Baseline Inventory	1
Wetland Vegetation Cover Survey	1
Spiderwort Family	
Fire Effects Monitoring	1
spurge	
Fire Effects Monitoring	1
Invasive Species Monitoring	3
Moist Soil Plant Inventory	1
sunflowers	
2015 Grazing Monitoring	1
Boltonia decurrens Survey	3
Canada Thistle Study	1
Evaluation of Methods for Canada Thistle-Free Habitat Restoration	1
Grassland Monitoring Team	1
Grazing Monitoring	1
Habitat Types-Baseline Inventory-WMD	3
Impacts of mowing on plumeless thistle and native forbs	1
Integrated Waterbird Management and Monitoring Initiative	3
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Inventory and Monitoring	1
Invasive Plant Species Refuge-scale Inventory	1
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Invasive Species Monitoring	3
Invasives Inventory	1
Lake Huron tansy (Tanacetum huronense) inventory	1
Long-term vegetation transects	1
Minnesota PCA Citizen Stream Monitoring Program	1
Moist Soil Plant Inventory	1
Monitoring of Hand-harvest Sites	2
Monitoring of hand-seeded areas	1
Native Prairie Adaptive Management	2
Native Prairie Remnant Inventory	1
Oak savanna monitoring	1
Oak Savanna pre-assessments	1
Prairie Reconstruction and Interseeding Monitoring	1
Prairie Reconstruction Monitoring	2
Remnant Prairie Monitoring	3
Sediment Removal in Wetland Restorations	1

Biotic Group Levels 1 and 2	Survey Name (count)
Seed Production Estimation	1
Shiawassee portion: Michigan Islands Early Detection and Rapid Response	1
Shiawassee portion: Pitcher's Thistle Monitoring	1
Wetland Class/Condition Baseline Inventory	1
sweet-flag	
Integrated Waterbird Management and Monitoring Initiative	1
tamarisk	
Habitat Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
teasel	
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
verbenas	
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	1
Moist Soil Plant Inventory	1
violets	
Fire Effects Monitoring	1
walnuts	
Fire Effects Monitoring	1
Forest and Snag Inventory	1
Forest Inventory	1
Habitat Monitoring	1
Reforestation Monitoring	1
USACE Forest Inventory	1
water lilies	
Aquatic Vegetation	1
Impoundment System water level monitoring	1
Monopoly Lake Vegetation Surveys	1
water milfoil	
Aquatic Vegetation	1
Habitat Monitoring	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Monopoly Lake Vegetation Surveys	1
water-shields	
Aquatic Vegetation	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
waterworts	
Habitat Monitoring	1
willows	
Forest and Snag Inventory	1
Forest Inventory	1
Habitat Monitoring	1
Impoundment System water level monitoring	1

Biotic Group Levels 1 and 2	Survey Name (count)
Integrated Waterbird Management and Monitoring Initiative	3
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
Invasive Species and Moist-Soil Management Vegetation Monitoring	2
Invasive Species Monitoring	3
Managing Temporary and Seasonal Wetlands	1
Minnesota PCA Citizen Stream Monitoring Program	1
Sediment Removal in Wetland Restorations	1
Tree Removal Follow-up monitoring	3
USACE Forest Inventory	1
Wetland Class/Condition Baseline Inventory	1
witch hazel	
Forest and Snag Inventory	1
Habitat Monitoring	1
woodferns, wood ferns	
Fire Effects Monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Yam Family	
Invasive Plant Species Grid-scale Monitoring	1
Invasive Plant Species Grid-scale Treatment Evaluation	1
Invasive Plant Species Refuge-scale Inventory	1
(blank)	
Bioblitz	1
Fire Effects Monitoring	1
Forest Inventory and Assessment	1
Garlic Mustard Surveys	1
Hydrologic/Hydraulic Modeling Work	1
Impoundment System water level monitoring	1
Integrated Waterbird Management and Monitoring Initiative	3
Lake Huron tansy (Tanacetum huronense) inventory	1
Managing Temporary and Seasonal Wetlands	1
Minnesota PCA Citizen Stream Monitoring Program	1
Narrow-leaved reedgrass (Calamagrostis stricta) inventory	1
Rapid ecological assessment of forest cover of Huron NWR	1
Shallow Lake Survey	1
Vegetation Surveys	1
Vegetative Cover Monitoring	1
Wetland Class/Condition Baseline Inventory	1
Wetland Health Evaluation Project	1
Wetland Vegetation Survey	1
Wilderness Character Monitoring	1
Reptiles	
Amphisbaenians, Lizards, Snakes	
Baseline Wildlife Inventories	1
Bioblitz	1
Cover Board Surveys	1
Environmental Health Monitoring	1

