PENNSYLVANIA
WILDLIFE ACTION PLAN

2025–2035

Species of Greatest Conservation Need Species Accounts

Appendix 1.4 - Amphibians and Reptiles

Jefferson Salamander
Blue-spotted Salamander
Marbled Salamander
Eastern Tiger Salamander
Eastern Hellbender
Green Salamander
Northern Ravine Salamander
Eastern Mud Salamander
Mudpuppy
Fowler's Toad
Eastern Cricket Frog
Upland Chorus Frog
New Jersey Chorus Frog
Western Chorus Frog
Mountain Chorus Frog
Eastern Spadefoot
Northern Leopard Frog
Coastal Plains Leopard Frog
Atlantic Coast Leopard Frog
Spotted Turtle
Wood Turtle
Bog Turtle
Blanding's Turtle
Northern Red-bellied Cooter
Woodland Box Turtle
Eastern Mud Turtle
Northern Coal Skink
Broadhead Skink
Eastern Worm Snake
Kirtland's Snake
Eastern Hog-nosed Snake
Northern Rough Greensnake
Queen Snake
Eastern Smooth Earthsnake
Eastern Copperhead
Timber Rattlesnake
Eastern Massasauga

Suggested Species Account Citation Format:

Account author last name, first initial, additional authors as applicable. Species common name (*Scientific name*) *In* Pennsylvania Game Commission and Pennsylvania Fish and Boat Commission. 2026. Pennsylvania Wildlife Action Plan, 2025-2035. C. Haffner, D. Day, and N. Welte, editors. Pennsylvania Game Commission and Pennsylvania Fish and Boat Commission, Harrisburg, Pennsylvania.

PENNSYLVANIA
WILDLIFE ACTION PLAN

Jefferson Salamander

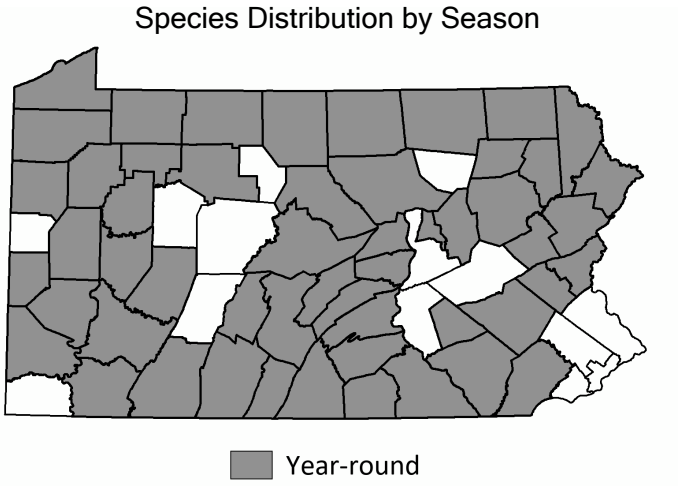
Ambystoma jeffersonianum

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



J. Uplinger



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.

NatureServe Global Rank: G4

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Data Deficient

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3S4

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: Medium

Season: Year-round

Specific Habitat Requirements: Vernal pools in mixed deciduous forests; primarily upland sites.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Appalachian (Hemlock)-Northern Hardwood Forest

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Plan and implement a wildlife passage project to benefit this species and others.

Objective: Identify at least 1 amphibian road crossing site and plan implementation.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of road crossing projects identified

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, Other state agency, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: marbled salamander, blue-spotted salamander, northern leopard frog, eastern spadefoot, spotted turtle

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Outreach, communication and distribution

Specific Action: Promote vernal pool conservation strategies.

Objective: Increase implementation of vernal pool best management practices (BMPs) on private and public lands.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of management plans

Potential Collaborators: Conservancies & Land Trusts, Private Landowners

Locations: Statewide

Other species likely to benefit from this action: vernal pool amphibians and reptiles

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs

Lead(s) :

Link:

Description:

Bogart, J.P. and M.W. Klemens. 1997. Hybrids and genetic interactions of mole salamanders (Ambystoma jeffersonianum and A. laterale) (Amphibia: Caudata) in New York and New England. American Museum Novitates, Number 3218, American Museum of Natural History, New York.

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Petranka, J. W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C.

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Blue-spotted Salamander

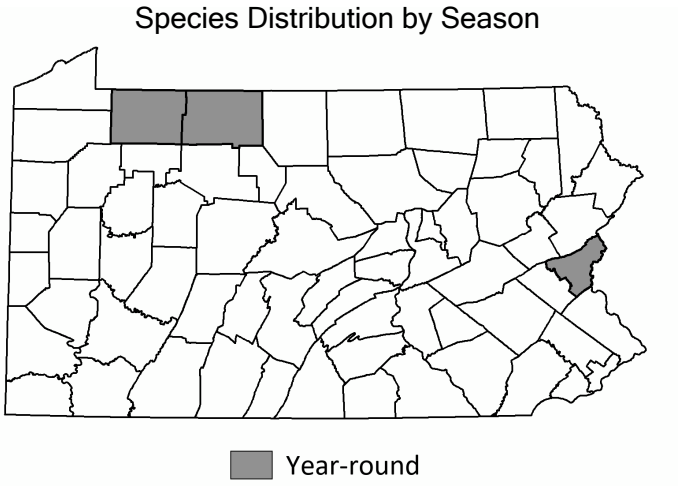
Ambystoma laterale

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



A. Shiels, Pennsylvania Fish and Boat Commission



Conservation Profile

PA 10-Year Conservation Goal: Protect and maintain known blue-spotted salamander populations.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: High Concern

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S1S2

State Rank Year: 2025

PA Legal Designation: Endangered

PA Abundance: Unknown

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: High

Season: Year-round

Specific Habitat Requirements: Forested floodplain wetlands and red maple swamps.

Primary Habitat: Land-Water Interface

Primary Habitat Type: Riparian & Floodplains

Primary Specific Habitat: North-Central Appalachian Large River Floodplain

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** High

Specific Threat: Recreational use may degrade habitat and facilitate access to poaching at sites.

Action Category: Detection and intervention

Specific Action: Increase awareness of poaching threats with Wildlife Conservation Officers.

