

Chapter Three

Iowa Fish and Wildlife and Species of Greatest Conservation Need

Required Element #1: “Information on the distribution and abundance of species of wildlife, including low and declining populations as the state fish and wildlife agency deems appropriate, that are indicative of the diversity and health of the state’s wildlife.”

Species Included in the Iowa Wildlife Action Plan

The DNR is the sole agency given the responsibility to manage Iowa's fish and wildlife resources, preserve their habitats (Code of Iowa, Chapter 455A), and establish and protect state-listed endangered or threatened species (chapter 481B.4 and Iowa Administrative Code Chapter 571-77(481B)). Iowa law defines *wildlife* as any species of wild mammal, fish, bird, reptile or amphibian (Code of Iowa sections 456.24, 481A.1, 481A.38, 481A.39, 481A.48). In addition to taxonomic groups designated as *wildlife* in Iowa law, this Plan is intended to guide conservation of all Iowa’s native fauna for which an adequate level of information is available to assess the conservation status and needs. In the first version of the Plan, butterflies, land snails and fresh water mussels were included, because these invertebrates are listed on the state’s endangered and threatened species list. Dragonflies and damselflies were added when significant data were found that listed the distribution and status of species in these groups. For the 2015 version, consideration was given to adding crayfish. A total of 1,115 species were evaluated by subcommittees. Subcommittees considered all species which have been documented in Iowa, including some species which may be vagrant, expanding their range, have been introduced, or have already been extirpated (Table 3- 1).

Determining the Species of Greatest Conservation Need

Taxonomic subcommittees of the IWAP Wildlife Working Group evaluated the status of all species considered for their focal group. The same status assessment criteria were used for all species which are native to Iowa, not already extirpated from the state, not vagrant or accidental in their occurrence within Iowa, and for which there is adequate information to assess conservation status. Until the implementation of the Wildlife Action Plan, Iowa had long lacked a systematic survey to document the distribution and abundance of most wildlife species. Therefore, varying amounts of information were available for subcommittee members to use when assessing taxonomic groups, as a whole, as well as individual species.

Table 3- 1. Number of species evaluated by the IWAP

IWAP taxonomic subcommittees evaluated all species with validated occurrence records for Iowa (includes vagrant species, exotic/introduced species, and those which are now presumed extirpated).

Taxonomic Class	Species	List location
Amphibians	22	Appendix 3
Reptiles	46	Appendix 4
Breeding birds	201	Appendix 5
Non-breeding birds ¹	204	Appendix 6
<i>All birds</i>	<i>405</i>	
Butterflies	123	Appendix 7
Crayfish	8	Appendix 8

Taxonomic Class	Species	List location
Dragonflies and Damselflies	114	Appendix 9
Fish	155	Appendix 10
Mammals	83	Appendix 11
Mussels	52	Appendix 12
Terrestrial snails	96	Appendix 13
Total species evaluated	1,104	

¹ Species that do not nest in Iowa but migrate through the state

Development of Species Conservation Status Assessment Criteria

We utilized 8 criteria to assess the conservation status of all native, extant Iowa wildlife species. An ad hoc working group of the Wildlife Working Group considered a variety of conservation status assessment schemes, from the published literature, before ultimately developing a set of criteria that could reasonably be utilized by each taxonomic subcommittee for assessing wildlife in Iowa. These included a species assessment methodology described by Partners in Flight as well as NatureServe’s ranking system.

The system described in the PIF Handbook on Species Assessment (Panjabi et al. 2012) ranks each species of North American breeding bird based upon seven measures of conservation status:

1. *Population Size* (PS) indicates vulnerability due to the total number of adult individuals in the global population.
2. *Breeding Distribution* (BD) indicates vulnerability due to the geographic extent of a species’ breeding range on a global scale.
3. *Non-breeding Distribution* (ND) indicates vulnerability due to the geographic extent of a species’ non-breeding range on a global scale.
4. *Threats to Breeding* (TB) indicates vulnerability due to the effects of *current and probable future* extrinsic conditions that threaten the ability of populations to survive and successfully reproduce in breeding areas within North America.
5. *Threats to Non-breeding* (TN) indicates vulnerability due to the effects of *current and probable future* extrinsic conditions that threaten the ability of North American breeding populations to survive over the non-breeding season.
6. *Population Trend* (PT) indicates vulnerability due to the direction and magnitude of changes in population size within North America since the mid-1960s.

NatureServe’s Ranking System (Faber-Langendoen et al. 2012), which is used by some state Natural Heritage Programs, also served as the basis for the approach used for this assessment. NatureServe does not independently create the State Ranks (S Ranks) that are listed in the previous version of the IWAP or on NatureServe Explorer. Rather, NatureServe coordinates a network of State Natural Heritage Programs who submit their ranks periodically. NatureServe has more recently moved to the use of a “rank calculator,” which incorporates several factors. These are just starting to be used by the states, so looking up S Ranks on NatureServe Explorer <http://www.natureserve.org/explorer/> won’t necessarily yield results that reflect use of this calculator. Over time S Ranks will be increasingly based upon the use of the rank calculator. Factors included in NatureServe’s Ranking System include:

Rarity:

1. Range Extent – defined as the area contained within an imaginary boundary encompassing all known, inferred, or projected sites of present occurrence of a taxon, excluding vagrancy.
2. Area of Occupancy – area within its “extent of occurrence” which is occupied by a taxon, excluding vagrancy.
3. Population – estimated current total of the species within the area of interest (IA)
4. Number of Occurrences – each occurrence is an area of land or water in which a species is or was present
5. Number of Occurrences or % Area with Good Viability – if current conditions prevail, the occurrence is likely to persist for the foreseeable future in its current condition or better
6. Environmental Specificity – degree to which a species depends upon a relatively scarce set of habitats, substrates, food types, or other biotic/abiotic factors within its overall range (this is to be used mostly when the # of occurrences, range extent or area of occupancy are largely unknown)

Trends:

1. Long-term Trend - degree of change over ~200 years (for area of interest) in population size, range extent, # of occurrences, and/or % area with good viability.
2. Short-term Trend – same as above, for 10 years or 3 generations, whichever is longer.

Threats:

1. Threats – incorporates information on severity, scope, impact and timing
2. Intrinsic Vulnerability – to be used when threats unknown

After discussing these assessment systems, the working group decided on 8 criteria that would be used to assess the species included in Iowa’s Wildlife Action Plan (See Appendix 16 for a detailed description of the ranks associated with each of the following 8 criteria):

1. Global Range Extent (all other criteria are for Iowa only)
2. Area of Occupancy
3. Long-term Trend
4. Short-term Trend
5. Ecological Specialization (Population Concentration)
6. Dietary Specialization
7. General Ecological Specialization
8. Threat Not Addressed Above

The Scoring Process

The Wildlife Working Group developed a scoring process in which each criterion was weighted according to our understanding of the relative contribution of each factor to a species’ overall conservation status. The theoretical potential score for an individual species ranges from 0 - 3.75. Calculated scores ranged from 0.57 (for the Slippershell mussel, which has not been observed in Iowa since 1984) to 3.75 (for several species of low conservation concern that have been expanding their range within Iowa). The cutoff value for SGCN designation was set at ≤ 3.0 (a species score of 3.0 or lower gave a species SGCN status). See Appendix 16 for a detailed explanation of the criteria.

The value of 3.0 (of a possible 3.75) was based on an understanding of how the individual criteria work and the mean species scores (2.96). Not all criteria were expected or intended to have normal distributions. For example, the *Range Extent* criterion exists to significantly reduce the score for the small number of Iowa species which have a global range of less than 40,000 square miles. This is because threats within the Iowa portion of a species’ range, with a small overall range, pose greater risk to the species as a whole. Very few species scored a three or lower for this criterion.

Similarly, the *Ecological Specialization - Population Concentration* criterion is intended to highlight those species that aggregate at a small number of locations, and therefore could be at risk of extirpation given one disastrous event during the time period when the population is aggregated. This criterion was not relevant for most Iowa species. Rather, it served to reduce the scores for a small number of species which face this high-risk situation, regardless of their current trend and distribution. Thus, a hypothetical example of an ‘average’ SGCN species would have a restricted geographic range, occupy only a portion of its former range, be suffering moderate long- and short-term population declines, and be specialized with respect to population concentration, diet, or some other factor. Species with 2 or more fields that are unknown went into a separate “Data Deficient” (DD) category of species - for which information needs are high. These species will be SGCN-DD until such time as there is adequate information to allow assessment of their conservation status. If a species has been extirpated from the state, it was also put into a separate category for further discussion. Examples include the Starhead Topminnow and the Pondmussel. This SGCN-E category was created because some extirpated species are better candidates for conservation efforts than others, depending on whether Iowa remains an important part of their range and whether their conservation status in other areas is stable.

