

KANSAS DEPARTMENT OF WILDLIFE AND PARKS
Petition for Species Review (submission deadline: October 5, 2023)
Endangered/Threatened/Species-in-Need-of-Conservation Status

Kansas recognizes rare or declining species by state listing to categories of Endangered*, Threatened**, or Species-in-Need-of-Conservation (SINC)*** (K.A.R. 115-15-1 and 2). Every 5 years these lists are reviewed as required by statute (K.S.A. 32-960). A Threatened and Endangered Species Task Committee oversees the process and makes listing recommendations to the Secretary of Kansas Department of Wildlife and Parks (KDWP) based on best available science. Any changes to these lists must be approved by the KDWP Commission.

A review regarding a listing, delisting, uplisting or downlisting of Kansas wildlife regarding the above categories is initiated via a petitioning process. To submit a petition for review, please fully complete the requested information attached below. Petitioners are strongly encouraged to provide all substantive biological information with cited references to aid in the review. A completed petition is no guarantee that the listing request will occur. The scientific information in the petition determines whether or not the requested listing change will merit a full review.

At the request of the KDWP Secretary, the Threatened and Endangered Species Task Committee will evaluate all completed petitions and determine if there is sufficient information to justify a full review of the petitioned status change. If the species is accepted for further review, there will be public information meetings conducted in regard to the proposed listing change.

All petitioning documents pertaining to the species under full review will be made available to the public at the KDWP website (<https://ksoutdoors.com/Services/Threatened-and-Endangered-Wildlife/2023-Five-Year-Review>). If a listing change is recommended, a notice of the proposed action will be sent to federal and state agencies and local and tribal governments that may be affected by the petitioned species, and to all individuals and organizations that have requested notification. KDWP will issue news releases concerning the proposed species listing change. In addition, individual petitions and substantiating data will be distributed to and evaluated by: 1) academia, 2) wildlife agency personnel, 3) other professionals, 4) other resource agencies (state and federal) and 5) nonprofessionals who have known expertise/experience with the petitioned species. This entire process, from petition to final vote by the commission, has taken as long as 18 months.

Questions concerning the petitioning and review process should be directed to Jordan Hofmeier, Assistant Director of Ecological Services, KDWP, 512 SE 25th Ave, Pratt, KS 67124 (Jordan.Hofmeier@ks.gov).

Completed “Petition for Species Review” pdf forms should be sent to kdwpt.ess@ks.gov or paper copies to KDWP, Attn: Ecological Services, 512 SE 25th Ave., Pratt, KS 67124-8174.

* 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) any species which are highly specialized, whose habitat is very limited in Kansas, or shows a population decline that warrants data collection concerning its status in Kansas. Conservation efforts focused on this species can prevent future listing as threatened or endangered. This listing is not defined in the Kansas Statutes.

Species Common Name: Coal Skink

Species Scientific Name: *Plestiodon anthracinus*

Currently listed as:

Endangered Threatened Species-In-Need-of-Conservation (SINC) X not listed

Petitioned to:

Endangered Threatened X SINC not listed

Note to petitioner: Feel free to expand the blanks below to add sufficient information. When completed, please convert Word document to a pdf prior to submitting.

- 1) List the survey/research information that has occurred since the last 5-year review (2018) that has prompted your petition to change the listing category of this species.