Objective: Train and support law enforcement annually in anti-poaching efforts

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of officers trained

Potential Collaborators: Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Physiographic Province: Ridge and Valley

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Oil and Gas Drilling **Threat Impact:** High

Specific Threat: Well drilling can alter wetland hydrology, water quality, and remove and fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Minimize and avoid development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that protect or avoid Blue-spotted Salamander habitat

Potential Collaborators: Businesses, Pennsylvania Game Commission, Private Landowners

Locations: Physiographic Province: Ridge and Valley, Appalachian Plateaus. Physiographic Section: Great Valley

Other species likely to benefit from this action: Marbled salamander, Northern leopard frog, spotted turtle, eastern ribbonsnake, rare mussels, eastern hellbender, mudpuppy

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** Very High

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Request developers use amphibian tunnels and associated barriers when roads are constructed.

Objective: To prevent road mortality and fragmentation via reactive planning.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of crossings initiated.

Potential Collaborators: Local agencies & municipalities, Other state agency, Pennsylvania Game Commission

Locations: Physiographic Province: Ridge and Valley, Appalachian Plateaus. Physiographic Section: Great Valley, Deep Valleys

Other species likely to benefit from this action: Marbled salamander, Northern leopard frog, spotted turtle, eastern ribbonsnake,

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** High

Specific Threat: Recreational use may degrade habitat and facilitate access to poaching at sites.

Action Category: Alliance and partnership development

Specific Action: Coordinate with public landowners for species-specific management practices.

Objective: Reduce recreational overuse of sensitive habitats through coordinated planning.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of management plans shared

Potential Collaborators: Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Physiographic Province: Appalachian Plateaus, Ridge and Valley. Physiographic Section: Deep Valleys, Great Valley

Other species likely to benefit from this action: Marbled salamander, Northern leopard frog, spotted turtle, eastern ribbonsnake, rare mussels, eastern hellbender, mudpuppy

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** Very High

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Conduct environmental review to identify impacts from roads and utilities in occupied or suitable habitats for this species.

Objective: Avoid development of new roads in Blue-spotted salamander habitat

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Blue-spotted Salamander habitat.

Potential Collaborators: Other state agency

Locations: Physiographic Province: Appalachian Plateaus, Ridge and Valley. Physiographic Section: Deep Valleys, Great Valley

Other species likely to benefit from this action: Vernal pool amphibians and reptiles

Season: Year-round

Threat Category: Annual and Perennial Non-timber Crops **Threat Impact:** Very High

Specific Threat: Sedimentation and chemical runoff can degrade water quality and habitats.

Action Category: Manage non-living habitat components

Specific Action: Work with willing landowners to implement conservation buffers near agricultural areas, to protect this species' habitat.

Objective: Implement at least 15 conservation buffer projects protecting Blue-spotted Salamander habitats.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of landowner contacts

Potential Collaborators: Private Landowners, U.S. Department of Agriculture-Natural Resources Conservation Service

Locations: Physiographic Province: Ridge and Valley, Appalachian Plateaus. Physiographic Section: Great Valley, Deep Valleys

Other species likely to benefit from this action: Marbled salamander, Northern leopard frog, spotted turtle, eastern ribbonsnake, rare mussels, eastern hellbender, mudpuppy

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Continue species occurrence surveys to confirm sites and search for additional records.	
2	Develop a long-term monitoring program to include assessments of each subpopulation as well as important parameters of suitable habitat.	

Name: Informal annual spot-checking monitoring

Lead(s) : Pennsylvania Fish and Boat Commission

Link:

Description:

Bogart, J.P. and M.W. Klemens. 1997. Hybrids and genetic interactions of mole salamanders (Ambystoma jeffersonianum and A. laterale) (Amphibia: Caudata) in New York and New England. American Museum Novitates, Number 3218, American Museum of Natural History, New York.

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Petranka, J. W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C.

PFBC (Pennsylvania Fish and Boat Commission). 2010. Amphibian and Reptile Status Change Documentation Form: Blue-spotted Salamander. Harrisburg, Pennsylvania.

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Marbled Salamander

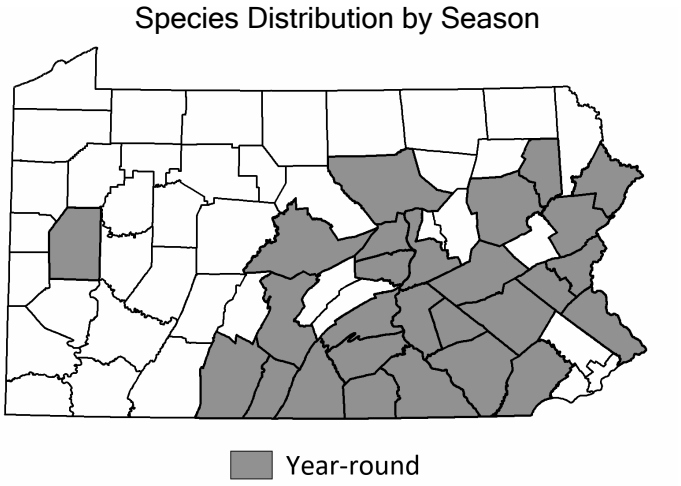
Ambystoma opacum

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Data Deficient

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: Medium

Season: Year-round

Specific Habitat Requirements: Vernal pools in mixed deciduous forests; both upland and floodplain sites.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Unknown

Season: Year-round

Threat Category: Logging and Wood Harvesting **Threat Impact:** Low

Specific Threat: Logging may destroy required upland forested habitat and lead to water quality degradation in seasonal pools.

Action Category: Outreach, communication and distribution

Specific Action: Promote vernal pool conservation strategies.

Objective: Increase implementation of vernal pool best management practices (BMPs) on public and private lands.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations: Statewide

Other species likely to benefit from this action: vernal pool amphibians and reptiles

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Plan and implement a wildlife passage project to benefit this species and others.

Objective: Identify at least 1 amphibian road crossing site and plan implementation.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of road crossing projects identified

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, Other state agency, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: marbled salamander, blue-spotted salamander, northern leopard frog, eastern spadefoot, spotted turtle

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Outreach, communication and distribution

Specific Action: Promote vernal pool conservation strategies.

Objective: Increase implementation of vernal pool best management practices (BMPs) on public and private lands.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of management plans

Potential Collaborators: Conservancies & Land Trusts, Private Landowners

Locations: Statewide

Other species likely to benefit from this action: vernal pool amphibians and reptiles

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs **Lead(s) :**

Link:

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Petranka, J. W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C.