A variety of data resources were utilized by taxonomic subcommittees as they considered which species should be listed as Species of Greatest Conservation Need. In general, the following types of resources were used (see *Specific Resources* section at the end of this chapter for a detailed list of resources):

- Published historic and scientific literature;
- Unpublished reports, scientific surveys and databases maintained by the DNR fisheries, wildlife and water quality bureaus (e.g., Natural Areas Inventory, Multiple Species Inventory and Monitoring Program, Statewide Mussel Survey, Iowa Fish Atlas);
- Personal research and survey data supplied by wildlife ecologists at Iowa educational institutions;
- Museum and personal specimen collections;
- State and regional databases maintained by other conservation organizations (e.g. NatureServe, Partners In Flight, Partners for Amphibian and Reptile Conservation, US Fish and Wildlife Service, US Geological Survey, Iowa Ornithologist’s Union, Iowa Audubon, etc.);
- Personal expertise of working group members and consultants.

Table 3- 2. Proportion of Iowa Species Designated as SGCN.

Taxonomic Group	2012	2015			
	# of SGCN in 2012	# of SGCN in 2015	# Species Evaluated (Valid Iowa Records)	# of Species Assessed (Native Species)	% SGCN of Species Assessed
Amphibians	9	16	22	22	73%
Reptiles	23	40	46	46	87%
Birds – Breeding	67	78	201	195	40%
Birds – Non-breeding	18	34	204	113	30%
Butterflies	38	51	123	109	47%
Crayfish*	N/A	7	8	7	N/A
Dragonflies & Damselflies	28	30	114	106	28%
Fish	74	79	155	146	54%
Mammals	19	22	83	57	39%

Taxonomic Group	2012	2015			
	# of SGCN in 2012	# of SGCN in 2015	# Species Evaluated (Valid Iowa Records)	# of Species Assessed (Native Species)	% SGCN of Species Assessed
Mussels	29	43	52	46	93%
Terrestrial Snails*	8	5	96	5	N/A
Total	313	405	1104	853	

*The entire groups of native Terrestrial Snails and Crayfish were not assessed for SGCN status due to lack of sufficient information.

The status assessment process resulted in lists of SGCN for each taxonomic group included in the Plan. These lists are displayed in Table 3-3 through 3-13.

Future Changes to List of SGCN

As research and monitoring progress, Iowa may find that the conservation status scores assigned to each species during the 2015 Comprehensive Review and Revision have changed. Also, Iowa may be able to complete the status assessment for species that were rated Data Deficient in 2015. This section outlines the process that would be undertaken to evaluate changes to the list of SGCN within taxonomic groups already included in the Plan prior to the next Comprehensive Review and Revision, scheduled for 2025.

Step 1: Taxonomic Subcommittee Completes Status Assessment

The taxonomic subcommittee for the relevant taxon would use the approved criteria to re-do the Species Status Assessment for the species in question (see Appendix 16).

Step 2: Wildlife Working Group Review and Notification to Fish and Wildlife Service

Once the Species Status Assessment process is completed, the results will be reviewed for approval by the Wildlife Working Group. If approved by the Wildlife Working Group, then the potential changes to the list of SGCN would be compiled for submittal to the US Fish and Wildlife Service (USFWS). The Director of DNR would send a letter of intent to make minor revisions to the Plan to the USFWS Region 3 Coordinator of Wildlife and Sportfish Restoration (WSFR) Programs.

Step 3: Public Review and Submittal of Changes to Fish and Wildlife Service

Once the USFWS has been informed of Iowa’s intent to complete a minor revision to the Plan, the list of species to be added to the SGCN category will be made available for public review and comment. After public input is considered and integrated, then the proposed changes to the list of SGCN will be submitted to the USFWS for review and approval.

Evaluation of Additional Taxonomic Groups

As additional information about Iowa wildlife becomes available through biological surveys and research, Iowa may consider evaluating other taxonomic groups for inclusion in the Plan. This section outlines the process that would be undertaken to evaluate any potential additional taxa prior to the Plan’s next Comprehensive Review and Revision, scheduled for 2025.

Step 1: Completion of Nomination Form by Sponsor

The evaluation process begins when an interested party (hereafter, “sponsor”) submits a form to the Wildlife Working Group of the Implementation Committee. The form is available on the DNR’s IWAP website and is included in the Plan as Appendix 17. The preferred taxonomic level for inclusion in the Plan is an entire order or sub-order of species known to occur within Iowa, but we will consider groups as small as complete genera occurring within Iowa. For that entire taxon, the form requests information such as the list of species with documented occurrences in Iowa, how long the taxon has been studied in Iowa and what portions of the state have been surveyed, a list of publications resulting from the work (if any), and a list of the primary people studying the taxon within Iowa (see Appendix 17).

Step 2: Wildlife Working Group-Sponsor Consultation

Once a completed nomination form has been received, members of the Wildlife Working Group will work with the sponsor to determine the feasibility of adding the taxon. Feasibility will depend on several issues: whether there are an adequate number of experts knowledgeable about the taxon to develop a taxon-specific subcommittee, whether there are potential sources of funding for research and conservation projects for the taxon, and whether established monitoring protocols for the taxon can be integrated into the Multiple Species Inventory and Monitoring (MSIM) program.

Step 3: Species Status Assessment

If the sponsor and the Wildlife Working Group determine that inclusion of the taxon is feasible, then a taxon-specific subcommittee will be formed. The subcommittee will complete a Species Status Assessment process. To be included in the Plan, all Iowa species within the taxonomic group will need to have the Species Status Assessment Scoring Criteria completed (see Appendix 16.) This forms the basis for determining which species would be listed as SGCN, as discussed above. If two or more criteria are unknown for a given species, that species will be placed in the “Data Deficient” category of SGCN.

Step 4: Wildlife Working Group Review and Notification to Fish and Wildlife Service

Once the Species Status Assessment process is completed, the results will be reviewed for approval by the Wildlife Working Group. If approved by the Wildlife Working Group, then the potential changes to the list of SGCN would be compiled for submittal to the US Fish and Wildlife Service (USFWS). The Director of DNR would send a letter of intent to make minor revisions to the Plan to the USFWS Region 3 Coordinator of Wildlife and Sportfish Restoration (WSFR) Programs.

Step 5: Public Review and Submittal of Changes to Fish and Wildlife Service

Once the USFWS has been informed of Iowa’s intent to complete a minor revision to the Plan, the list of species to be added to the SGCN category will be made available for public review and comment. After public input is considered and integrated, then the proposed changes to the list of SGCN will be submitted to the USFWS for review and approval.

Table 3- 3. Amphibians of Greatest Conservation Need

Taxonomic order derived from the Society for the Study of Amphibians and Reptiles Standard English and Scientific Names Document, which can be accessed at: <http://ssarherps.org/>

Iowa Listing: Species having Iowa Endangered, Threatened, or Special Concern Status (from Iowa Code Chapter 77) as of 2015. For up-to-date state listing information, please see the Threatened and Endangered Species Program page on the DNR website at www.iowadnr.gov

National Rank/Listing: **National Rank** refers to NatureServe Conservation Status Ranks. N1 = Critically Imperiled in Nation; N2 = Imperiled in Nation; N3 = Vulnerable in Nation; N4 = Apparently Secure in Nation; N5 = Secure in Nation. For additional definitions and explanation see Appendix 14. **National Listing** refers to federally Endangered or Threatened species.

Rows highlighted in gray: indicate data deficient SGCN for which information needed to assess conservation status is lacking.

Assessments of species conservation status undertaken as part of the IWAP are used to determine SGCN status only. Other information is provided as a reference. Updates to State Wildlife Action Plans, NatureServe National Ranks, Federal T&E Status, and State T&E Status are each independent processes, undertaken by different entities with differing timeframes. As such, the various listings or status ranks for a given species at a given point in time may not always appear to be in accord.