The Coal Skink, *Plestiodon anthracinus*, is a ground dwelling 5-7" lizard associated with forest habitats near streams, and mesic areas along cedar glades (Trauth et al., 1994). In Kansas, *P. anthracinus* is primarily known from heavily wooded areas in the eastern tier of counties in Kansas (Collins et al., 2010). In neighboring Missouri *P. anthracinus* primarily occurs within Eastern Temperate Forest habitats, particularly within the Ozark Plateau of Southwestern Missouri (Johnson, 2000). The Kansas and Missouri populations most likely co-occur along the state boundary in Bourbon, Crawford, and Cherokee counties. More recent records of *P. anthracinus* in western Missouri include observations during herp surveys on Camp Crowder, a national guard base 24 miles west of Fort Scott, KS (Andrei et al., 2013). While specimens of *P. anthracinus* have been documented for Miami and Linn counties, along the Marais des Cygne drainage, there are no records for the species in neighboring Cass and Bates counties, MO (<https://atlas.moherp.org/>; accessed on 8 Aug. 2023). Baldwin Woods, a KU owned property in Douglas County represents the northwestern extent of the species range in Kansas. To the south, *P. anthracinus* are only known from Ottawa County, OK, which borders Cherokee County to the south (Sievert and Sievert, 2005).

Several survey efforts have taken place within the distribution of the *P. anthracinus* since the late 1990's. Hullinger et al. (2020) sampled eastern Kansas for Broad-headed Skinks (*P. laticeps*), whose range and habitat overlaps with *P. anthracinus* between 2015-2017. Methods used included drift fences and funnel traps, as well as visual encounter surveys. Total effort for 2015 is not known, but there were 774 array nights and 293.5 person hours of visual encounter surveys and no *P. anthracinus* were observed. In 2018 KDWP surveyed 162, 50 x 50 meter plots as part of an occupancy study for *P. laticeps* (Cordes unpubl. data). Each plot was surveyed 4 times. Only 1 *P. anthracinus* was observed in Franklin County. During a survey for species of greatest conservation need (SGCN) in previously mined habitats, Pittsburg State University sampled sites in Crawford and Cherokee Counties from 2020-2022 using drift fences, funnel traps, pitfall traps, and cover boards. No *P. anthracinus* were observed (Brodsky and George, 2023). While most of these previous surveys were focused on *P. laticeps*, the methods used are fairly common methods for sampling reptiles and have worked well for sampling woodland species of skinks, including *P. anthracinus* in other studies (Crosswhite et al., 2004; Shipman et al., 2004).

Oddly enough, there are no records for *P. anthracinus* in Labette County. In the early springs of 1997-2001, Riedle and Hynek (2002) spent 137 person hours conducting visual surveys for amphibians and reptiles along Labette Creek, in Labette County but did not observe any *P. anthracinus*. The most westerly Kansas records in Chautauqua and Montgomery Counties, are older records. The Chautauqua record was collected as part of survey by Fort Hays (Fleharty and Johnson, 1975). The Montgomery County specimens were collected in 1966 by a private individual. I (JDR) examined the Chautauqua and Montgomery County specimens at the Sternberg Museum of Natural History and verified their id. While little additional work has been complete since in Chautauqua County, some survey work has been done at Montgomery County State

Lake (MGSFL), site of one specimen (FHSM 4251). The Kansas Herpetological Society held a field trip at MGSFL in 1977 and no specimens of *P. anthracinus* were observed (Perry, 1977). The MGSFL was subject to systematic foot searches from 1990-92 and no *P. anthracinus* were observed during these surveys (Riedle, 1994). I (JDR) have continued to visit MGSFL on an annual basis since 2015 in hopes of turning up an *P. anthracinus* with no luck.

According to the Kansas Herpetofaunal Atlas (<https://webapps.fhsu.edu/ksherp/default.aspx>; Accessed on 8 Aug 2023), there were 13 observations of *P. anthracinus* in the last 35 years. Ten of those observations were in Cherokee County, then one observation each in Bourbon, Douglas, and Johnson counties. The Kansas Herp Atlas Records reflect all records I could find in the KDWP Collection Permit Database, except for one additional observation at Baldwin Woods in Douglas County by myself, in 2016. There were two records for *P. anthracinus* in iNaturalist, which are reflected within the Kansas Herp Atlas. No records were found for the species in Kansas on the citizen science site HerpMapper.