Biotic Group Levels 1 and 2	Survey Name (count)
Fire Effects Monitoring	1
Massassagua Geo-spatial Database	1
Reptile Cover boards	1
Reptile Survey	3
Reptile Surveys (Turtle Camp)	1
terrapins, tortoises, Turtles	
Aquatic surveys of scour hole and temporary wetlands	1
Blanding's Turtle	1
Blanding's Turtle Spatial Ecology	1
Environmental Health Monitoring	1
Fire Effects Monitoring	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
Ornate Box Turtle Activity, Productivity, and Nesting Survey	1
Reptile Survey	3
Reptile Surveys (Turtle Camp)	1
Turtle Trapping Surveys	1
(blank)	
Aquatic surveys of scour hole and temporary wetlands	1
Baseline Wildlife Inventories	1
Bioblitz	1
Cover Board Surveys	1
Environmental Health Monitoring	1
Fire Effects Monitoring	1
Forest Inventory and Assessment	1
Hydrologic/Hydraulic Modeling Work	1
Impoundment System water level monitoring	1
Minnesota PCA Citizen Stream Monitoring Program	1
(blank)	
(blank)	
Abiotic Inventory	1
Air Quality	1
Bathymetric Survey	2
Classification and Mapping of Natural and Semi-Natural Vegetation	1
Closed Area Disturbance Monitoring	1
Contaminants Testing	1
Darnen WPA Water Quality Monitoring	1
Establishment and Sampling of Permanent Vegetation Monitoring Plots	1
Forest Ecology-Restoration Research (Pattern/Process, Seney NWR-Kirtland's Warbler WMA)	1
Grazing Monitoring	1
Habitat Monitoring	1
Habitat photo points	2
Historic water level data inventory and assessment	1
Hydrogeomorphic (HGM) Wetland Classification	1
Hydrology Monitoring	1
Hydrology Restoration	1
Impoundment water levels	1

Biotic Group Levels 1 and 2	Survey Name (count)
Keithsburg Division Contaminants Monitoring	1
Mercury Deposition Leaf Survey	1
Mercury Deposition Network	1
Mercury Study	1
National Atmospheric Deposition Program	1
Native Prairie Adaptive Management Monitoring	1
NPAM Native Prairie Adaptive Management	1
NVCS	1
Periodic inspection.	2
Photo Stream	1
Rapid Assessment Method - Wetland Condition	1
Seney portion: Periodic inspection	1
Shallow Lakes	1
Staff Gage Monitoring for Water Management	1
Stream Gage Station Monitoring	1
Stream Habitat Monitoring	1
Testing the Bird Conservation Area Theory	1
Vent Temperature Monitoring	1
Water level gauges of Detroit River and Lake Erie	1
Water level management and monitoring	1
Water Level Monitoring	9
Water Level Monitoring (managed wetlands)	1
Water Level Readings & Management	1
Water Management Capability Inventory	2
Water Monitoring	1
Water Monitoring Gage - Shiawassee River and Refuge Streams	1
Water Quality	1
Water Quality Monitoring	1
Water Quality Survey	1
Water Resources Inventory	1
Weather Monitoring	3
Wetland Ecology-Restoration Research (Pattern-Process)	1
Wetland Resources Long-term Monitoring	1
Wetland Sediment Study	1
Whittlesey Creek Sediment Transport Study	1
Wilderness Character Monitoring	6
Total	1765

Appendix C: T&E Species Occurrence Summary:

This table was generated using the Ad Hoc tool in PRIMR, information in IRIS, and PRIMR.

Table C.1. Region 3 - T&E Species Occurrence Summary.

