

**Kansas Department of Wildlife, Parks & Tourism  
2023 Species Listing Review**

Species being reviewed: Broad-headed Skink

Reviewer: \_\_\_\_\_

Date: 1/15/24

(Using your experience and knowledge, please indicate the most appropriate number in each category to help with our evaluation process.)

**Species status:**

1) Populations and Trends

a) Kansas populations in relation to global populations.

- Kansas population constitutes <10% of global population and not geographically isolated. (2)
- Kansas population constitutes 10-25% of global population and not geographically isolated. 4
- Kansas population is geographically isolated and constitutes <25% of global population. 5
- Kansas population constitutes 25-50% of global population. 6
- Kansas population constitutes >50% of global population. 8
- Kansas population is total global population. 10

b) Population trend within **Kansas** during the past 35 years.

- Population increasing. 0
- Population stable or cyclic (within 10% of stable mean). (1)
- Population reduced 10-29%. 3
- Population reduced 30-59%. 6
- Population reduced 60-90%. 9
- Population reduced >90%.

c) Population trend within **global range** during the past 35 years.

- Population increasing. 0
- Population stable or cyclic (within 10% of stable mean). (1)
- Population reduced 10-29%. 3
- Population reduced 30-59%. 6
- Population reduced 60-90%. 9
- Population reduced near 100%. 10

2) Rarity (density within current range). When considering a migratory species, the evaluation should apply to that period while the animal is within the state.

a) Within **Kansas**.

- Common, easily found throughout range. 0
- Frequently found at many points. 2
- Frequently found at few points. (4)
- Infrequently found at many points. 6
- Infrequently found at few points. 8
- Rarely found at any point, never concentrated. 10

- b) Within **global range**.
- Common, easily found throughout range. 0
  - Frequently found at many points. 2
  - Frequently found at few points. 4
  - Infrequently found at many points. 6
  - Infrequently found at few points. 8
  - Rarely found at any point, never concentrated. 10
- 3) Current Breeding Biology.
- a) Residency status.
- Peripheral or casual (no breeding population). 0
  - Regular migrants that do not winter in KS. 3
  - Migrants wintering but not breeding in KS. 4
  - Migrants breeding in Kansas. 8
  - Year-round resident. 10
- b) Reproduction within Kansas.
- Normal number of young per brood or litter (or does not breed in KS). 0
  - Slight reduction from normal reproduction. 3
  - Reproduction severely decreased from normal. 7
  - Reproduction near zero. 10
- 4) Distribution change during the past 35 years.
- a) Distribution within Kansas.
- Distribution unchanged or increasing. 0
  - Distribution reduced up to 30%. 3
  - Distribution reduced 30 to 59%. 6
  - Distribution reduced 60 to 90%. 9
  - Distribution reduced >90%. 10
- b) Global range distribution.
- Distribution unchanged or increasing. 0
  - Distribution reduced up to 30%. 3
  - Distribution reduced 30 to 59%. 6
  - Distribution reduced 60 to 90%. 9
  - Distribution reduced >90%. 10

**Habitat Status**

- 5) Loss of suitable habitat during the past 35 years.
- a) Within Kansas.
- No habitat loss or habitat increasing. 0
  - Habitat loss up to 30%. 3
  - Habitat loss 30-59%. 6

- Habitat loss 60-90%. 9
  - Habitat loss >90%. 10
- b) Within global range.
- No habitat loss or habitat increasing. 0
  - Habitat loss up to 30%. 3
  - Habitat loss 30-59%. 6
  - Habitat loss 60-90%. 9
  - Habitat loss >90%. 10

