

Appendix 2.3 SGCN Selection Rationale and Flowchart

Decision: State listed as THR (threatened) or END (endangered), federally listed as THR or END or federally identified as NEP (nonessential experimental population) with a state B, N or migratory SNA rank? The objective of the SWAPs and the State Wildlife Grant program is to help species before they become listed as THR or END. However, the scope of the WWAP and its potential user base create an inevitable need to **NOT** exclude THR, END, and NEP species because it may make the WWAP incompatible with other regulatory responsibilities, incorrectly imply these are low priority, and/or create a disconnect with the mission of potential WWAP users. Species that are federally listed as THR or END without a numerical SRank may not be assigned “Yes” (i.e., federally listed species for other states).

Decision: SRank = S1, S2 or range rank w/ S1 or S2 (e.g., S1S3)? NatureServe’s conservation assessment ranking system relies on three categories (i.e., risk, threats and trends) with weighted factors in each category. We feel this is a systematic, reproducible and recognized method for evaluating and identifying SGCN. With minor variations in definition, the factors used in each category are commonly used among biologists and ecologists to assess the status of a species and its vulnerability to impacts. Range ranks mean there is a range of estimated values for the weighted factors in each of the three categories such that there is roughly an equal chance that the species “could be as low as” or “could be as high as”. Interpretation is conservative; the lower end of the range is used to determine SGCN status.

Decision: SRank = S4, S5, S4S5, SX or SNA? Species with these ranks are not of greatest conservation need relative to species in other categories. Some SNA species may be placed on the SINS list depending on the reason for the rank. New information may move a species in one of these non-SGCN ranks to an SGCN rank.

- **S4** = Apparently secure in Wisconsin due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.
- **S5** = Secure in Wisconsin due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats.
- **SX** = Presumed to be extirpated from Wisconsin. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
- **SNA** = A state rank is not applicable because the element is not a suitable target for conservation activities, typically because it is non-native, accidental, irregular, a long-distance migrant/transitory, or the element’s presence in Wisconsin is unconfirmed.

Decision: SRank = SU, SH or SNR? This determines whether a species should be placed on the SINS list or if it continues with the SGCN evaluation. A species is assigned one of these ranks if there is not enough information to reasonably estimate the factors of rarity, threats and trends that are used to derive the SRanks. Avoid equating lack of information with rarity or vulnerability. For example, if decision makers are unable to estimate (even conservatively) a range for number of occurrences, population size, or habitat vulnerability, this is a strong indication that the species should be ranked as SU or SNR rather than S1 or S2. Species marked as SH may be placed on the SINS list if the lack of verification in the past 20 years is because no surveys have been undertaken (again, lack of information). Not all species ranked as SH or SNR are placed on the SINS list. Species on the SINS list are highlighted for surveys when this information can inform ranking categories of rarity, threats and trends. The best action we can undertake for them is to gather basic information about their status and habitat needs.

- **SH** = Known only from historical records. The element may no longer be present in Wisconsin, but there is not enough evidence to state this with certainty. The SH rank is used when an element's presence has not been documented in decades despite some searching and evidence of significant habitat loss or degradation, or when an element has been searched for unsuccessfully, but not thoroughly enough to presume that it is no longer present in Wisconsin.
- **SNR** = Not ranked. State conservation status not yet assessed.
- **SU** = Unrankable due to lack of information or to substantially conflicting information about status or trends.

Decision: SRank = S3 or S3S4? At this decision, only species with a rank of S3 or S3S4 should remain. If that is not the case, then the species has an unusual or mistaken SRank and the user should contact the Natural Heritage Inventory program. These are the species in the "middle" that need the additional filters in the second part of the flowchart.

- **S3** = Vulnerable in Wisconsin due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors)

Decision: Weak GRank? The quality and quantity of data and information that go into GRanks varies. Some GRanks are "old" and it is difficult to verify the data used to derive them. In some cases, experts identify recent information that has not been incorporated yet into the ranks. Some species do not have a GRank. GRanks for some taxa are based on a small dataset. If decision makers estimate that the GRanks do not have important weaknesses, it is used to determine SGCN status.

Decision: GRank < 5 (e.g., G4S3, G4S3S4)? Species that are rare or uncommon and at moderate risk in our state (S3) or that range from moderate risk to apparently secure (S3S4) and are globally secure (GRank = 5) do not have a

conservation need relative to other species that are vulnerable both within our state and globally.

Decision: Is species at risk in Wisconsin because of: vulnerability to climate change; genetic isolation; low genetic diversity; significant range contraction; and/or non-cyclical decline? If you cannot reasonably estimate these answers based on evidence for the species itself, an associated species, or the species' habitat, the species cannot be added to the SGCN list at this time. These questions get at specific issues of biodiversity and environmental change that decision makers felt were not sufficiently addressed by SRanks or GRanks.

- Vulnerability to Climate Change: Based on a vulnerability assessment using a "low", "medium", "high" scale or equivalent. The SRank "threat" category looks at vulnerability to all threats. Climate change vulnerability needs specific emphasis.
- Genetic Isolation: Populations or individuals are geographically isolated or subject to other isolation mechanisms such that changes in the environment may prevent successful reproduction.
- Low Genetic Diversity: Few or limited genetic characteristics make it difficult for this species to adapt to changes in its environment.
- Significant Range Reduction: A recent (<5 years) or unusual change in the environment of a species or its distribution that cannot be adequately conveyed in the "range" factor used to derive the "rarity" score for the SRanks.
- Non-Cyclical Decline: A decline in range, occurrence numbers, or population size that cannot be adequately conveyed in the "short-term" or "long-term" factors used to derive the "trend" score for the SRanks.

Decision: Is it a Wisconsin Responsibility species? SRanks, rather than proportion of range or population in Wisconsin, are used to be consistent with the overall approach of using SRanks. For states that do not use SRanks, decision makers may use a different estimator from that state, but should document that it is similar to the factors used in deriving SRanks.

Document the sources used to make the final two decisions (i.e., risk in Wisconsin and Wisconsin responsibility species). This may include expert knowledge, references or other documentable sources that you considered.

Appendix 2.3 SGCN SELECTION FLOWCHART