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Eastern Tiger Salamander

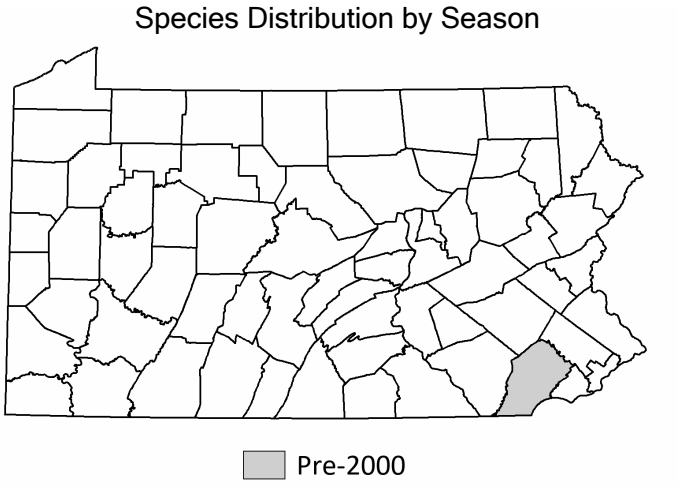
Ambystoma tigrinum

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



J. Uplinger



Conservation Profile

PA 10-Year Conservation Goal: Establish a self-sustaining population of Eastern Tiger Salamanders in Pennsylvania.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: Very High Concern

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Low

SGCN Season: Year-round

State Rank (Season): SX

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: Unknown

Season: Year-round

Specific Habitat Requirements: Vernal pools in mixed deciduous forests; both upland and floodplain sites in the Coastal Plain.

Primary Habitat: Palustrine

Primary Habitat Type: Vernal Pools/Ephemeral Wetlands

Primary Specific Habitat: Central Interior Highlands and Appalachian Sinkhole and Depression Pond

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** Very High

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Evaluation, effectiveness measures and learning

Specific Action: Evaluate reintroduction potential at suitable sites.

Objective: Identify and prioritize 2 potential sites for reintroduction.

Action Priority: 2-High **Action Urgency:** Initiate within 5-10 years **Measure:** Number of sites identified.

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission

Locations:

Other species likely to benefit from this action:

No known research needs.

Season: Year-round

Priority	Survey	Partners
1	Monitor the introduction site to measure success.	

No known monitoring programs.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

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Eastern Hellbender

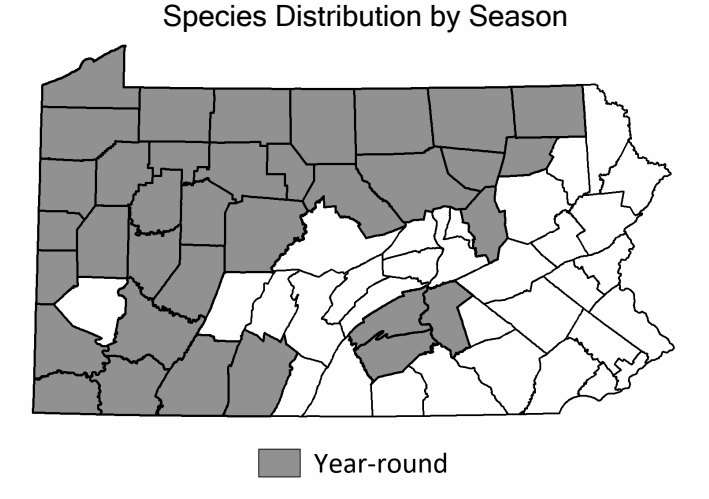
Cryptobranchus alleganiensis alleganiensis

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of population parameters in order to establish conservation and management actions that will prevent further declines and promote reproduction.

NatureServe Global Rank: G3T2

IUCN Red List Designation: Vulnerable

IUCN Red List Trend: Decreasing

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: High Concern

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: High - Medium

Season: Year-round

Specific Habitat Requirements: Good quality, cool-to-cold, moderate-to-large streams and rivers with abundant rock cover (shale) and abundant crayfish populations.

Primary Habitat: Riverine

Primary Habitat Type: Rivers and Streams

Primary Specific Habitat: Unknown

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** Medium - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of water pollution.

Action Category: Mitigate human environmental impact

Specific Action: Request developers use best management practices (BMPs) for reducing runoff when roads are constructed

Objective: Prevent pollution and fragmentation via reactive planning.

Action Priority: 2-High **Action Urgency:** Initiate within 5-10 years **Measure:** Number of projects receiving recommendations

Potential Collaborators: Local agencies & municipalities, Other state agency

Locations: HUC6 Watershed: Lower Susquehanna, U. Susquehanna, W. Br. Susquehanna, Allegheny, Monongahela

Other species likely to benefit from this action: aquatic species in streams and rivers

Season: Year-round

Threat Category: Annual and Perennial Non-timber Crops **Threat Impact:** Medium - Low

Specific Threat: Sedimentation and chemical runoff can degrade water quality and habitats.

Action Category: Outreach, communication and distribution

Specific Action: Conduct outreach to developers and private landowners to promote best management practices (BMPs) for riparian buffer protection and restoration.

Objective: Provide information on best management practices (BMPs) to 100 landowners in 10 years.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of technical assists

Potential Collaborators: Private Landowners

Locations: HUC6 Watershed: Allegheny, U. Ohio-Beaver, Lower Susquehanna, U. Susquehanna, W. Br. Susquehanna, Monongahela

Other species likely to benefit from this action: mudpuppy, freshwater mussels, fish

Season: Year-round

Threat Category: Domestic and Urban Waste Water **Threat Impact:** Medium - Low

Specific Threat: Degraded water quality directly contributes to decline in Eastern Hellbender populations.

Action Category: Basic research and status monitoring

Specific Action: Monitor species abundance and distribution over time to assess population trends in vulnerable watersheds.

Objective: Conduct long-term population monitoring in 1 stream per year

Action Priority: 3-Medium **Action Urgency:** **Measure:** Number of streams surveyed

Potential Collaborators: Pennsylvania Fish and Boat Commission

Locations: HUC6 Watershed: Lower Susquehanna, U. Susquehanna, W. Br. Susquehanna, Allegheny, Monongahela

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** Low

Specific Threat: Poaching

Action Category: Outreach, communication and distribution

Specific Action: Train Wildlife Conservation Officers to recognize poaching threats to this species.

Objective: Train and support law enforcement annually in anti-poaching efforts.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of officers trained

Potential Collaborators: Pennsylvania Fish and Boat Commission

Locations: HUC6 Watershed: Lower Susquehanna, U. Susquehanna, W. Br. Susquehanna, Allegheny, U. Ohio-Beaver, Monongahela

Other species likely to benefit from this action: mudpuppy

Season: Year-round

Threat Category: Logging and Wood Harvesting **Threat Impact:** Low

Specific Threat: Sedimentation and chemical runoff can degrade water quality and habitats.