Refuge	Common Name	Scientific Name	Status	Species Occurrence	PRIMR Surveys Targeting (or could target) At-Risk Species	PRIMR Status
Agassiz National Wildlife Refuge	Gray wolf	Canis lupus	Threatened	Current	NONE	N/A
Big Muddy National Fish and Wildlife Refuge	Pallid sturgeon	Scaphirhynchus albus	Endangered	Current	Evaluation of Fish Use in Side-Channel Chutes, Fish assemblages of lower Missouri River side channels	Current
Big Oaks National Wildlife Refuge	Indiana bat	Myotis sodalis	Endangered	Current	Acoustical Bat Monitoring	Current
Cedar Point National Wildlife Refuge	Eastern prairie fringed orchid	Platanthera leucophaea	Threatened	Current	Eastern Praire Fringed Orchid inventory and monitoring	Current
Clarence Cannon National Wildlife Refuge	Piping Plover	Charadrius melodus	Threatened	Current	IWMM (survey would not capture breeding birds)	Current
Crane Meadows National Wildlife Refuge	Gray wolf	Canis lupus	Endangered	Current	NONE	N/A
Cypress Creek National Wildlife Refuge	Indiana bat	Myotis sodalis	Endangered	Current	3 bat surveys are listed in PRIMR	Current
Cypress Creek National Wildlife Refuge	Least tern	Sterna antillarum	Endangered	Current	NONE	N/A
Desoto National Wildlife Refuge	Pallid sturgeon	Scaphirhynchus albus	Endangered	Current	NONE	N/A
Detroit Lakes Wetland Management District	Dakota Skipper	Hesperia dacotae	Threatened	Current	NONE	N/A
Detroit Lakes Wetland Management District	Sprague's Pipit	Anthus spragueii	Candidate-resolved taxon	Current	NONE	N/A
Detroit Lakes Wetland Management District	Western prairie fringed Orchid	Platanthera praeclara	Threatened	Current	Western prairie fringed Orchid Survey	Current
Driftless Area National Wildlife Refuge	Iowa Pleistocene snail	Discus macclintocki	Endangered	Current	Iowa Pleistocene snail monitoring	Current
Driftless Area National Wildlife Refuge	Northern wild monkshood	Aconitum noveboracense	Threatened	Current	Northern monkshood monitoring	Current
Fergus Falls Wetland Management District	Piping Plover	Charadrius melodus	Endangered	Current	NONE	N/A

Refuge	Common Name	Scientific Name	Status	Species Occurrence	PRIMR Surveys Targeting (or could target) At-Risk Species	PRIMR Status
Fergus Falls Wetland Management District	Gray wolf	Canis lupus	Threatened	Current	NONE	N/A
Glacial Ridge National Wildlife Refuge	Western prairie fringed Orchid	Platanthera praeclara	Threatened	Current	Western prairie fringed Orchid Survey	Current
Green Bay National Wildlife Refuge	Dwarf lake iris	Iris lacustris	Threatened	Current	NONE	N/A
Hamden Slough National Wildlife Refuge	Gray wolf	Canis lupus	Threatened	Current	NONE	N/A
Iowa Wetland Management District	Prairie bush-clover	Lespedeza leptostachya	Threatened	Current	Upland Vegetation Monitoring	Current
Kirtlands Warbler Wildlife Management Area	Kirtland's Warbler	Setophaga kirtlandii (= Dendroica kirtlandii)	Endangered	Current	Annual Kirtland's Warbler Official Census: Lower and Upper Peninsulas of Michigan	Current
Leopold Wetland Management District	Karner blue butterfly	Lycaeides melissa samuelis	Endangered	Current	Karner Blue Butterfly Survey	Future
Leopold Wetland Management District	Eastern prairie fringed orchid	Platanthera leucophaea	Threatened	Current	Eastern Prairie Fringed Orchid monitoring	Current
Litchfield Wetland Management District	Dakota Skipper	Hesperia dacotae	Threatened	Current	NONE	N/A
Litchfield Wetland Management District	Gray wolf	Canis lupus	Threatened	Current	NONE	N/A
Litchfield Wetland Management District	Prairie bush-clover	Lespedeza leptostachya	Threatened	Current	NONE	N/A
Meredosia National Wildlife Refuge	Decurrent false aster	Boltonia decurrens	Threatened	Current	Boltonia decurrens Survey	Current
Michigan Islands National Wildlife Refuge	Dwarf lake iris	Iris lacustris	Threatened	Current	NONE	N/A
Michigan Islands National Wildlife Refuge	Pitcher's thistle	Cirsium pitcheri	Threatened	Current	Shiawassee portion: Pitcher's Thistle Monitoring	Current
Middle Mississippi River National Wildlife Refuge	Gray bat	Myotis grisescens	Endangered	Current	Mobile Acoustic Bat Survey	Current
Middle Mississippi River National Wildlife Refuge	Indiana bat	Myotis sodalis	Endangered	Current	Mobile Acoustic Bat Survey	Current
Middle Mississippi River National Wildlife Refuge	Least tern	Sterna antillarum	Endangered	Current	NONE	N/A
Middle Mississippi River National Wildlife Refuge	Pallid sturgeon	Scaphirhynchus albus	Endangered	Current	NONE	N/A