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
1	Blue-spotted Salamander	<i>Ambystoma laterale</i>	Endangered	N5
2	Smallmouth Salamander	<i>Ambystoma texanum</i>		N5
3	Tiger Salamander	<i>Ambystoma tigrinum</i>		N5
4	Common Mudpuppy	<i>Necturus maculosus</i>	Threatened	N5
5	Eastern Newt	<i>Notophthalmus viridescens</i>	Threatened	N5
6	Great Plains Toad	<i>Anaxyrus cognatus</i>		N5
7	Fowler’s Toad	<i>Anaxyrus fowleri</i>		N5
8	Woodhouse’s Toad	<i>Anaxyrus woodhousii</i>		N5
9	Blanchard’s Cricket Frog	<i>Acris crepitans</i>		N5
10	Cope’s Gray Treefrog	<i>Hyla chrysoscelis</i>		N5
11	Eastern Gray Treefrog	<i>Hyla versicolor</i>		N5
12	Crawfish Frog	<i>Lithobates areolatus</i>	Endangered	N4
13	Pickerel Frog	<i>Lithobates palustris</i>		N5
14	Northern Leopard Frog	<i>Lithobates pipiens</i>		N5
15	Southern Leopard Frog	<i>Lithobates sphenoccephalus</i>		N5
16	Plains Spadefoot	<i>Spea bombifrons</i>		N5

Table 3- 4. Reptiles of Greatest Conservation Need

Taxonomic order derived from the Society for the Study of Amphibians and Reptiles Standard English and Scientific Names Document, which can be accessed at: <http://ssarherps.org/>

Iowa Listing: Species having Iowa Endangered, Threatened, or Special Concern Status (from Iowa Code Chapter 77) as of 2015. For up-to-date state listing information, please see the Threatened and Endangered Species Program page on the DNR website at www.iowadnr.gov

National Rank/Listing: **National Rank** refers to NatureServe Conservation Status Ranks. N1 = Critically Imperiled in Nation; N2 = Imperiled in Nation; N3 = Vulnerable in Nation; N4 = Apparently Secure in Nation; N5 = Secure in Nation. For additional definitions and explanation see Appendix 14. **National Listing** refers to federally Endangered or Threatened species.

Rows highlighted in gray: indicate data deficient SGCN for which information needed to assess conservation status is lacking.

Assessments of species conservation status undertaken as part of the IWAP are used to determine SGCN status only. Other information is provided as a reference. Updates to State Wildlife Action Plans, NatureServe National Ranks, Federal T&E Status, and State T&E Status are each independent processes, undertaken by different entities with differing timeframes. As such, the various listings or status ranks for a given species at a given point in time may not always appear to be in accord.

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
1	Snapping Turtle	<i>Chelydra serpentina</i>		N5
2	Blanding's Turtle	<i>Emydoidea blandingii</i>	Threatened	N4
3	Wood Turtle	<i>Glyptemys insculpta</i>	Endangered	N3
4	Northern Map Turtle	<i>Graptemys geographica</i>		N5
5	Southern Map Turtle	<i>Graptemys ouachitensis</i>		N5
6	False Map Turtle	<i>Graptemys pseudogeographica</i>		N5
7	Ornate Box Turtle	<i>Terrapene ornata</i>	Threatened	N5
8	Yellow Mud Turtle	<i>Kinosternon flavescens</i>	Endangered	N5
9	Eastern Musk Turtle	<i>Sternotherus odoratus</i>	Threatened	N5
10	Smooth Softshell	<i>Apalone mutica</i>		N5
11	Spiny Softshell	<i>Apalone spinifera</i>		N5
12	Slender Glass Lizard	<i>Ophisaurus attenuatus</i>	Threatened	N5
13	Common Five-lined Skink	<i>Plestiodon fasciatus</i>		N5
14	Great Plains Skink	<i>Plestiodon obsoletus</i>	Endangered	N5
15	Prairie Skink	<i>Plestiodon septentrionalis</i>		N5
16	Six-Lined Racerunner	<i>Aspidocelis sexlineatus</i>		N5
17	Western Worm Snake	<i>Carphophis vermis</i>	Threatened	N5
18	(Prairie) Ringneck Snake	<i>Diadophis punctatus</i>		N5
19	Western (Plains) Hog-nosed Snake	<i>Heterodon nasicus</i>	Endangered	N5
20	Eastern Hognose Snake	<i>Heterodon platirhinos</i>		N5
21	Prairie Kingsnake	<i>Lampropeltis calligaster</i>		N5
22	Speckled Kingsnake	<i>Lampropeltis holbrooki</i>	Threatened	N5

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
23	*Plainbelly (Copperbelly) Water Snake	<i>Nerodia erythrogaster</i>	Endangered	N5 Threatened
24	Diamondback Water Snake	<i>Nerodia rhombifer</i>	Threatened	N5
25	Common Water Snake	<i>Nerodia sipedon</i>		N5
26	Smooth Green Snake	<i>Opheodrys vernalis</i>	Special Concern	N5
27	Western Rat Snake	<i>Elaphe obsoleta</i>		N5
28	Western Fox Snake	<i>Pantherophis ramspotti</i>		N5
29	Gopher (Bull) Snake	<i>Pituophis catenifer</i>	Special Concern	N5
30	Graham's Crayfish Snake	<i>Regina grahamii</i>		N5
31	(Northern) Redbelly Snake	<i>Storeria occipitomaculata</i>		N5
32	Western Ribbon Snake	<i>Thamnophis proximus</i>		N5
33	Plains Garter Snake	<i>Thamnophis radix</i>		N5
34	Lined snake	<i>Tropidoclonion lineatum</i>		N5
35	Smooth Earthsnake	<i>Virginia valeriae</i>		N5
36	Copperhead	<i>Agkistrodon contortrix</i>	Endangered	N5
37	Timber Rattlesnake	<i>Crotalus horridus</i>		N4
38	Prairie Rattlesnake	<i>Crotalus viridis</i>	Endangered	N5
39	Eastern Massasauga	<i>Sistrurus catenatus</i>		N3 Candidate
40	Western Massasauga	<i>Sistrurus turgeminus</i>		N3N4 Candidate

*The Copperbelly Water Snake (*Nerodia erythrogaster neglecta*) was renamed Plainbelly Water Snake (*Nerodia erythrogaster*) after the subspecies designation was removed. However, as of 2015, the Copperbelly Water Snake (*Nerodia erythrogaster neglecta*) is still federally listed as threatened (status not yet updated to show recent taxonomic name change).

Table 3- 5. Breeding Birds of Greatest Conservation Need

Taxonomic order derived from the American Ornithologists' Union Check-List of North American Birds, which can be accessed at: <http://www.aou.org/checklist/north/>.

Iowa Listing: Species having Iowa Endangered, Threatened, or Special Concern Status (from Iowa Code Chapter 77) as of 2015. For up-to-date state listing information, please see the Threatened and Endangered Species Program page on the DNR website at www.iowadnr.gov.

National Rank/Listing: **National Rank** refers to NatureServe Conservation Status Ranks. N1 = Critically Imperiled in Nation; N2 = Imperiled in Nation; N3 = Vulnerable in Nation; N4 = Apparently Secure in Nation; N5 = Secure in Nation. For additional definitions and explanation see Appendix 14. **National Listing** refers to federally Endangered or Threatened species.

Regionally Important: Partners in Flight regionally important birds in Bird Conservation Regions 11 (Prairie Pothole), 22 (Eastern Tallgrass Prairie), and 23 (Prairie Hardwood Transition).

Rows highlighted in gray: indicate data deficient SGCN for which information needed to assess conservation status is lacking.

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	Common Name	Scientific Name	Iowa Listing	National Rank/Listing	Regionally Important
1	Trumpeter Swan	<i>Cygnus buccinator</i>		N4B, N4N	
2	American Wigeon	<i>Anas americana</i>		N5B, N5N	
3	Blue-winged Teal	<i>Anas discors</i>		N5B, N5N	
4	Northern Pintail	<i>Anas acuta</i>		N5B, N5N	
5	Canvasback	<i>Aythya valisineria</i>		N5B, N5N	
6	Redhead	<i>Aythya americana</i>		N5B, N5N	
7	Ring-necked Duck	<i>Aythya collaris</i>		N5B, N5N	
8	Lesser Scaup	<i>Aythya affinis</i>		N5B, N5N	
9	Northern Bobwhite	<i>Colinus virginianus</i>		N5	22, 23
10	Ruffed Grouse	<i>Bonasa umbellus</i>		N5	11, 23
11	Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	Presumed Extirpated	N4	11
12	Greater Prairie-Chicken	<i>Tympanuchus cupido</i>		N4	11, 22, 23
13	Red-necked Grebe	<i>Podiceps grisegena</i>		N5B, N5N	
14	Eared Grebe	<i>Podiceps nigricollis</i>		N5B, N5N	
15	American White Pelican	<i>Pelecanus erythrorhynchos</i>		N4	
16	American Bittern	<i>Botaurus lentiginosus</i>		N4B, N4N	
17	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>		N5B, N5N	
18	White-faced Ibis	<i>Plegadis chihi</i>		N4B, N4N	
19	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Special Concern	N5B, N5N	