Action Category: Manage non-living habitat components

Specific Action: Implement best management practices (BMPs) to reduce forest management impacts to stream water quality and habitats.

Objective: Prevent pollution and fragmentation via reactive planning.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of projects receiving recommendations

Potential Collaborators: Businesses, Pennsylvania Association of Conservation Districts, Pennsylvania Department of Conservation and Natural Resources, Private Landowners

Locations: HUC6 Watershed: Lower Susquehanna, W. Br. Susquehanna, U. Susquehanna, Allegheny, Monongahela

Other species likely to benefit from this action: riverine species

Season: Year-round

Priority	Need	Partners
1	Conduct landscape level analysis of occupied-and- declining, and unoccupied streams.	
2	Develop a monitoring protocol.	
3	Evaluate response to surveyor-induced habitat disturbances (e.g. rock flipping).	

Season: Year-round

Priority	Survey	Partners
1	Monitor species abundance and distribution over time to assess population trends in vulnerable watersheds.	Pennsylvania Fish and Boat Commission
2	Continue species occurrence surveys to confirm sites and search for additional records in order to complete status assessment (assess historic sites, gap areas).	
3	Compilation of current and historic data into a single database.	

Name: No Current Monitoring Programs

Lead(s) :

Link:

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Petranka, J. W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C.

Quinn, S. A., J. P. Gibbs, M. H. Hall, and P. J. Petokas. 2013. Multiscale factors influencing distribution of the eastern hellbender salamander (Cryptobranchus alleganiensis alleganiensis) in the northern segment of its range. Journal of Herpetology, 47:78-84.

Regester, K. J., H. Simpson, E. J. Chapman, and P. J. Petokas. 2012. Occurrence of the fungal pathogen Batrachochytrium dendrobatidis among eastern hellbender populations (Cryptobranchus a. alleganiensis) within the Allegheny-Ohio and Susquehanna River Drainages, Pennsylvania, USA. Herpetological Review 43:150-159.

Santas, A. J., T. Persaud, B. A. Wolfe, and J. M. Bauman. 2013. Noninvasive method for a statewide survey of eastern hellbenders Cryptobranchus alleganiensis using environmental DNA. International Journal of Zoology 2013 doi:10.1155/2013/174056 (accessed July 2015).

Spear, S. F., J. D. Grove, L. A. Williams, and L. P. Waits. 2015. Using environmental DNA methods to improve detectability in a hellbender (Cryptobranchus alleganiensis) monitoring program. Biological Conservation 183:38-45.

PENNSYLVANIA
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Green Salamander

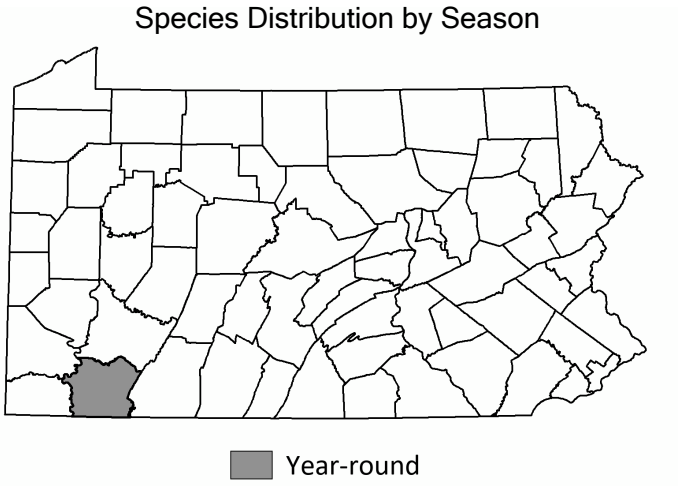
Aneides aeneus

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



J. Uplinger



Conservation Profile

PA 10-Year Conservation Goal: Protect and maintain known green salamander populations and manage habitat connectivity corridors.

NatureServe Global Rank: G3G4

IUCN Red List Designation: Near Threatened

IUCN Red List Trend: Decreasing

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: Moderate Concern

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S2

State Rank Year: 2025

PA Legal Designation: Threatened

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: Very High - Medium

Season: Year-round

Specific Habitat Requirements: Moist crevices in sandstone outcrops and ledges as well as surrounding forest floor and trees.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Appalachian (Hemlock)-Northern Hardwood Forest

Season: Year-round

Threat Category: Droughts **Threat Impact:** High - Low

Specific Threat: Increased drought and desiccation of wetlands leads to direct mortality.

Action Category: Conservation planning

Specific Action: Coordinate with state partners to develop management plans for known Green Salamander colonies.

Objective: Develop management plans at all state-owned Green Salamander colonies in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations:

Other species likely to benefit from this action: Allegheny woodrat, timber rattlesnake

Season: Year-round

Threat Category: Logging and Wood Harvesting **Threat Impact:** High - Low

Specific Threat: Logging may destroy required upland forested habitat and lead to desiccation of habitats.

Action Category: Conservation planning

Specific Action: Coordinate with state partners to develop management plans for known Green Salamander colonies.

Objective: Develop management plans at all state-owned Green Salamander colonies in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Physiographic Section: Allegheny Mountain

Other species likely to benefit from this action: Allegheny woodrat, timber ratllesnake

Season: Year-round

Threat Category: Mining and Quarrying **Threat Impact:** Low

Specific Threat: Mining can alter wetland hydrology, water quality, and remove and fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitat and incorporate best management practices (BMPs) into development plans.

Objective: Prevent energy extraction and development impacts to Green Salamander populations.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Green Salamander habitat

Potential Collaborators:

Locations: Physiographic Section: Allegheny Mountain

Other species likely to benefit from this action: Timber rattlesnake, Allegheny Woodrat

Season: Year-round

Threat Category: Renewable Energy **Threat Impact:** Medium - Low

Specific Threat: Solar production can alter shading, wetland hydrology, water quality, and remove and fragment habitats.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitat and incorporate best management practices (BMPs) into development plans.

Objective: Prevent energy extraction and development impacts to Green Salamander populations.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Green Salamander habitat

Potential Collaborators:

Locations: Physiographic Section: Allegheny Mountain

Other species likely to benefit from this action: Timber rattlesnake, Allegheny woodrat

Season: Year-round

Priority	Need	Partners
2	Evaluate vulnerability of Green Salamanders to loss of genetic variability and vigor, including minimum viable population size.	