**Vulnerability**

- 6) Specialization.
- No limiting specialization, highly adaptable. 0
  - Slightly limiting specialization, moderately adaptable. 4
  - Moderately specialized (narrow niche in regard to habitat or food). 7
  - Highly specialized (very narrow niche, extremely low adaptability). 10
- 7) Sensitivity to Environmental Contaminants.
- No problems associated with pollutants or pesticides. 0
  - Slight sensitivity to pollutants or pesticides. 4
  - Moderate sensitivity to pollutants or pesticides. 6
  - High sensitivity to pollutants or pesticides. 8
  - Pollutants or pesticides known to be suppressing population. 10
- 8) Exploitation within Kansas.
- a) Species vulnerability to consumptive uses.
- None current or anticipated. 0
  - Low. 3
  - Moderate. 7
  - High. 10
- b) Habitat exploitation threat.
- None current or anticipated. 0
  - Low. 3
  - Moderate. 7
  - High. 10
- 9) Recovery capacity.
- Recovery not needed, species not in jeopardy. 0
  - Recovery potential excellent as species responds well to management. 2
  - Recovery potential good; some management difficulty. 4
  - Recovery potential fair due to habitat or management problems. 6
  - Recovery potential poor due to habitat or management problems. 8
  - Recovery potential impossible due to unsolvable population, habitat, or management problems. 10

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Using the following definitions and using your best scientific judgment, which category does this species best fit:

Endangered Species: any species of wildlife whose continued existence as a viable component of the state's wild fauna is determined to be in jeopardy (KSA 32-958c).

Threatened Species: any species of wildlife which appears likely, within the foreseeable future, to become an endangered species (KSA 32-958f).

Species-in-Need-of-Conservation: (SINC) those species which are highly specialized, whose habitat is very limited in Kansas, or show population declines that warrant data collection concerning its status in Kansas. Conservation efforts focused on these species can prevent future listing as threatened or endangered.

Unlisted: This species population does not have the characteristics that qualify it for one of the above categories. It has a healthy or recovered population that is either stable or increasing or it no longer can be considered a viable component of the Kansas fauna.

Recommended listing (check one)

Endangered in Kansas

Threatened in Kansas

Species-in-need-of-conservation

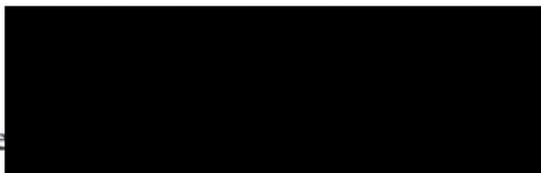
Unlist (is not or is no longer a viable component of the Kansas fauna)

Unlist (species status is stable to increasing and considered healthy or recovered)

Please provide comments to support recommended listing and any other information you think is pertinent that may have been omitted from the petition (use as much space as needed).

Recent surveys have detected larger population numbers than were historically documented. Habitat evaluations have shown that prime habitat is less limited than previously thought and can be maintained with common management practices. However, this habitat is limited to the eastern extent of the state.

Signature



Date 1/15/24

Return by January 31, 2024 to: [Jordan.Hofmeier@ks.gov](mailto:Jordan.Hofmeier@ks.gov)

**Kansas Department of Wildlife, Parks & Tourism  
2023 Species Listing Review**

Species being reviewed:   **Broad-headed Skink** (*Plestiodon laticeps*)  \_\_\_\_\_

Reviewer: \_\_\_\_\_ Date: 1/23/2024\_\_\_\_\_

(Using your experience and knowledge, please indicate the most appropriate number in each category to help with our evaluation process.)

**Species status:**

1) Populations and Trends

- a) Kansas populations in relation to global populations.
  - **Kansas population constitutes <10% of global population and not geographically isolated.** **2**
  - Kansas population constitutes 10-25% of global population and not geographically isolated. 4
  - Kansas population is geographically isolated and constitutes <25% of global population. 5
  - Kansas population constitutes 25-50% of global population. 6
  - Kansas population constitutes >50% of global population. 8
  - Kansas population is total global population. 10
  
- b) Population trend within **Kansas** during the past 35 years. **Unknown**
  - Population increasing. 0
  - Population stable or cyclic (within 10% of stable mean). 1
  - Population reduced 10-29%. 3
  - Population reduced 30-59%. 6
  - Population reduced 60-90%. 9
  - Population reduced >90%.
  
- c) Population trend within **global range** during the past 35 years. **Unknown**
  - Population increasing. 0
  - Population stable or cyclic (within 10% of stable mean). 1
  - Population reduced 10-29%. 3
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  - Population reduced near 100%. 10

2) Rarity (density within current range). When considering a migratory species, the evaluation should apply to that period while the animal is within the state.