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing	Regionally Important
20	Northern Harrier	<i>Circus cyaneus</i>	Endangered	N5B, N5N	11
21	Red-shouldered Hawk	<i>Buteo lineatus</i>	Endangered	N5B, N5N	
22	Broad-winged Hawk	<i>Buteo platypterus</i>		N5B	
23	Swainson's Hawk	<i>Buteo swainsoni</i>		N5B	11
24	King Rail	<i>Rallus elegans</i>	Endangered	N4B, N4N	
25	Common Gallinule (formerly Moorhen)	<i>Gallinula chloropus</i>		N5B, N5N	
26	Piping Plover	<i>Charadrius melodus</i>	Endangered	N3B, N3N Endangered	
27	Upland Sandpiper	<i>Bartramia longicauda</i>		N5B	
28	Wilson's Snipe	<i>Gallinago delicata</i>		N5B, N5N	
29	American Woodcock	<i>Scolopax minor</i>		N5B, N5N	
30	Wilson's Phalarope	<i>Phalaropus tricolor</i>		N5B	
31	Franklin's Gull	<i>Larus pipixcan</i>		N4B	
32	Least Tern	<i>Sterna antillarum</i>	Endangered	N4B Endangered	
33	Black Tern	<i>Chlidonias niger</i>	Special Concern	N4B	
34	Forster's Tern	<i>Sterna forsteri</i>	Special Concern	N5B, N5N	
35	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>		N5B	22, 23
36	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>		N5B	11, 22, 23
37	Barn Owl	<i>Tyto alba</i>	Endangered	N5	
38	Eastern Screech-owl	<i>Otus asio</i>		N5	
39	Burrowing Owl	<i>Speotyto cunicularia</i>		N4B, N4N	11
40	Long-eared Owl	<i>Asio otus</i>	Threatened	N5B, N5N	
41	Short-eared Owl	<i>Asio flammeus</i>	Endangered	N5B, N5N	11
42	Common Nighthawk	<i>Chordeiles minor</i>		N5B	11, 22
43	Chuck-will's-widow	<i>Caprimulgus carolinensis</i>		N5B, NNRN	
44	Eastern Whip-poor-will	<i>Caprimulgus vociferus</i>		N5B, NNRN	22, 23
45	Chimney Swift	<i>Chaetura pelagica</i>		N5B	11, 22, 23
46	Belted Kingfisher	<i>Ceryle alcyon</i>		N5B, N5N	11, 22, 23
47	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>		N5B, N5N	11, 22, 23
48	Northern Flicker	<i>Colaptes auratus</i>		N5B, N5N	11, 22, 23
49	American Kestrel	<i>Falco sparverius</i>		N5B, N5N	23
50	Peregrine Falcon	<i>Falco peregrinus</i>	Special Concern	N4B, N4N	
51	Eastern Wood-pewee	<i>Contopus virens</i>		N5B	22
52	Acadian Flycatcher	<i>Empidonax virescens</i>		N5B	22, 23
53	Say's Phoebe	<i>Sayornis saya</i>		N4N, N5B	

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing	Regionally Important
54	Eastern Kingbird	<i>Tyrannus tyrannus</i>		N5B	11, 22, 23
55	Loggerhead Shrike	<i>Lanius ludovicianus</i>		N4	11, 22
56	Bell's Vireo	<i>Vireo bellii</i>		N4B	22
57	Horned Lark	<i>Eremophila alpestris</i>		N5B, N5N	11, 22, 23
58	Purple Martin	<i>Progne subis</i>		N5B	22
59	Bank Swallow	<i>Riparia riparia</i>		N5B	11, 22, 23
60	Sedge Wren	<i>Cistothorus platensis</i>		N4B, N5N	11
61	Bewick's Wren	<i>Thryomanes bewickii</i>		N5B	
62	Veery	<i>Catharus fuscescens</i>		N5B	23
63	Wood Thrush	<i>Hylocichla mustelina</i>		N5B	22, 23
64	Brown Thrasher	<i>Toxostoma rufum</i>		N5	11, 22, 23
65	Worm-eating Warbler	<i>Helmitheros vermivorus</i>		N5B	
66	Golden-winged Warbler	<i>Vermivora chrysoptera</i>		N4B	11, 23
67	Prothonotary Warbler	<i>Protonotaria citrea</i>		N5B	22
68	Kentucky Warbler	<i>Geothlypis formosus</i>		N5B	22
69	Common Yellowthroat	<i>Geothlypis trichas</i>		N5	22, 23
70	Cerulean Warbler	<i>Setophaga cerulea</i>		N4B	22, 23
71	Field Sparrow	<i>Spizella pusilla</i>		N5	11, 22, 23
72	Grasshopper Sparrow	<i>Ammodramus savannarum</i>		N5B, N5N	11, 22, 23
73	Henslow's Sparrow	<i>Ammodramus henslowii</i>	Threatened	N3B, N4N	22, 23
74	Dickcissel	<i>Spiza americana</i>		N5B	11, 22, 23
75	Bobolink	<i>Dolichonyx oryzivorus</i>		N5B	11, 22, 23
76	Eastern Meadowlark	<i>Sturnella magna</i>		N5	22, 23
77	Western Meadowlark	<i>Sturnella neglecta</i>		N5	11
78	Baltimore Oriole	<i>Icterus galbula</i>		N5B	22, 23

Table 3- 6. Non-breeding Birds of Greatest Conservation Need

Taxonomic order derived from the American Ornithologists' Union Check-List of North American Birds, which can be accessed at: <http://www.aou.org/checklist/north/>.

National Rank/Listing: **National Rank** refers to NatureServe Conservation Status Ranks. N1 = Critically Imperiled in Nation; N2 = Imperiled in Nation; N3 = Vulnerable in Nation; N4 = Apparently Secure in Nation; N5 = Secure in Nation. For additional definitions and explanation see Appendix 14. **National Listing** refers to federally Endangered or Threatened species.

Regionally Important: Partners in Flight regionally important birds in Bird Conservation Regions 11 (Prairie Pothole), 22 (Eastern Tallgrass Prairie), and 23 (Prairie Hardwood Transition).

Rows highlighted in gray: indicate data deficient SGCN for which information needed to assess conservation status is lacking.

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	Common Name	Scientific Name	National Rank/Listing	Regionally Important
1	Greater Scaup	<i>Aythya marila</i>	N5B, N5N	
2	Common Loon	<i>Gavia immer</i>	N4B, N5N	
3	Little Blue Heron	<i>Egretta caerulea</i>	N5B, N5N	
4	Yellow Rail	<i>Coturnicops noveboracensis</i>	N3B, N4N	
5	Black Rail	<i>Laterallus jamaicensis</i>	N3B, N3N	
6	Whooping Crane	<i>Grus americana</i>	N1N Endangered	
7	Black-bellied plover	<i>Pluvialis squatarola</i>	N5B, N5N	
8	American Golden-Plover	<i>Pluvialis dominica</i>	N5B	
9	Lesser Yellowlegs	<i>Tringa flavipes</i>	N5B, N5N	
10	Whimbrel	<i>Numenius phaeopus</i>	N5B, N5N	
11	Long-billed Curlew	<i>Numenius americanus</i>	N5B, N5N	
12	Hudsonian Godwit	<i>Limosa haemastica</i>	N3?B	
13	Marbled Godwit	<i>Limosa fedoa</i>	N5B, N5N	
14	Ruddy Turnstone	<i>Arenaria interpres</i>	N5B, N5N	
15	Red Knot	<i>Calidris canutus</i>	N2N3B, N3N Threatened	
16	Sanderling	<i>Calidris alba</i>	N4B, N5N	
17	Semipalmated Sandpiper	<i>Calidris pusilla</i>	N5B	
18	White-rumped Sandpiper	<i>Calidris fuscicollis</i>	N3B	
19	Pectoral Sandpiper	<i>Calidris melanotos</i>	N5B	
20	Stilt Sandpiper	<i>Micropalama himantopus</i>	N3B, N4N	
21	Buff-breasted Sandpiper	<i>Tryngites subruficollis</i>	N4B	
22	Short-billed Dowitcher	<i>Limnodromus griseus</i>	N5B, N5N	