Season: Year-round

Priority	Survey	Partners
1	Continue species occurrence surveys to confirm sites and search for additional records.	
2	Develop a long-term monitoring program to include assessments of each subpopulation as well as important parameters of suitable habitat.	

Name: No Current Monitoring Programs

Lead(s) :

Link:

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Pennsylvania Fish and Boat Commission. 2023. Species Action Plan: Green Salamander (Aneides aeneus).

Petranka, J. W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C.

PENNSYLVANIA
WILDLIFE ACTION PLAN

Northern Ravine Salamander

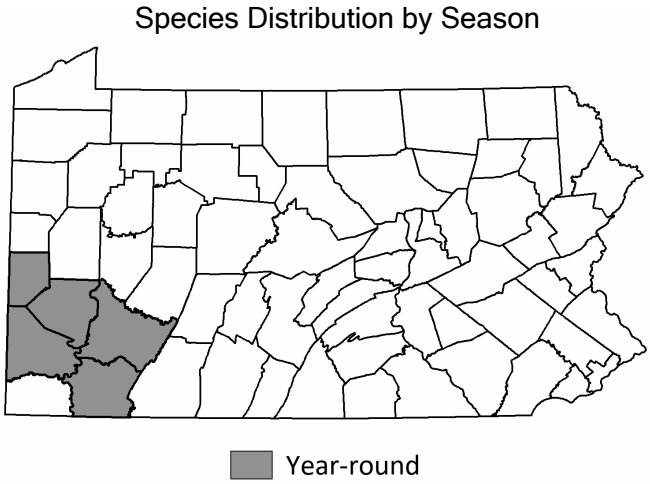
Plethodon electromorphus

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S2S3

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: High - Low

Season: Year-round

Specific Habitat Requirements: Forested uplands.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Appalachian (Hemlock)-Northern Hardwood Forest

Season: Year-round

Threat Category: Logging and Wood Harvesting **Threat Impact:** Medium - Low

Specific Threat: Logging may destroy required upland forested habitat and lead to water quality degradation in seasonal pools.

Action Category: Outreach, communication and distribution

Specific Action: Promote best management practices (BMPs) to minimize and avoid logging impacts to steep slope habitats.

Objective: Increase use of best management practices (BMPs) where logging occurs through outreach to one landowner per year.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations:

Other species likely to benefit from this action: forest dwelling amphibians and reptiles

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs

Lead(s) :

Link:

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Petranka, J. W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C.

PENNSYLVANIA
WILDLIFE ACTION PLAN

Eastern Mud Salamander

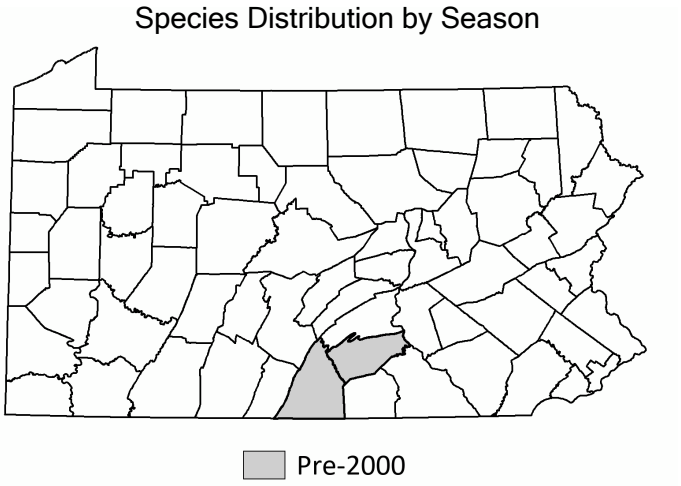
Pseudotriton montanus montanus

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish species status in the state.

NatureServe Global Rank: G5T5

IUCN Red List Designation: Not Evaluated

IUCN Red List Trend:

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Low

SGCN Season: Year-round

State Rank (Season): SH

State Rank Year: 2025

PA Legal Designation: Endangered

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: Very High

Season: Year-round

Specific Habitat Requirements: Bottomland swamp systems.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Appalachian (Hemlock)-Northern Hardwood Forest

Habitat Comments: no known extant records

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Prevent development-related impacts to Eastern Mud Salamander populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Eastern Mud Salamander habitat

Potential Collaborators: Businesses, Private Landowners

Locations: Physiographic Province: Ridge and Valley. Physiographic Section: South Mountain

Other species likely to benefit from this action: spring salamanders

Season: Year-round

Threat Category: Recreational Activities **Threat Impact:** High - Low

Specific Threat: Recreational use may degrade habitats, especially from all-terrain vehicle (ATV) use in seasonal pools.

Action Category: Conservation planning

Specific Action: Coordinate with public landowners (DCNR) for species-specific management practices.

Objective: Reduce recreational overuse of sensitive habitats through coordinated planning.

Action Priority: 1-Highest **Action Urgency:** Can wait 10 years to initiate **Measure:** Number of management plans shared

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources

Locations: Physiographic Province: Ridge and Valley. Physiographic Section: South Mountain

Other species likely to benefit from this action: spring salamanders

Season: Year-round

Threat Category: Droughts **Threat Impact:** Very High

Specific Threat: Increased drought and desiccation of wetlands leads to direct mortality.

Action Category: Basic research and status monitoring

Specific Action: Conduct targeted surveys across this species' historic range to understand population status and threats.

Objective: Conduct targeted surveys within historic range.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of blocks surveyed (PARS)

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources

Locations: Physiographic Province: Ridge and Valley

Other species likely to benefit from this action: associated reptiles and amphibians

Season: Year-round

Threat Category: Storms and Flooding **Threat Impact:** Very High

Specific Threat: Increased flooding can degrade habitat quality or wipe out individuals.

Action Category: Basic research and status monitoring

Specific Action: Conduct targeted surveys across this species' historic range to understand population status and threats.

Objective: Conduct targeted surveys within historic range.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of blocks surveyed (PARS)

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources

Locations: Physiographic Province: Ridge and Valley

Other species likely to benefit from this action: associated reptiles and amphibians

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs **Lead(s) :**

Link:

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Petranka, J. W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C.