Little is known about the natural history of *P. anthracinus*, particularly in Kansas. The species is rarely observed throughout its range, and little is known about its ecology (Hotchkin et al., 2001). But under right conditions and habitat, it can be readily observed if one is actively looking for them. Shipman et al. (2004) reported it was one of the more abundantly observed species in some watersheds in central Arkansas, although they were not able to determine which variables might be driving those abundances.

Literature Cited

Andrei, A., Riedle, J.D., Riedle, T.D.H., Andrei, A., and Kampeter, S. 2013. Two herpetofaunal surveys in Southwestern Missouri. *Collinsorum* 2:14-19.

Brodsky, C., and A. George. 2023. Establishing long-term ecological monitoring to enhance habitat restoration on reclaimed mined land. Final Report to the Kansas Department of Wildlife and Parks, Pratt, KS.

Collins, J. T., S. L. Collins, and T. W. Taggart. 2010. *Amphibians, Reptiles, and Turtles in Kansas*. Eagle Mountain Publishing, Eagle Mountain, UT.

Crosswhite, D.L., S.F. Fox, and R.E. Thill. 2004. Herpetological habitat relations in the Ouachita Mountains, Arkansas. Pp. 273-282 In: Guldin, James M., tech. comp. 2004. *Ouachita and Ozark Mountains symposium: ecosystem management research*. Gen. Tech. Rep. SRS-74. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 321 p.

Fleharty, E.D., and J.D. Johnson. 1975. Distributional records of herptiles from the Chautauqua Hills of southeastern Kansas. *Transactions of the Kansas Academy of Science* 77:65-67.

Hotchkin, P.E., C.D. Camp, and J.L. Marshall. 2001. Aspects of the life history and ecology of the coal skink, *Eumeces anthracinus*, in Georgia. *Journal of Herpetology* 35:145-148.

Hullinger, A., Z. Cordes, D. Riedle, and W. Stark. 2020. Habitat assessment of the Broad-headed Skink (*Plestiodon laticeps*) and the associated squamate community in eastern Kansas. *Transactions of the Kansas Academy of Sciences* 123:137-150.

Johnson, T. R. 2000. *The Amphibians and Reptiles of Missouri* 2nd Ed. Missouri Department of Conservation, Jefferson City.

Perry, J. 1977. KHS members achieve goal, get Cottonmouth. *Kansas Herpetological Society Newsletter* 21:3-4.

Riedle, D. 1994. A survey of reptiles and amphibians at Montgomery County State Fishing Lake. Kansas Herpetological Society Newsletter 98:11-13