Refuge	Common Name	Scientific Name	Status	Species Occurrence	PRIMR Surveys Targeting (or could target) At-Risk Species	PRIMR Status
Mingo National Wildlife Refuge	Indiana bat	Myotis sodalis	Endangered	Current	Mobile Acoustic Bat Survey	Current
Morris Wetland Management District	Dakota Skipper	Hesperia dacotae	Threatened	Current	Prairie Obligate Butterfly Surveys	Current
Muscatatuck National Wildlife Refuge	Indiana bat	Myotis sodalis	Endangered	Current	Bat Survey	Current
Neal Smith National Wildlife Refuge	Indiana bat	Myotis sodalis	Endangered	Current	NONE	N/A
Necedah National Wildlife Refuge	Karner blue butterfly	Lycaeides melissa samuelis	Endangered	Current	Karner Blue Butterfly Survey	Current
Necedah National Wildlife Refuge	Eastern Massasauga (=rattlesnake)	Sistrurus catenatus	Candidate	Current	Massasauga Rattlesnake Population Survey	Historic
Necedah National Wildlife Refuge	Whooping crane	Grus americana	Experimental Population, non-essential	Restored	Whooping Crane Monitoring	Current
Northern Tallgrass Prairie National Wildlife Refuge	Topeka shiner	Notropis topeka (=tristis)	Endangered	Current	NONE	N/A
Northern Tallgrass Prairie National Wildlife Refuge	Western prairie fringed Orchid	Platanthera praeclara	Threatened	Current	Western Prairie Fringed Orchid Surveys	Current
Ottawa National Wildlife Refuge	Kirtland's Warbler	Setophaga kirtlandii (= Dendroica kirtlandii)	Endangered	Current	Point counts breeding birds	Historic
Ottawa National Wildlife Refuge	Piping Plover	Charadrius melodus	Endangered	Current	Lake Erie Marsh Region Shorebird population survey, conducted by Black Swamp Bird Observatory	Current
Ottawa National Wildlife Refuge	Eastern prairie fringed orchid	Platanthera leucophaea	Threatened	Current	Eastern Prairie Fringed Orchid inventory and monitoring	Current
Ozark Cavefish National Wildlife Refuge	Gray bat	Myotis grisescens	Endangered	Current	NONE	No surveys are listed for this station in PRIMR
Ozark Cavefish National Wildlife Refuge	Ozark cavefish	Amblyopsis rosae	Threatened	Current	NONE	No surveys are listed

Refuge	Common Name	Scientific Name	Status	Species Occurrence	PRIMR Surveys Targeting (or could target) At-Risk Species	PRIMR Status
						for this station in PRIMR
Patoka River National Wildlife Refuge	Indiana bat	Myotis sodalis	Endangered	Current	Acoustical Bat Survey	Current
Patoka River National Wildlife Refuge	Least tern	Sterna antillarum	Endangered	Current	Interior Least Tern	Historic
Patoka River National Wildlife Refuge	Whooping crane	Grus americana	Experimental Population, non-essential	Current	Whooping Crane	Historic
Pilot Knob National Wildlife Refuge	Gray bat	Myotis grisescens	Endangered	Current	Bat Hibernaculum survey	Current
Pilot Knob National Wildlife Refuge	Indiana bat	Myotis sodalis	Endangered	Current	Bat Hibernaculum survey	Current
Port Louisa National Wildlife Refuge	Higgins eye (pearlymussel)	Lampsilis higginsii	Endangered	Current	Mussel Surveys	Future
Rice Lake National Wildlife Refuge	Canada Lynx	Lynx canadensis	Threatened	Current	Scent Post Survey (not in PRIMR, conducted by volunteers)	No surveys are presently listed
Rice Lake National Wildlife Refuge	Gray wolf	Canis lupus	Threatened	Current	Scent Post Survey, Wolf Howling Survey (neither in PRIMR, both conducted by volunteers)	No surveys are presently listed
Seney National Wildlife Refuge	Gray wolf	Canis lupus	Endangered	Current	Survey of Gray Wolf and other Predators	Historic
Seney National Wildlife Refuge	Piping Plover	Charadrius melodus	Endangered	Current	Piping Plover Census	Current
Squaw Creek National Wildlife Refuge	Least tern	Sterna antillarum	Endangered	Current	Point counts survey	Historic
Squaw Creek National Wildlife Refuge	Piping Plover	Charadrius melodus	Endangered	Current	IWMM (survey would not capture breeding birds); Point counts survey is Historic in PRIMR (2001-2004):	Current