PENNSYLVANIA
WILDLIFE ACTION PLAN

Mudpuppy

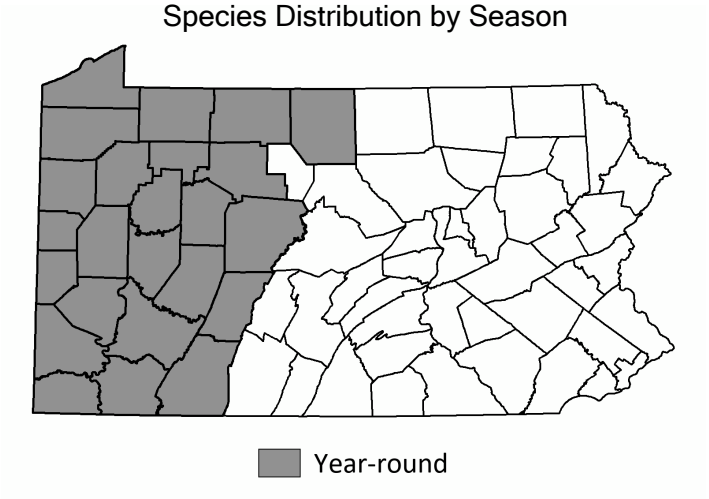
Necturus maculosus

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



B. Ruhe, Mid-Atlantic Center for Herpetology and Conservation



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.

NatureServe Global Rank: G5

IUCN Red List Designation: Not Evaluated

IUCN Red List Trend:

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Data Deficient

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3S4

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: Medium

Season: Year-round

Specific Habitat Requirements: Lotic and lentic habitats.

Primary Habitat: Riverine

Primary Habitat Type: Big Rivers

Primary Specific Habitat: Warm, Large River

Season: Year-round

Threat Category: Fishing and Harvesting of Aquatic Resources **Threat Impact:** Low

Specific Threat: Accidental bycatch from anglers can lead to mortality.

Action Category: Outreach, communication and distribution

Specific Action: Conduct a multi-media public engagement campaign to reduce incidental Common Mudpuppy loss from anglers.

Objective: Produce 3 outreach materials (e.g., fact sheet, in the PFBC Summary Book, PFBC website) in the next 5 years to address Common Mudpuppy incidental catch.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of publications

Potential Collaborators: Pennsylvania Fish and Boat Commission

Locations: HUC6 Watershed: E. Lake Erie, U. Ohio-Beaver, Allegheny, Monongahela

Other species likely to benefit from this action: eastern hellbender

Season: Year-round

Threat Category: Other Threat **Threat Impact:** Low

Specific Threat: Chemical treatment (TFM 3-trifluoromethyl-4-nitrophenol) for sea lamprey control negatively impacts Common Mudpuppy.

Action Category: Conserve via zoning or informal designations

Specific Action: Conduct environmental review for mussels and associated species susceptible to 3-trifluoromethyl-4-nitropheol (TFM) lampricide.

Objective: Use the permitting process to avoid non-target species mortality from 3-trifluoromethyl-4-nitropheol (TFM) lampricide.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of permits issued

Potential Collaborators: Pennsylvania Department of Environmental Protection, U.S. Fish and Wildlife Service

Locations: HUC6 Watershed: E. Lake Erie

Other species likely to benefit from this action: freshwater mussels and nongame fish

Season: Year-round

Priority	Need	Partners
1	Determine safe thresholds for TFM treatment in mudpuppy occupied waters	Pennsylvania Department of Environmental Protection, U.S. Fish and Wildlife Service

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs **Lead(s) :**

Link:

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Petranka, J. W. 1998. Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, D.C.

PENNSYLVANIA
WILDLIFE ACTION PLAN

Fowler's Toad

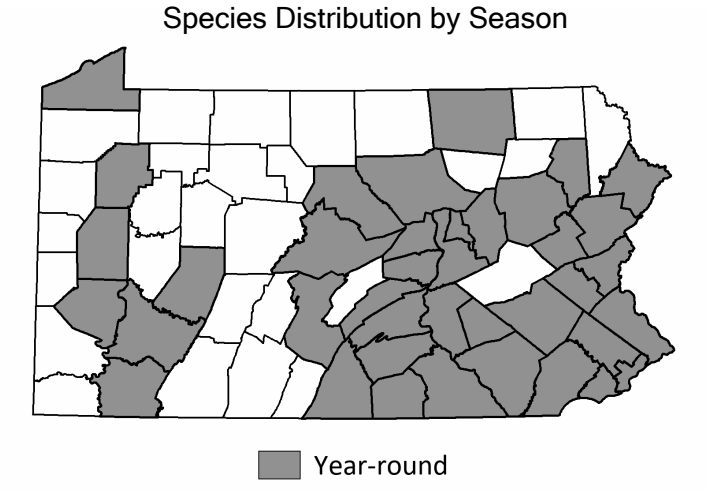
Anaxyrus fowleri

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will maintain this species.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S2S3

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: Very High - Medium

Season: Year-round

Specific Habitat Requirements: River bottoms, lake edges, sandy places, urban gardens with alluvium deposits of dry gravelly and sandy substrate.

Primary Habitat: Land-Water Interface

Primary Habitat Type: Riparian & Floodplains

Primary Specific Habitat: North-Central Appalachian Large River Floodplain

Season: Year-round

Threat Category: Introduced Genetic Material **Threat Impact:** High - Low

Specific Threat: Changing habitats seem to favor A. americanus, a competitor species

Action Category: Basic research and status monitoring

Specific Action: Conduct targeted surveys across this species' range to understand population status and threats.

Objective: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of blocks surveyed (PARS)

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Private Landowners

Locations:

Other species likely to benefit from this action: amphibians and reptiles sharing habitats

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Medium

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Basic research and status monitoring

Specific Action: Conduct targeted surveys across this species' range to understand population status and threats.

Objective: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of blocks surveyed (PARS)

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Private Landowners

Locations:

Other species likely to benefit from this action: amphibians and reptiles sharing habitat

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Medium

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Plan and implement a wildlife passage project to benefit this species and others.

Objective: Identify at least 1 amphibian road crossing site and plan implementation.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of road crossing projects identified

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, Other state agency, Pennsylvania Department of Conservation and Natural Resources

Locations:

Other species likely to benefit from this action: turtles and pool-breeding amphibians

Season: Year-round

Priority	Need	Partners
1	Assess hybridization between A. americanus and A. fowleri.	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs **Lead(s) :**

Link:

Description:

AmphibiaWeb. 2015. Information on amphibian biology and conservation. AmphibiaWeb. Berkeley, California. Full list of references available from http://amphibiaweb.org (accessed July 2015).