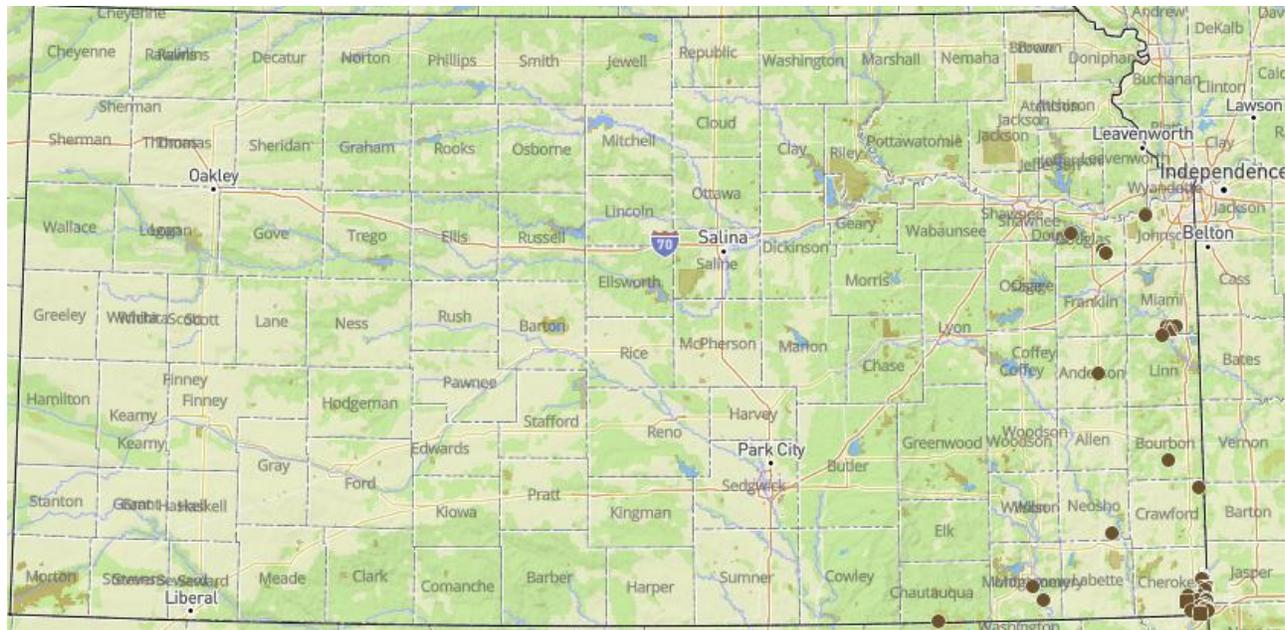
Riedle, J.D., and A. Hynek. 2002. Amphibian and reptile inventory of the Kansas Army Ammunition Plant, Labette County, Kansas. Journal of Kansas Herpetology 2:18-20.

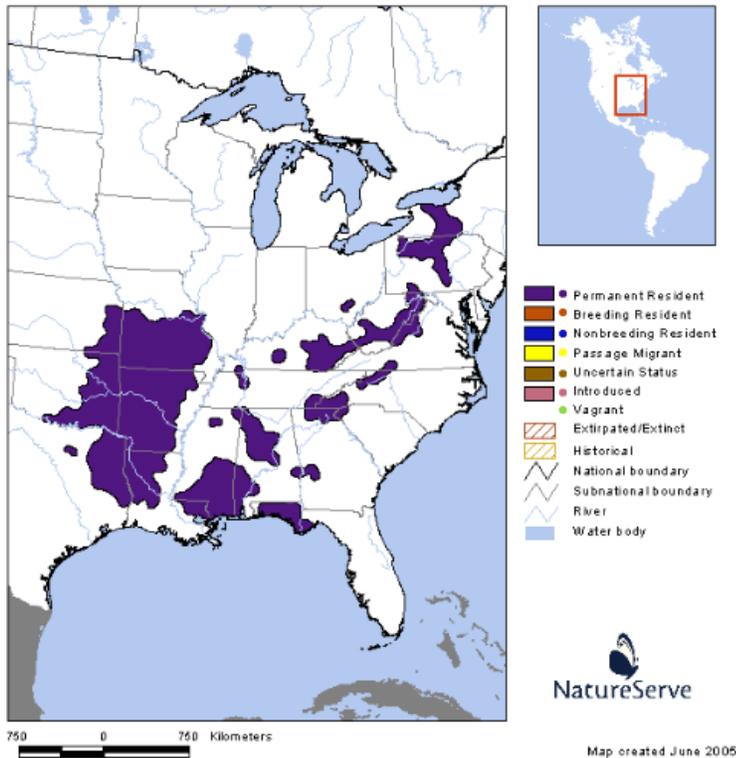
Sievert, G., and L. Sievert. 2005. A Field guide to Oklahoma's Amphibians and Reptiles. Oklahoma Department of Wildlife Conservation, Oklahoma City.

Shipman, P.A., S.F. Fox, R.E. Thill, J.P. Phelps, and D.M. Leslie, Jr. 2004. Reptile communities under diverse forest management in the Ouachita Mountains, Arkansas Pp. 174-182 In: Guldin, James M., tech. comp. 2004. Ouachita and Ozark Mountains symposium: ecosystem management research. Gen. Tech. Rep. SRS-74. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 321 p.