- a) Within **Kansas**.
  - Common, easily found throughout range. 0
  - Frequently found at many points. 2
  - **Frequently found at few points.** **4**
  - Infrequently found at many points. 6
  - Infrequently found at few points. 8
  - Rarely found at any point, never concentrated. 10

- b) Within **global range**.
  - Common, easily found throughout range. 0
  - Frequently found at many points. 2
  - **Frequently found at few points.** 4
  - Infrequently found at many points. 6
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  - Rarely found at any point, never concentrated. 10
  
- 3) Current Breeding Biology.
  - a) Residency status.
    - Peripheral or casual (no breeding population). 0
    - Regular migrants that do not winter in KS. 3
    - Migrants wintering but not breeding in KS. 4
    - Migrants breeding in Kansas. 8
    - **Year-round resident.** 10
  
  - b) Reproduction within Kansas.
    - **Normal number of young per brood or litter (or does not breed in KS).** 0
    - Slight reduction from normal reproduction. 3
    - Reproduction severely decreased from normal. 7
    - Reproduction near zero. 10
  
- 4) Distribution change during the past 35 years.
  - a) Distribution within Kansas.
    - **Distribution unchanged or increasing.** 0
    - Distribution reduced up to 30%. 3
    - Distribution reduced 30 to 59%. 6
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  - b) Global range distribution. **Unknown**
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**Habitat Status**

- 5) Loss of suitable habitat during the past 35 years.
  - a) Within Kansas.
    - **No habitat loss or habitat increasing.** 0
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- Habitat loss >90% . 10
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## Vulnerability

- 6) Specialization.
  - No limiting specialization, highly adaptable. 0
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- 8) Exploitation within Kansas.
  - a) Species vulnerability to consumptive uses.
    - **None current or anticipated.** 0
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or management problems.

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Recommended listing (check one)

Endangered in Kansas

Threatened in Kansas

**Species-in-need-of-conservation**

Unlist (is not or is no longer a viable component of the Kansas fauna)

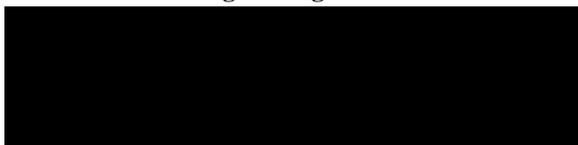
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Please provide comments to support recommended listing and any other information you think is pertinent that may have been omitted from the petition (use as much space as needed).

Like the vast majority of reptile species globally, population trends of the Broad-headed Skink are virtually unknown. However, this species is relatively common in mature hardwood forests throughout its range in the eastern United States, including southeast Kansas. Recent surveys indicate that Broad-headed Skinks can reliably be found in appropriate habitat in at least five counties along the eastern edge of the state. There is no evidence that the Kansas population is unique or genetically isolated from populations in neighboring states, or that the Kansas population is declining. Likewise, there is no evidence that Broad-headed Skinks are undergoing a range contraction in Kansas.

Given their apparent abundance along the southeastern edge of Kansas, and broader habitat associations than previously recognized, I support categorizing Broad-headed Skink as SINC rather than threatened. The SINC classification appropriately recognizes the skink's habitat specialization and restricted range within the state. There is insufficient evidence to support the Threatened classification, i.e., there is a low likelihood of Broad-headed Skinks becoming endangered in the near future.

Signature



Date 1/23/2024

Return by January 31, 2024 to: [Jordan.Hofmeier@ks.gov](mailto:Jordan.Hofmeier@ks.gov)

**Kansas Department of Wildlife, Parks & Tourism  
2023 Species Listing Review**

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Reviewer: [REDACTED] Date: 01/15/2024

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<b>Habitat Status</b>		
5) Loss of suitable habitat during the past 35 years.		
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**Vulnerability**

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Threatened in Kansas

Species-in-need-of-conservation

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Please provide comments to support recommended listing and any other information you think is pertinent that may have been omitted from the petition (use as much space as needed).

I appreciate the opportunity to provide comments on the conservation status of this species and I compliment Zackary Cordes on the thorough job of summarizing both state and range-wide information on this species in the petition. Certainly, some of my scoring is equivocal because of a lack of documented information but I attempted to provide my best estimate. I don't disagree that based on numerical assessments alone, our understanding of natural history requirements and general knowledge of the in-state distribution has improved markedly since 1987. I also agree, there is little to suggest that populations trends have changed either positively or negatively within the state or range-wide. Like many species that share an elusive natural history, even with recent concerted efforts like those documented and cited in the petition, we simply do not have the historical perspective. It is in part for this reason, my concerns regarding specificity of habitat and its conservation, and how the emphasis on the conservation of this species might change with a change in conservation status, that I argue against upgrading of conservation status of this species from Threatened to SINC.