	Common Name	Scientific Name	National Rank/Listing	Regionally Important
23	Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>	N5B, N5N	
24	Caspian Tern	<i>Sterna caspia</i>	N4N5B, N4N	
25	Olive-sided Flycatcher	<i>Contopus cooperi</i>	N4B	
26	Sprague's pipit	<i>Anthus spragueii</i>	N4B, N4N Candidate	11
27	Bohemian Waxwing	<i>Bombycilla garrulus</i>	N5B, N5N	
28	Smith's Longspur	<i>Calcarius pictus</i>	N4B, N5N	
29	Bay-breasted Warbler	<i>Dendroica castanea</i>	N5B	
30	Canada Warbler	<i>Cardellina canadensis</i>	N5B	
31	American Tree Sparrow	<i>Spizella arborea</i>	N5B, N5N	
32	Le Conte's Sparrow	<i>Ammodramus leconteii</i>	N3B, N4N	11
33	Harris's Sparrow	<i>Zonotrichia querula</i>	N5N	
34	White-winged Crossbill	<i>Loxia leucoptera</i>	N5	

Table 3- 7. Butterflies of Greatest Conservation Need

Taxonomic order and scientific names derived from: Opler, P.A., and A.D. Warren. 2002. Butterflies of North America. 2. Scientific Names List for Butterfly Species of North America, north of Mexico. C.P Gillette Museum of Arthropod Diversity, Department of Bioagricultural Sciences and Pest Management, Colorado State University, Fort Collins, Colorado. 79 pp. This can be accessed at: http://www.biology.ualberta.ca/old_site/uasm/Opler&Warren.pdf

Iowa Listing: species having Iowa Endangered, Threatened, or Special Concern Status (from Iowa Code Chapter 77) as of 2015. For up-to-date state listing information, please see the Threatened and Endangered Species Program page on the DNR website at www.iowadnr.gov

National Rank/Listing: **National Rank** refers to NatureServe Conservation Status Ranks. N1 = Critically Imperiled in Nation; N2 = Imperiled in Nation; N3 = Vulnerable in Nation; N4 = Apparently Secure in Nation; N5 = Secure in Nation. For additional definitions and explanation see Appendix 14. **National Listing** refers to federally Endangered or Threatened species.

Rows highlighted in gray: indicate data deficient SGCN for which information needed to assess conservation status is lacking.

Assessments of species conservation status undertaken as part of the IWAP are used to determine SGCN status only. Other information is provided as a reference. Updates to State Wildlife Action Plans, NatureServe National Ranks, Federal T&E Status, and State T&E Status are each independent processes, undertaken by different entities with differing timeframes. As such, the various listings or status ranks for a given species at a given point in time may not always appear to be in accord.

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
1	Pipevine Swallowtail	<i>Battus philenor</i>	Special Concern	N5
2	Zebra Swallowtail	<i>Eurytides marcellus</i>	Special Concern	N5
3	Spicebush Swallowtail	<i>Papilio troilus</i>		N4?
4	Olympia Marble	<i>Euchloe olympia</i>	Special Concern	N4N5
5	Harvester	<i>Feniseca tarquinius</i>		N4
6	Purplish Copper	<i>Lycaena helloides</i>	Special Concern	N5
7	Acadian Hairstreak	<i>Satyrium acadica</i>	Special Concern	N5
8	Edward's Hairstreak	<i>Satyrium edwardsii</i>	Special Concern	N4
9	Hickory Hairstreak	<i>Satyrium caryaevorum</i>	Special Concern	N4
10	Striped Hairstreak	<i>Satyrium liparops</i>	Special Concern	N5
11	White M. Hairstreak	<i>Parrhasius m-album</i>		N5
12	Henry's Elfin	<i>Callophrys henrici</i>		N5
13	Reakirt's Blue	<i>Echinargus (Hemiargus) isola</i>		N5
14	Silvery Blue	<i>Glaucopsyche lygdamus</i>	Threatened	N5
15	Melissa Blue	<i>Plebejus (Lycaeides) melissa</i>		N5
16	Aphrodite Fritillary	<i>Speyeria aphrodite</i>		N5
17	Regal Fritillary	<i>Speyeria idalia</i>	Special Concern	N3
18	Silver-bordered Fritillary	<i>Boloria selene</i>		N5
19	Gorgone Checkerspot	<i>Chlosyne gorgone</i>		N5
20	Baltimore Checkerspot	<i>Euphydryas phaeton</i>	Threatened	N4
21	'Ozark' Baltimore Checkerspot	<i>Euphydryas phaeton ozarkae</i>	Threatened	N3

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
22	Compton Tortoiseshell	<i>Nymphalis vaualbum (l-album)</i>		N5
23	Common Ringlet	<i>Coenonympha tullia</i>	Endangered	N5
24	Eyed Brown	<i>Satyrodes eurydice</i>		N4
25	Monarch	<i>Danaus plexippus</i>		N2N3
26	Southern Cloudywing	<i>Thorybes bathyllus</i>		N5
27	Hayhurst's Scallopwing	<i>Staphylus hayhurstii</i>		N5
28	Dreamy Duskywing	<i>Erynnis icelus</i>	Special Concern	N5
29	Sleepy Duskywing	<i>Erynnis brizo</i>	Special Concern	N5
30	Juvenal's Duskywing	<i>Erynnis juvenalis</i>		N5
31	Mottled Duskywing	<i>Erynnis martialis</i>		N3
32	Columbine Duskywing	<i>Erynnis lucilius</i>	Special Concern	N4
33	Poweshiek Skipperling	<i>Oarisma poweshiek</i>	Threatened	N1 Endangered
34	Ottoo Skipper	<i>Hesperia ottoe</i>	Special Concern	N3N4
35	Leonard's Skipper	<i>Hesperia leonardus</i>	Special Concern	N4
36	Dakota Skipper	<i>Hesperia dacotae</i>	Endangered	N2 Threatened
37	Crossline Skipper	<i>Polites origines</i>		N4N5
38	Long Dash	<i>Polites mystic</i>		N5
39	Northern Broken-dash	<i>Wallengrenia egeremet</i>		N5
40	Little Glassywing	<i>Pompeius verna</i>		N5
41	Arogos Skipper	<i>Atrytone arogos</i>	Special Concern	N3
42	Byssus Skipper	<i>Problema byssus</i>	Threatened	N3N4
43	Mulberry Wing	<i>Poanes massasoit</i>	Threatened	N4
44	Broad-winged Skipper	<i>Poanes viator</i>	Special Concern	N5
45	Dion Skipper	<i>Euphyes dion</i>	Special Concern	N4
46	Black Dash	<i>Euphyes conspicua</i>		N4
47	Two-spotted Skipper	<i>Euphyes bimacula</i>	Special Concern	N4
48	Dusted Skipper	<i>Atrytonopsis hianna</i>	Special Concern	N4N5
49	Pepper and Salt Skipper	<i>Amblyscirtes hegon</i>	Special Concern	N5
50	Common Roadside-skipper	<i>Amblyscirtes vialis</i>		N4
51	Swarthy Skipper	<i>Nastra lherminier</i>		N5

Table 3- 8. Crayfish of Greatest Conservation Need

Taxonomic order and scientific names derived from NatureServe Explorer.

Iowa Listing: As of 2015, no Crayfish species have been included in Iowa’s list of species having Endangered, Threatened, or Special Concern Status (from Iowa Code Chapter 77). For up-to-date state listing information, please see the Threatened and Endangered Species Program page on the DNR website at www.iowadnr.gov

National Rank/Listing: **National Rank** refers to NatureServe Conservation Status Ranks. N1 = Critically Imperiled in Nation; N2 = Imperiled in Nation; N3 = Vulnerable in Nation; N4 = Apparently Secure in Nation; N5 = Secure in Nation. For additional definitions and explanation see Appendix 14. **National Listing** refers to federally Endangered or Threatened species.

Rows highlighted in gray: indicate data deficient SGCN for which information needed to assess conservation status is lacking.

Assessments of species conservation status undertaken as part of the IWAP are used to determine SGCN status only. Other information is provided as a reference. Updates to State Wildlife Action Plans, NatureServe National Ranks, Federal T&E Status, and State T&E Status are each independent processes, undertaken by different entities with differing timeframes. As such, the various listings or status ranks for a given species at a given point in time may not always appear to be in accord.