Trauth, S.E., 1994. Reproductive cycles in two Arkansas skinks in the genus *Eumeces* (Sauria: Scincidae). Journal of the Arkansas Academy of Science 48:210-218.

2) a. Provide a map of the species' current distribution in Kansas and range wide.





b. Is the Kansas population considered connected with the population in an adjoining state?
 Yes _____ No _____ Don't know Most likely but unknown

c. If no, what is the distance to the nearest out-of-state population? ≤ 25 miles _____

d. Is the Kansas population genetically distinct from the core population in other states?
 Yes _____ No _____ Don't know _____

Cite references:

Andrei, A., Riedle, J.D., Riedle, T.D.H., Andrei, A., and Kampeter, S. 2013. Two herpetofaunal surveys in Southwestern Missouri. *Collinsorum* 2:14-19.

Collins, J. T., S. L. Collins, and T. W. Taggart. 2010. *Amphibians, Reptiles, and Turtles in Kansas*. Eagle Mountain Publishing, Eagle Mountain, UT.

Johnson, T. R. 2000. *The Amphibians and Reptiles of Missouri* 2nd Ed. Missouri Department of Conservation, Jefferson City.

Sievert, G., and L. Sievert. 2005. A Field guide to Oklahoma's Amphibians and Reptiles. Oklahoma Department of Wildlife Conservation, Oklahoma City.

3) How and to what magnitude has the species' distribution changed within Kansas during the past 35 years?

P. anthracinus has always had a limited distribution in Kansas, but may be gone from some westerly counties where it was previously observed. Recent amphibians and reptile surveys have had few to no observations of *P. anthracinus*. Individuals and relict populations may be isolated to a handful of sites with adequate woodland habitat along the KS-MO border.

Globally? Unknown *P. anthracinus* is currently list as a Species of Greatest Conservation Need in the 2015 SWAP plans for 15 of the 20 states where it is known to occur (https://www1.usgs.gov/csas/swap/species_view.html?sciname=Eumeces%20anthracinus; Accessed 10 August 2023).

Cite references: _____

Brodsky, C., and A. George. 2023. Establishing long-term ecological monitoring to enhance habitat restoration on reclaimed mined land. Final Report to the Kansas Department of Wildlife and Parks, Pratt, KS.

Hullinger, A., Z. Cordes, D. Riedle, and W. Stark. 2020. Habitat assessment of the Broad-headed Skink (*Plestiodon laticeps*) and the associated squamate community in eastern Kansas. Transactions of the Kansas Academy of Sciences 123:137-150.

4) Describe the species' population (not distribution) trend within Kansas during the past 35 years.

Unknown _____

Globally? _____

Cite references: _____

- 5) a. What is the Global Rank of this species from NatureServe? (<http://natureserve.org/>)
- b. What is species status and trend on IUCN Red List? (<http://www.iucnredlist.org/>)
- c. What proportion of the species' global population is currently found within Kansas?

Global Rank = G5 (Secure) and IUCN listing Least Concern. _____

6) What is the species' current residency status within Kansas (vagrant, migrant, wintering, or year-round)?

Year Round _____

7) Describe the species' current breeding status within Kansas.

Unknown. _____

Cite references: _____

8) Describe the species' habitat requirements:

Eastern Temperate Forest, woodland floor, and mesic glades in woodland habitat.

Cite references:

Collins, J. T., S. L. Collins, and T. W. Taggart. 2010. Amphibians, Reptiles, and Turtles in Kansas. Eagle Mountain Publishing, Eagle Mountain, UT.

Johnson, T. R. 2000. The Amphibians and Reptiles of Missouri 2nd Ed. Missouri Department of Conservation, Jefferson City.

Trauth SE, Robison HW, Plummer MV. 2004. The amphibians and reptiles of Arkansas. Fayetteville: The University of Arkansas Press.