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Eastern Cricket Frog

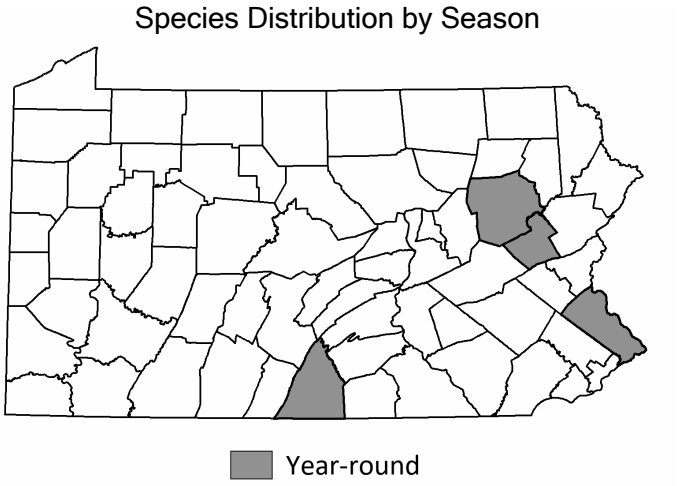
Acris crepitans

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Protect and maintain known populations; plan for reintroduction at suitable sites within the historically occupied range.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S1

State Rank Year: 2025

PA Legal Designation: Endangered

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: Very High

Season: Year-round

Specific Habitat Requirements: Lakes, bogs, ponds, vernal pools and large open water marsh with vegetated shores and edges.

Primary Habitat: Palustrine

Primary Habitat Type: Non-Tidal Wetlands

Primary Specific Habitat: North Atlantic Coastal Plain Basin Swamp and Wet Hardwood Forest

Season: Year-round

Threat Category: Commercial and Industrial Areas **Threat Impact:** High

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Eastern Cricket Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Atlantic Coastal Plain, Ridge and Valley

Other species likely to benefit from this action: Eastern spadefoot, Atlantic Coast leopard frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Eastern Cricket Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Ridge and Valley. Physiographic Section: Lowland and Intermediate Upland

Other species likely to benefit from this action: Eastern spadefoot, southern leopard frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Mining and Quarrying **Threat Impact:** High

Specific Threat: Mining can alter wetland hydrology, water quality, and remove and fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Eastern Cricket Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Ridge and Valley, Atlantic Coastal Plain

Other species likely to benefit from this action: Eastern spadefoot, mid-Atlantic Coast leopard frog,Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** Very High

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Conduct environmental review screening to avoid and minimize impacts from roads or utilities in habitats for this species.

Objective: Avoid development of new roads in Eastern Cricket Frog habitat.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Eastern Cricket Frog habitat

Potential Collaborators: Businesses, Other state agency, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Ridge and Valley

Other species likely to benefit from this action: Eastern spadefoot, mid-Atlantic Coast leopard frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** Very High

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Request developers use amphibian tunnels and barriers when roads are reconstructed.

Objective: To prevent road mortality and fragmentation via reactive planning

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of crossings initiated

Potential Collaborators: Local agencies & municipalities, Other state agency

Locations: Physiographic Province: Ridge and Valley, Atlantic Coastal Plain

Other species likely to benefit from this action: Eastern spadefoot, mid-Atlantic Coast leopard frog, Spotted Turtle, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Storms and Flooding **Threat Impact:** Very High

Specific Threat: Increased flooding can degrade habitat quality or wipe out individuals.

Action Category: Evaluation, effectiveness measures and learning

Specific Action: Evaluate reintroduction potential at suitable sites.

Objective: Identify and prioritize 2 potential sites for reintroduction.

Action Priority: 2-High **Action Urgency:** Initiate within 5-10 years **Measure:** Number of sites identified

Potential Collaborators: Conservancies & Land Trusts

Locations: Physiographic Province: Ridge and Valley

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Tourism and Recreational Areas **Threat Impact:** High

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conservation planning

Specific Action: Develop management plans with state and local partners to properly manage habitat in priority areas.

Objective: Propose management plans at all publicly owned Eastern Cricket Frog properties in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission

Locations: Physiographic Province: Ridge and Valley, Atlantic Coastal Plain

Other species likely to benefit from this action: aquatic wildlife

Season: Year-round

Threat Category: Droughts **Threat Impact:** Very High

Specific Threat: Increased drought and desiccation of habitats leads to direct mortality.

Action Category: Complementary or alternative conservation measures

Specific Action: Encourage willing landowners to proactively protect occupied habitats and corridors.

Objective: Develop conservation package options and share with up to 10 landowners in 10 years.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of landowner contacts

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Fish and Boat Commission, Private Landowners

Locations: Physiographic Province: Ridge and Valley

Other species likely to benefit from this action: aquatic wildlife

Season: Year-round

Threat Category: Storms and Flooding **Threat Impact:** Very High

Specific Threat: Increased flooding can degrade habitat quality or wipe out individuals.

Action Category: Complementary or alternative conservation measures

Specific Action: Encourage willing landowners to proactively protect occupied habitats and corridors.

Objective: Develop conservation package options and share with up to 10 landowners in 10 years.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of landowner contacts

Potential Collaborators: Conservancies & Land Trusts, Private Landowners

Locations: Physiographic Province: Ridge and Valley

Other species likely to benefit from this action: aquatic wildlife

Season: Year-round

Priority	Need	Partners
1	Develop a reintroduction and augmentation protocol for the eastern cricket frog.	
2	Evaluate effectiveness of reintroduction and augmentation intitiatives.	

Season: Year-round

Priority	Survey	Partners
1	Continue species occurrence surveys to confirm sites and search for additional records.	

No known monitoring programs.

Hulse, A. C., C. J. McCoy, and E. J. Censky. 2001. Amphibians and Reptiles of Pennsylvania and the Northeast. Cornell University, Ithaca, New York.

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Upland Chorus Frog

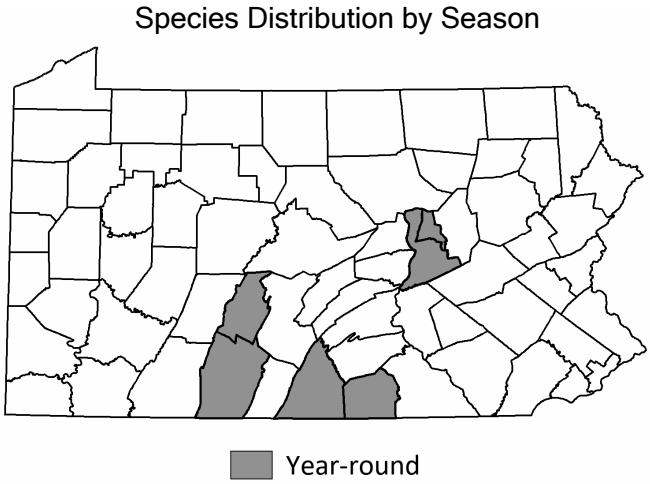
Pseudacris feriarum

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and habitat parameters in order to establish conservation and management actions that will prevent further declines as well as allow for restoration of populations.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S1

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: Very High - High

Season: Year-round

Specific Habitat Requirements: Open palustrine emergent wetlands (PEM) mixed with small, shallow areas of temporary (vernal) standing water in forested areas.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Appalachian (Hemlock)-Northern Hardwood Forest

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitat and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to this species.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Upland Chorus Frog habitat.