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
1	Devil Crayfish	<i>Cambarus diogenes</i>		N5
2	Calico Crayfish	<i>Orconectes immunis</i>		N5
3	Golden Crayfish	<i>Orconectes luteus</i>		N5
4	Northern Clearwater Crayfish	<i>Orconectes propinquus</i>		N5
5	Virile Crayfish	<i>Orconectes virilis</i>		N5
6	Prairie Crayfish	<i>Procambarus gracilis</i>		N5
7	White River Crayfish	<i>Procambrus acutus</i>		NNR

Table 3- 9. Dragonflies and Damselflies of Greatest Conservation Need

Taxonomic order and scientific names derived from: Paulson, D.R., and S.W. Dunkle, eds. 2009. A Checklist of North American Odonata. Accessed at: http://www.odonatacentral.org/docs/NA_Odonata_Checklist_2009.pdf

Iowa Listing: As of 2015, no Dragonfly or Damselfly species have been included in Iowa’s list of species having Endangered, Threatened, or Special Concern Status (from Iowa Code Chapter 77). For up-to-date state listing information, please see the Threatened and Endangered Species Program page on the DNR website at www.iowadnr.gov

National Rank/Listing: National Rank refers to NatureServe Conservation Status Ranks. N1 = Critically Imperiled in Nation; N2 = Imperiled in Nation; N3 = Vulnerable in Nation; N4 = Apparently Secure in Nation; N5 = Secure in Nation. For additional definitions and explanation see Appendix 14. **National Listing** refers to federally Endangered or Threatened species.

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	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
1	Spotted Spreadwing	<i>Lestes congener</i>		N5
2	Amber-winged Spreadwing	<i>Lestes eurinus</i>		N4
3	Sweetflag Spreadwing	<i>Lestes forcipatus</i>		N5
4	Paiute Dancer	<i>Argia alberta</i>		N4
5	Springwater Dancer	<i>Argia plana</i>		N5
6	Prairie Bluet	<i>Coenagrion angulatum</i>		N3?
7	Taiga Bluet	<i>Coenagrion resolutum</i>		N5
8	Boreal Bluet	<i>Enallagma boreale</i>		N5
9	Alkali Bluet	<i>Enallagma clausum</i>		N5
10	Western Forktail	<i>Ischnura perparva</i>		N5
11	Sedge Sprite	<i>Nehalennia irene</i>		N5
12	Canada Darner	<i>Aeshna canadensis</i>		N5
13	Variable Darner	<i>Aeshna interrupta</i>		N5
14	Midland Clubtail	<i>Gomphus fraternus</i>		N5
15	Sulphur-tipped Clubtail	<i>Gomphus militaris</i>		N5
16	Rapids Clubtail	<i>Gomphus quadricolor</i>		N3N4
17	Rusty Snaketail	<i>Ophiogomphus rupinsulensis</i>		N5
18	Pale Snaketail	<i>Ophiogomphus severus</i>		N5
19	Sioux Snaketail	<i>Ophiogomphus smithi</i>		N2
20	Westfall’s Snaketail	<i>Ophiogomphus westfalli</i>		N3
21	Brimstone Clubtail	<i>Stylurus intricatus</i>		N4
22	Elusive Clubtail	<i>Stylurus notatus</i>		N3

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
23	Arrow Clubtail	<i>Stylurus spiniceps</i>		N4
24	Stream Cruiser	<i>Didymops transversa</i>		N5
25	Royal River Cruiser	<i>Macromia taeniolata</i>		N5
26	Slender Baskettail	<i>Epitheca costalis</i>		N5
27	Smoky Shadowdragon	<i>Neurocordulia molesta</i>		N4
28	Stygian Shadowdragon	<i>Neurocordulia yamaskanensis</i>		N5
29	Plains Emerald	<i>Somatochlora ensigera</i>		N4
30	Carolina Saddlebags	<i>Tramea carolina</i>		N5

Table 3- 10. Fish of Greatest Conservation Need

Taxonomy from: Page, L.M., H. Espinosa-Perez, L.T. Findley, C.R. Gilbert, R.N. Lea, N.E. Mandrak, R.L. Mayden, and J.S. Nelson. 2013. Common and scientific names of fishes from the United States, Canada, and Mexico, 7th Edition. American Fisheries Society, Special Publication 34, Bethesda, MD.

Iowa Listing: species having Iowa Endangered, Threatened, or Special Concern Status (from Iowa Code Chapter 77) as of 2015. For up-to-date state listing information, please see the Threatened and Endangered Species Program page on the DNR website at www.iowadnr.gov

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Rows highlighted in gray: indicate data deficient SGCN for which information needed to assess conservation status is lacking.

Assessments of species conservation status undertaken as part of the IWAP are used to determine SGCN status only. Other information is provided as a reference. Updates to State Wildlife Action Plans, NatureServe National Ranks, Federal T&E Status, and State T&E Status are each independent processes, undertaken by different entities with differing timeframes. As such, the various listings or status ranks for a given species at a given point in time may not always appear to be in accord.

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
1	Chestnut lamprey	<i>Ichthyomyzon castaneus</i>	Threatened	N4
2	Northern brook lamprey	<i>Ichthyomyzon fossor</i>		N4
3	Silver lamprey	<i>Ichthyomyzon unicuspis</i>		N5
4	American brook lamprey	<i>Lampetra appendix</i>	Threatened	N4
5	Lake sturgeon	<i>Acipenser fulvescens</i>	Endangered	N3N4
6	Pallid sturgeon	<i>Scaphirhynchus albus</i>	Endangered	N2 Endangered
7	Shovelnose sturgeon	<i>Scaphirhynchus platyrhynchus</i>		N4 Threatened*
8	Paddlefish	<i>Polyodon spathula</i>		N4
9	American eel	<i>Anguilla rostrata</i>		N4
10	Skipjack herring	<i>Alosa chrysochloris</i>		N5
11	Largescale stoneroller	<i>Campostoma oligolepis</i>		N5
12	Gravel chub	<i>Erimystax x-punctatus</i>		N4
13	Western silvery minnow	<i>Hybognathus argyritis</i>		N4
14	Mississippi silvery minnow	<i>Hybognathus nuchalis</i>		N5
15	Plains minnow	<i>Hybognathus placitus</i>		N4
16	Pallid shiner	<i>Hybopsis amnis</i>		N4
17	Redfin shiner	<i>Lythrurus umbratilis</i>		N5
18	Shoal chub	<i>Macrhybopsis hyostomus</i>		N5
19	Sturgeon chub	<i>Macrhybopsis gelida</i>		N3
20	Sicklefin chub	<i>Macrhybopsis meeki</i>		N3
21	Pearl dace	<i>Margariscus margarita</i>	Endangered	N5

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
22	Golden shiner	<i>Notemigonus crysoleucas</i>		N5
23	Pugnose shiner	<i>Notropis anogenus</i>	Endangered	N3
24	River shiner	<i>Notropis blennioides</i>		N5
25	Silverband shiner	<i>Notropis shumardi</i>		N5
26	Ghost shiner	<i>Notropis buchanaui</i>		N5
27	Blacknose shiner	<i>Notropis heterolepis</i>	Threatened/ Possibly Extirpated	N4
28	Ozark minnow	<i>Notropis nubilis</i>		N5
29	Carmine shiner	<i>Notropis percobromus</i>		N5
30	Weed shiner	<i>Notropis texanus</i>	Endangered	N5
31	Topeka shiner	<i>Notropis topeka</i>	Threatened	N3 Endangered
32	Mimic shiner	<i>Notropis volucellus</i>		N5
33	Channel shiner	<i>Notropis wickliffi</i>		N5
34	Pugnose minnow	<i>Opsopoeodus emiliae</i>		N5
35	Suckermouth minnow	<i>Phenacobius mirabilis</i>		N5
36	Southern redbelly dace	<i>Phoxinus erythrogaster</i>		N5
37	Flathead chub	<i>Platygobio gracilis</i>		N5
38	Longnose dace	<i>Rhinichthys cataractae</i>		N5
39	Blue sucker	<i>Cycleptus elongatus</i>		N3
40	Lake chubsucker	<i>Erimyzon succetta</i>		N5
41	Black buffalo	<i>Ictiobus niger</i>		N5
42	Spotted sucker	<i>Minytrema melanops</i>		N5
43	Silver redhorse	<i>Moxostoma anisurum</i>		N5
44	River redhorse	<i>Moxostoma carinatum</i>		N4
45	Black redhorse	<i>Moxostoma duquesnei</i>	Threatened	N5
46	Brown bullhead	<i>Ameiurus nebulosus</i>		N5
47	Blue catfish	<i>Ictalurus furcatus</i>		N5
48	Slender madtom	<i>Noturus exilis</i>		N5
49	Tadpole madtom	<i>Noturus gyrinus</i>		N5
50	Freckled madtom	<i>Noturus nocturnus</i>	Endangered	N5
51	Redfin (Grass) pickerel	<i>Esox americanus</i>	Threatened	N5
52	Northern pike	<i>Esox lucius</i>		N5
53	Central mudminnow	<i>Umbra limi</i>		N5
54	Brook Trout	<i>Salvelinus fontinalis</i>		N5
55	Trout perch	<i>Percopsis omiscomaycus</i>		N5
56	Pirate perch	<i>Aphredoderus sayanus</i>	Special Concern	N5
57	Burbot	<i>Lota lota</i>	Threatened	N5
58	Brook silverside	<i>Labidesthes sicculus</i>		N5