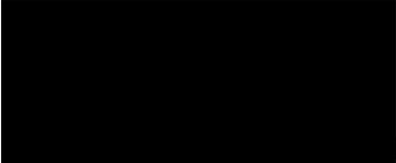
First, considering range and habitat information. We certainly have a much better documented in-state distribution as the result of recent survey efforts led in large part by the petitioner. We also have a much better protocol that allows consistency in surveys and will likely be effective monitoring populations or presence in the future. However, the suggestion that there are more habitat types based on forest community categories is perhaps misleading. It seems clear, as stated and cited in the petition, that it is habitat structure that is most important in predicting occurrence. The structure cited in the petition correctly emphasizes the presence of large standing snags and large downed logs. The size categories of these structures are useful in modeling, but to generalize from these two characteristics and others in the citation, collectively they describe/quantify old and mature deciduous forests (with some variation in tree composition). These parcels mature forests are not common in Kansas and increasingly valuable as artisan lumber sources but perhaps more importantly, are under threat from invasives (*Lonicera spp.*: as indicated in the petition) and mesophication (Nowacki and Abrams, 2008). Certainly, recent surveys have documented presence of Broad-headed Skink in less mature habitats but the critical reproductive stages, like nesting, are only documented in these mature forest habitats (big logs) where changes in understory structure by invasives might have a more significant effect on reproductive success.

It is impressive that there are a number of large parcels of public land and some private easements where conservation practices can focus on this species. However, additional private conservation easements will be necessary to provide sufficient protections to maintain connectivity among populations in the state. I am concerned that EQUIP proposals and funds from NGO's like The Nature Conservancy, that might be used for both habitat maintenance relative to invasives and in acquiring conservation easements, would receive less favorable reviews with a change in conservation status. A change that is unjustified by a documented change in population trends (we have more information for sure, but not about population status change or connectivity). Unless I am mistaken, the upgraded status also limits the request for habitat modification or mitigation during environmental review of public works and other projects that would convert habitat.

Along a similar line of thinking, it seems premature to change the conservation status of this species, when as indicated in the petition, a recovery plan is in the process of being generated or approved. Given the amount of effort and resources the KDWP has already invested to better understand the conservation needs of this species, it seems a bit short-sighted not to use what is a rare and thorough set of recent survey information to generate a recovery plan. This just does not happen as often as we all would like. The plan could ultimately formalize the conservation targets, which in turn would focus efforts to acquire conservation easements and cost share support (invasive management), that might justify an upgraded status relatively quickly. At the minimum, it would provide a clear path that would span institutional change among management agencies, their partners, and new program opportunities.

In closing, it is very tempting to look at the body of work in the last decade and the numerical summary of the generalized evaluation instrument, here in, and conclude that we have done much, and know much, and therefore perhaps even feel a need to take

some action that is visible. I can understand this sentiment well, and the work was well-done and noteworthy. However, I would urge caution in making this proposed change because by staying the course there is an opportunity to increase the probability of “recovery” or of ensuring stability and demonstrate an excellent path for addressing conservation concerns in the state. The timeline might be frustrating, but in this case, there was a clear need for evaluation – and that need was addressed. As a result, sufficient information is now available to develop a recovery plan with conservation targets and actionable strategies. Deploying these strategies to meet conservation targets would seem to be the next best step in the process. Subsequent evaluation of these successes and the realization of conservation targets would be a ‘best practice’ in the process of modifying conservation status. At this time, upgrading the conservation status of the Broad-headed Skink from Threatened to SINC would seem to only disturb what is likely a promising path to documented stability for this species in the state.

Signature  Date 01/30/2024

Return by January 31, 2024 to: [Jordan.Hofmeier@ks.gov](mailto:Jordan.Hofmeier@ks.gov)

Nowacki, Gregory J.; Abrams, Marc D. 2008. The demise of fire and "mesophication" of forests in the eastern United States. *BioScience*. 58(2): 123-138