9) Discuss the species' degree of specialization with regard to habitat, food, or other life history factors.

Poorly studied species, most aspects of its ecology is unknown. It does occur in woodland habitat, which is restricted to Eastern Kansas and currently listed as an ecological focus area in our SWAP.

Cite references:

Collins, J. T., S. L. Collins, and T. W. Taggart. 2010. Amphibians, Reptiles, and Turtles in Kansas. Eagle Mountain Publishing, Eagle Mountain, UT.

Hotchkin, P.E., C.D. Camp, and J.L. Marshall. 2001. Aspects of the life history and ecology of the coal skink, *Eumeces anthracinus*, in Georgia. Journal of Herpetology 35:145-148.

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Trauth, S.E., 1994. Reproductive cycles in two Arkansas skinks in the genus *Eumeces* (Sauria: Scincidae). Journal of the Arkansas Academy of Science 48:210-218.

10) Discuss the species' sensitivity to environmental contaminants and disease, if any, including known potential problems:

Unknown

Cite references: _____

11) To what degree is this species currently vulnerable to consumptive and/or commercial use in Kansas, and what relationship does that use have on its total population?

Most likely zero, not a species typically seen within the pet trade. Most likely susceptible to development in woodland habitats.

Cite references: _____

12) What are the current and imminent threats to the species in Kansas? Please list in priority order with the highest-ranked threat first.

Most threats are most likely related to loss of forest and riparian woodland habitats with proper mesic

conditions.

13) a. What is the recovery potential of this species?

Excellent _____ Good _____ Fair _____ Poor _____ Unlikely _____
Explain: Unknown, little ecological information present. _____

b. List any conservation actions that are currently addressing the needs of this species.
None _____

c. List any pending conservation actions that might improve the status of this species.
Maintain woodland habitats. _____

14) Summarize your reasons for requesting a review of this species:

Considering the dearth of observations since the 1980's, particularly outside of the Ozark Plateau region in Cherokee County, the possible extirpation of the species in the more westerly Chautauqua and Montgomery counties and the low detections in several extensive studies in eastern Kansas, some of which were focused on skinks in general, I recommend this species be uplisted to a status of Species in Need of Conservation. One could argue that the perceived scarcity is based on its secretive nature, but with the increased focus on survey work for amphibians and reptiles in the Eastern Deciduous Woodlands of Kansas, I would argue that the perceived scarcity is real. I would also argue that *P. anthracinus* deserves additional attention until we better understand its ecology and status in the state. If there are subtle environmental cues that are related to the extirpation of populations of this secretive lizard in Kansas, we may miss its disappearance altogether.

15) Describe your expertise/experience with the species you are petitioning.
Involved with survey work for this and other reptile species within its range in Kansas, Missouri, and Arkansas. _____

Note on citations: It is not necessary to provide extensive literature citations, however, any pertinent data is helpful in determining species status. Feel free to attach any information you may have pertaining to the status or biology of this species that will help in its review.

If there is insufficient space for your reply to any of the informational requests, attach extra sheets. Be sure to reference your attached material to the appropriate numbered questions.

The currently-listed Kansas species can be found at:

<http://ksoutdoors.com/Services/Threatened-and-Endangered-Wildlife/Kansas-Threatened-and-Endangered-Species-Statewide> (Threatened and Endangered list)

<http://ksoutdoors.com/Services/Threatened-and-Endangered-Wildlife> (SINC list)

Petitioner(s):

Name: J. Daren Riedle _____
Address: 512 SE 25th Ave _____
City: Pratt _____ State KS _____ Zip 67124 _____
Phone: 620-672-0746 _____

e-mail: daren.riedle@ks.gov

Send fully completed petition to (deadline is **October 5, 2023**): kdwpt.ess@ks.gov or

Kansas Department of Wildlife and Parks

Attn: Ecological Services

512 SE 25th Ave

Pratt, KS 67124-8174