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
59	Banded killifish	<i>Fundulus diaphanus</i>		N5
60	Starhead topminnow	<i>Fundulus dispar</i>		N4
61	Blackstripe topminnow	<i>Fundulus notatus</i>		N5
62	Plains topminnow	<i>Fundulus sciadicus</i>		N4
63	Mottled sculpin	<i>Cottus bairdii</i>		N5
64	Slimy sculpin	<i>Cottus cognatus</i>		N5
65	Rock bass	<i>Ambloplites rupestris</i>		N5
66	Longear sunfish†	<i>Lepomis megalotis</i>		N5
67	Northern sunfish†	<i>Lepomis peltastes</i>		N5
68	Western sand darter	<i>Ammocrypta clara</i>	Threatened	N3
69	Crystal darter	<i>Crystallaria asprella</i>		N3
70	Mud darter	<i>Etheostoma asprigene</i>		N4
71	Rainbow darter	<i>Etheostoma caeruleum</i>		N5
72	Bluntnose darter	<i>Etheostoma chlorosomum</i>	Endangered	N5
73	Iowa darter	<i>Etheostoma exile</i>		N5
74	Least darter	<i>Etheostoma microperca</i>	Endangered	N5
75	Orangethroat darter	<i>Etheostoma spectabile</i>	Threatened	N5
76	Banded darter	<i>Etheostoma zonale</i>		N5
77	Logperch	<i>Percina caprodes</i>		N5
78	Blackside darter	<i>Percina maculata</i>		N5
79	Slenderhead darter	<i>Percina phoxocephala</i>		N5
80	River darter	<i>Percina shumardi</i>		N5

*In 2010 the Shovelnose sturgeon was listed as Threatened under the Similarity of Appearance Provisions of the Endangered Species Act. The purpose of this is to protect Pallid sturgeon by treating Shovelnose sturgeon as a threatened species where their ranges overlap.

† Until the publication of Page et al. (2013), the Northern Sunfish was called the Longear Sunfish (*L. megalotis*). But, in Page et al. (2013), the name of the form of the Longear Sunfish known to have occurred in Iowa was changed to Northern Sunfish (*L. peltastes*). In 2014, sunfish in the Longear group were reported at DNR hatchery ponds at Fairport near Muscatine. The preliminary conclusion of the experts was that the Fairport fish were Longear Sunfish (*L. megalotis*). If true, this would be a new fish species for the state of Iowa. At the time of printing, results of genetic analyses to confirm this preliminary conclusion are pending.

Table 3- 11. Mammals of Greatest Conservation Need

Taxonomic order derived from Mammal Species of the World, used by the Smithsonian Institution’s National Museum of Natural History, which can be accessed at: <http://www.mnh.si.edu/> Reference: Wilson, D.E. and D.M. Reeder (editors). 2005. Mammal Species of the World: A Taxonomic and Geographic Reference (3rd Ed.) Johns Hopkins University Press. 2,142 pp.

Iowa Listing: species having Iowa Endangered, Threatened, or Special Concern Status (from Iowa Code Chapter 77) as of 2015. For up-to-date state listing information, please see the Threatened and Endangered Species Program page on the DNR website at www.iowadnr.gov

National Rank/Listing: **National Rank** refers to NatureServe Conservation Status Ranks. N1 = Critically Imperiled in Nation; N2 = Imperiled in Nation; N3 = Vulnerable in Nation; N4 = Apparently Secure in Nation; N5 = Secure in Nation. For additional definitions and explanation see Appendix 14. **National Listing** refers to federally Endangered or Threatened species.

Rows highlighted in gray: indicate data deficient SGCN for which information needed to assess conservation status is lacking.

Assessments of species conservation status undertaken as part of the IWAP are used to determine SGCN status only. Other information is provided as a reference. Updates to State Wildlife Action Plans, NatureServe National Ranks, Federal T&E Status, and State T&E Status are each independent processes, undertaken by different entities with differing timeframes. As such, the various listings or status ranks for a given species at a given point in time may not always appear to be in accord.

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
1	Hayden's Shrew	<i>Sorex haydeni</i>		N4
2	Elliot’s Short-tailed Shrew	<i>Blarina hylophaga</i>		N5
3	Southern Short-tailed Shrew	<i>Blarina carolinensis</i>		N5
4	Least Shrew	<i>Cryptotis parva</i>	Threatened	N5
5	Northern (Myotis) Long-eared Bat	<i>Myotis septentrionalis</i>		N1N2 Threatened
6	Little Brown Bat	<i>Myotis lucifigus</i>		N3
7	Indiana Bat	<i>Myotis sodalis</i>	Endangered	N2 Endangered
8	Silver-haired Bat	<i>Lasionycteris noctivagans</i>		N5
9	Eastern Pipistrelle	<i>Perimyotis subflavus</i>		N5
10	Evening Bat	<i>Nycticeius humeralis</i>		N5
11	White-tailed Jackrabbit	<i>Lepus townsendii</i>		N5
12	Franklin's Ground Squirrel	<i>Spermophilus franklinii</i>		N5
13	Southern Flying Squirrel	<i>Glaucomys volans</i>	Special Concern	N5
14	Plains Pocket Gopher	<i>Geomys bursarius</i>		N5
15	Plains Pocket Mouse	<i>Perognathus flavescens</i>	Endangered	N5
16	Southern Bog Lemming	<i>Synaptomys cooperi</i>	Threatened	N5
17	Woodland Vole	<i>Microtus pinetorum</i>		N5
18	Gray Fox	<i>Urocyon cinereoargenteus</i>		N5
19	Long-tailed Weasel	<i>Mustela frenata</i>		N5
20	Least Weasel	<i>Mustela nivalis</i>		N5

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
21	Spotted Skunk	<i>Spilogale putorius</i>	Endangered	N4
22	Ermine	<i>Mustela ermine</i>		N5

Table 3- 12. Mussels of Greatest Conservation Need

Taxonomic order derived from D.D. Turgeon, J.F. Quinn Jr., A.E. Bogan, E.V. Coan, F.G. Hochberg, Jr., W.G. Lyons, P.M. Mikkelsen, R.J. Neves, C.F.E. Roper, G. Rosenberg, B. Roth, A. Scheltema, F.G. Thompson, M. Vecchione & J.D. Williams. 1998. Common and scientific names of aquatic invertebrates from the United States and Canada: Mollusks. 2nd Edition. American Fisheries Society, Special Publication 26, Bethesda, Maryland. ix + 526 pp

Iowa Listing: Species having Iowa Endangered, Threatened, or Special Concern Status (from Iowa Code Chapter 77) as of 2015. For up-to-date state listing information, please see the Threatened and Endangered Species Program page on the DNR website at www.iowadnr.gov

National Rank/Listing: **National Rank** refers to NatureServe Conservation Status Ranks. N1 = Critically Imperiled in Nation; N2 = Imperiled in Nation; N3 = Vulnerable in Nation; N4 = Apparently Secure in Nation; N5 = Secure in Nation. For additional definitions and explanation see Appendix 14. **National Listing** refers to federally Endangered or Threatened species.

Rows highlighted in gray: indicate data deficient SGCN for which information needed to assess conservation status is lacking.

Assessments of species conservation status undertaken as part of the IWAP are used to determine SGCN status only. Other information is provided as a reference. Updates to State Wildlife Action Plans, NatureServe National Ranks, Federal T&E Status, and State T&E Status are each independent processes, undertaken by different entities with differing timeframes. As such, the various listings or status ranks for a given species at a given point in time may not always appear to be in accord.