Refuge	Common Name	Scientific Name	Status	Species Occurrence	PRIMR Surveys Targeting (or could target) At-Risk Species	PRIMR Status
St. Croix Wetland Management District	Higgins eye (pearlymussel)	Lampsilis higginsii	Endangered	Current	NONE	NONE
St. Croix Wetland Management District	Karner blue butterfly	Lycaeides melissa samuelis	Endangered	Current	NONE	NONE
St. Croix Wetland Management District	Winged Mapleleaf	Quadrula fragosa	Endangered	Current	NONE	NONE
Swan Lake National Wildlife Refuge	Indiana bat	Myotis sodalis	Endangered	Current	Bat Surveys with Mist Net and Anabat	Future
Swan Lake National Wildlife Refuge	Least tern	Sterna antillarum	Endangered	Current	NONE	NONE
Tamarac National Wildlife Refuge	Gray wolf	Canis lupus	Threatened	Current	Winter Track Survey, Predator Scent Post Survey	Current
Two Rivers National Wildlife Refuge	Decurrent false aster	Boltonia decurrens	Threatened	Current	Boltonia decurrens Survey	Current
Union Slough National Wildlife Refuge	Prairie bush-clover	Lespedeza leptostachya	Threatened	Current	Prairie Bush Clover Monitoring	Future
Upper Mississippi River National Wildlife and Fish Refuge	Higgins eye (pearlymussel)	Lampsilis higginsii	Endangered	Current	Aquatic Invertebrate Study (La Crosse District), Aquatic Invertebrate (Mc Gregor District), Aquatic Invertebrate Survey (Winona District)	Historic
Upper Mississippi River National Wildlife and Fish Refuge	Sheepnose Mussel	Plethobasus cyphus	Endangered	Current	Aquatic Invertebrate Study (La Crosse District), Aquatic Invertebrate (Mc Gregor District), Aquatic Invertebrate Survey (Winona District)	Historic
Upper Mississippi River National Wildlife and Fish Refuge	Spectaclecase (mussel)	Cumberlandia monodonta	Endangered	Current	Aquatic Invertebrate Study (La Crosse District), Aquatic Invertebrate (Mc Gregor District), Aquatic Invertebrate Survey (Winona District)	Historic
Upper Mississippi River National Wildlife and Fish Refuge	Eastern Massasauga (=rattlesnake)	Sistrurus catenatus	Candidate	Current	Habitat Classification for Eastern Massasauga Rattlesnakes in the Black River Bottoms and Eastern Massasauga Rattlesnake Surveys (La Crosse District)	Historic

Refuge	Common Name	Scientific Name	Status	Species Occurrence	PRIMR Surveys Targeting (or could target) At-Risk Species	PRIMR Status
Whittlesey Creek National Wildlife Refuge	Piping Plover	Charadrius melodus	Endangered	Current	Shorebird Survey	Current
Windom Wetland Management District	Topeka shiner	Notropis topeka (=tristis)	Endangered	Current	Invertebrate/Fish Survey	Current
Windom Wetland Management District	Dakota Skipper	Hesperia dacotae	Threatened	Current	Butterfly Surveys	Future
Windom Wetland Management District	Prairie bush-clover	Lespedeza leptostachya	Threatened	Current	Prairie Bush Clover Survey	Future
Windom Wetland Management District	Western prairie fringed Orchid	Platanthera praeclara	Threatened	Current	Western Prairie Fringed Orchid Survey	current