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
1	Mucket	<i>Actinonaias ligamentina</i>		N5
2	Elktoe	<i>Alasmidonta marginata</i>		N4
3	Slippershell	<i>Alasmidonta viridis</i>	Endangered Extirpated?	N4
4	Three Ridge	<i>Amblema plicata</i>		N5
5	Flat Floater	<i>Anodonta suborbiculata</i>		N5
6	Cylinder (Cylindrical Papershell)	<i>Anodontoides ferussacianus</i>	Threatened	N5
7	Rock Pocketbook	<i>Arcidens confragosus</i>		N4
8	Spectacle Case	<i>Cumberlandia monodonta</i>	Endangered	N3 Endangered
9	Purple Wartyback	<i>Cyclonaias tuberculata</i>	Threatened Extirpated?	N5
10	Butterfly	<i>Ellipsaria lineolata</i>	Threatened	N4
11	Elephant Ear	<i>Elliptio crassidens</i>		N5
12	Spike	<i>Elliptio dilatata</i>		N5
13	Snuffbox	<i>Epioblasma triquetra</i>		N3
14	Ebonyshell	<i>Fusconaia ebena</i>		N4N5
15	Wabash pigtoe	<i>Fusconaia flava</i>		N5
16	Higgins' Eye Pearlymussel	<i>Lampsilis higginsii</i>	Endangered	N1N2 Endangered
17	Fatmucket	<i>Lampsilis siliquoidea</i>		N5
18	Yellow Sandshell	<i>Lampsilis teres anodontoides</i>	Endangered	N5

	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
19	White Heelsplitter	<i>Lasmigona camplanata</i>		N5
20	Creek Heelsplitter	<i>Lasmigona compressa</i>	Threatened	N5
21	Fluted Shell	<i>Lasmigona costata</i>		N5
22	Pondmussel	<i>Ligumia subrostrata</i>		N5
23	Black Sandshell	<i>Ligumia recta</i>		N4N5
24	Washboard	<i>Megalonaias nervosa</i>		N5
25	Threehorn Wartyback	<i>Obliquaria reflexa</i>		N5
26	Hickorynut	<i>Obovaria olivaria</i>		N4
27	Bullhead (Sheepnose)	<i>Plethobasus cyphus</i>	Endangered	N3 Endangered
28	Pyramid pigtoe	<i>Pleurobema rubrum</i>		N2N3
29	Round pigtoe	<i>Pleurobema sintoxia</i>	Endangered	N4N5
30	Pink Heelsplitter	<i>Potamilus alatus</i>		N5
31	Pink Papershell	<i>Potamilus ohioensis</i>		N5
32	Monkeyface	<i>Quadrula metanevra</i>		N4
33	Wartyback	<i>Quadrula nodulata</i>		N4
34	Pimpleback	<i>Quadrula pustulosa</i>		N5
35	Mapleleaf	<i>Quadrula quadrula</i>		N5
36	Salamander mussel	<i>Simpsonaias ambigua</i>		N1
37	Strange Floater (Creeper, Formerly Squawfoot)	<i>Strophitus undulatus</i>	Threatened	N5
38	Pistolgrip	<i>Tritogonia verrucosa</i>	Endangered	N4
39	Fawnsfoot	<i>Truncilla donaciformis</i>		N5
40	Deertoe	<i>Truncilla truncata</i>		N5
41	Pondhorn	<i>Unio merus tetralasmus</i>		N5
42	Paper Pondshell	<i>Utterbackia imbecillis</i>		N5
43	Ellipse	<i>Venustaconcha ellipsiformis</i>	Threatened	N4

Table 3- 13. Terrestrial Snails of Greatest Conservation Need

Taxonomic order and nomenclature derived from D.D. Turgeon, J.F. Quinn Jr., A.E. Bogan, E.V. Coan, F.G. Hochberg, Jr., W.G. Lyons, P.M. Mikkelsen, R.J. Neves, C.F.E. Roper, G. Rosenberg, B. Roth, A. Scheltema, F.G. Thompson, M. Vecchione & J.D. Williams. 1998. Common and scientific names of aquatic invertebrates from the United States and Canada: Mollusks. 2nd Edition. American Fisheries Society, Special Publication 26, Bethesda, Maryland. ix + 526 pp

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	Common Name	Scientific Name	Iowa Listing	National Rank/Listing
1	Iowa Pleistocene Snail	<i>Discus macclintocki</i>	Endangered	N1 Endangered
2	Minnesota Pleistocene Succinea	<i>Novasuccinea n. Sp. Minnesota a</i>	Endangered	N2
3	Iowa Pleistocene Succinea	<i>Novasuccinea n. Sp. Minnesota b</i>	Endangered	NNR
4	Hubricht's Vertigo	<i>Vertigo hubrichti</i>	Threatened	N3
5	Bluff Vertigo	<i>Vertigo meramecensis</i>	Endangered	N2

The previous version of the IWAP listed eight species of Terrestrial Land Snails as SGCN, all of which were listed as state Threatened or Endangered. Since that time, the scientific literature has indicated that Frigid Ambersnail (*Catinella gelida*) is not a valid species, and that both the Iowa Pleistocene Vertigo (*Vertigo iowaensis*) and the Briarton Pleistocene Snail (*Vertigo briarensis*) are actually the same species as Hubricht's Vertigo (*Vertigo hubrichti*).

Specific resources utilized by each taxonomic subcommittee during SGCN assessment:

Amphibians and Reptiles

References used by the Amphibian and Reptile Subcommittee include:

- A Field Guide to the Amphibians and Reptiles of Iowa, LeClere(2013);
- Iowa Multiple Species Inventory and Monitoring Program ;
- Christiansen and Bailey (1986, 1988, and 1991);
- NatureServe National and Sub-national Heritage Status Rankings;
- Partners for Amphibian and Reptile Conservation: www.parcplace.org

Birds

The distribution and abundance of birds in Iowa is better understood than any other taxa considered in the IWAP. As a result the Bird Subcommittee had many sources of information to consult. References utilized by the Bird Subcommittee include:

- *Birds of Iowa* (Kent and Dinsmore 1996);
- *Iowa Birds* (Dinsmore et al. 1984);
- Iowa Multiple Species Inventory and Monitoring Program;
- *The Iowa Breeding Bird Atlas* (Jackson et al. 1996) and *The Iowa Breeding Bird Atlas II (in press)*;
- *Trends in Iowa Wildlife Populations and Harvest*;
- USGS Breeding Bird Survey;
- NatureServe National and Sub-national Heritage Status Rankings;
- *The State of the Birds* Annual Reports;
- Partners in Flight Bird Landbird Conservation Plans for Iowa Physiographic Areas;
- USFWS Region 3 Birds of Conservation Concern (2008);
- North American Waterfowl Management Plan (2012);
- North American Waterbird Conservation Plan (2002);
- United States Shorebird Conservation Plan (2002);
- North American Landbird Conservation Plan (2004);
- Upper Mississippi-Great Lakes Joint Venture 2007 Conservation Strategies (Landbird, Shorebird, Waterfowl, Waterbird);
- Prairie Pothole Joint Venture Implementation Plans 2005 (Landbirds, Shorebird, Waterbird, Waterfowl);
- The Prairie-Forest Border Ecoregion: A Conservation Plan (The Nature Conservancy);
- Partners In Flight *Saving Our Shared Birds* (2010);
- Iowa Important Bird Area Priority Birds List (Audubon).

Butterflies

References used by the Butterfly Subcommittee include:

- The Butterflies of Iowa - Schlicht et al. (2007)
- Schlicht and Orwig (1998)
- Iowa Multiple Species Inventory and Monitoring Program
- Selby (2010)
- Swengel et al. (2011)
- Iowa Butterfly Survey Network

Dragonflies and damselflies

References used by the Dragonfly and Damselfly Subcommittee include:

- Cruden and Gode (2000)
- Iowa Odonata Survey: www.iowaodes.org
- Odonata Central: www.odonatacentral.org
- Iowa Multiple Species Inventory and Monitoring Program

Fish

References used by the Fish Subcommittee include:

- Harlan and Speaker (1987)

- Wilton (2004)
- Iowa Biological Stream Monitoring Database (BioNet): the portal for all data collected as part of the state's Biological Monitoring and Assessment programs
- Iowa Aquatic Gap (Loan-Wilsey et al. 2005)
- Heitke et al. (2006)
- Sindt et al. (2011)
- Parks et al. (2014)

Mammals

References used by the Mammal Subcommittee include:

- Bowles *et al.* (1998)
- Iowa Multiple Species Inventory and Monitoring Program
- Trends in Iowa Wildlife Populations and Harvest;
- NatureServe National and Sub-national Heritage Status Rankings;

Mussels

References used by the Mussel Subcommittee include:

- Frest (1987)
- Arbuckle and Downing (2000)
- Poole and Downing (2004)
- Heidebrink (2002)
- Hoke (2009)
- Statewide Freshwater Mussel Survey (J. Kurth)
- Mississippi River mussel sampling data (S. Gritters)
- Iowa Multiple Species Inventory and Monitoring Program

Terrestrial Snails

Comparatively little is known about the distribution and status of this group in Iowa. References used by the Land Snail Subcommittee include:

- Frest (1987 and 1991)
- Nekola and Coles (2010)
- Clark et al. (2008)
- Turgeon et al. (1998)
- The Poweshiek Skipper Project website has a section dedicated to Iowa's terrestrial snails:
<http://www.poweshiekskipper.org/biodiversity/land%20snails.html>

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