Potential Collaborators: Pennsylvania Department of Environmental Protection

Locations:

Other species likely to benefit from this action: forested wetland amphibians and reptiles

Season: Year-round

Threat Category: Other Ecosystem Modifications **Threat Impact:** Very High

Specific Threat: Succession of habitats from open canopy meadows or wetlands to closed canopy can remove habitat.

Action Category: Manage non-living habitat components

Specific Action: Coordinate with state partners to maintain open emergent wetland habitats.

Objective: Encourage habitat management at occupied sites on public lands.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of management plans

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations:

Other species likely to benefit from this action: wetland amphibians and reptiles

Season: Year-round

Priority	Need	Partners
1	What are the best management practices (BMPs) to protect habitats?	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs **Lead(s) :**

Link:

Description:

AmphibiaWeb. 2015. Information on amphibian biology and conservation. AmphibiaWeb. Berkeley, California. Full list of references available from http://amphibiaweb.org (accessed July 2015).

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

New Jersey Chorus Frog

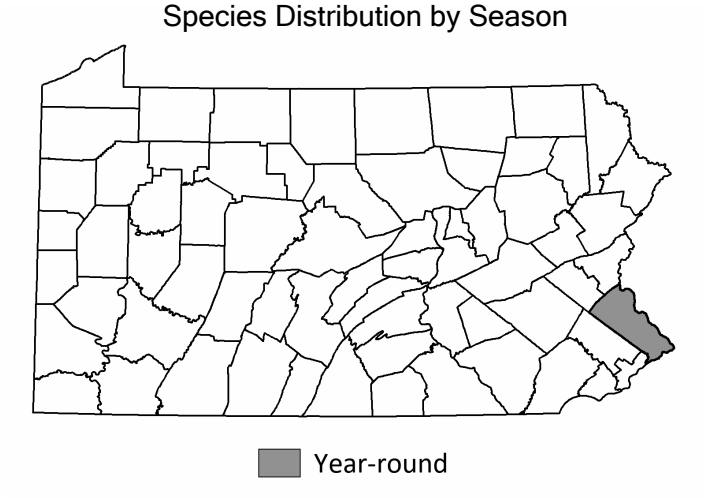
Pseudacris kalmi

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



B. Ruhe, Mid-Atlantic Center for Herpetology and Conservation



Conservation Profile

PA 10-Year Conservation Goal: Protect and maintain known populations; plan for the reintroduction at suitable sites within their historically occupied range.

NatureServe Global Rank: G4

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: Moderate Concern

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Low

SGCN Season: Year-round

State Rank (Season): SH

State Rank Year: 2025

PA Legal Designation: Endangered

PA Abundance: 1 - 50 individuals

PA Short-term Trend (10-year): Decline of 10-30%

Cumulative Threat Impact: Very High

Season: Year-round

Specific Habitat Requirements: Permanent and temporarily inundated habitats including forested swamp, marshes, wet meadows, floodplains, riparian corridors, ditches, and canals.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Central Appalachian Dry Oak-Pine Forest

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** Very High

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management plans (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect New Jersey Chorus Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations:

Other species likely to benefit from this action: Eastern spadefoot, southern leopard frog, Eastern Cricket Frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** Very High

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Evaluation, effectiveness measures and learning

Specific Action: Evaluate reintroduction potential at suitable sites.

Objective: Identify and prioritize 2 potential sites for reintroduction

Action Priority: 2-High **Action Urgency:** Initiate within 5-10 years **Measure:** Number of sites identified

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission

Locations:

Other species likely to benefit from this action:

Season: Year-round

Priority	Need	Partners
1	Develop a reintroduction and augmentation protocol for the New Jersey Chorus Frog.	
2	Evaluate the effectiveness of reintroduction and augmentation initiatives.	

Season: Year-round

Priority	Survey	Partners
1	Continue species occurrence surveys to confirm sites and search for additional records.	

Name: No Current Monitoring Programs

Lead(s) :

Link:

Description:

AmphibiaWeb. 2015. Information on amphibian biology and conservation. AmphibiaWeb. Berkeley, California. Full list of references available from http://amphibiaweb.org (accessed July 2015).

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Western Chorus Frog

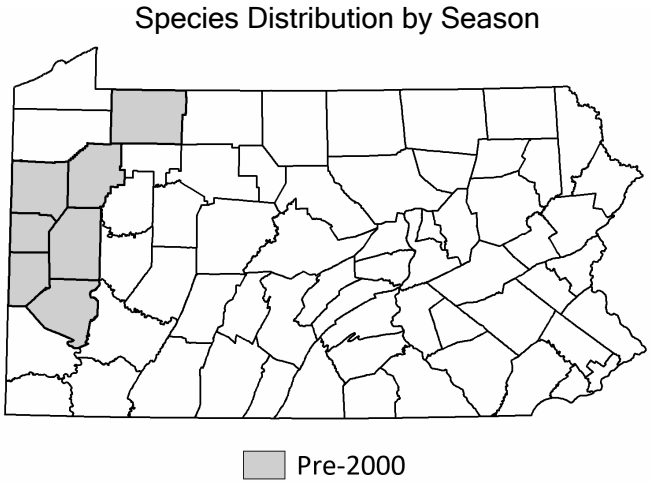
Pseudacris triseriata

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines. Plan for reintroduction at suitable sites within the range.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Decreasing

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Low

SGCN Season: Year-round

State Rank (Season): SH

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: Very High

Season: Year-round

Specific Habitat Requirements: Open palustrine emergent wetlands (PEM) mixed with small, shallow areas of temporary (vernal) standing water in forested areas.

Primary Habitat: Palustrine

Primary Habitat Type: Non-Tidal Wetlands

Primary Specific Habitat: North-Central Interior Wet Meadow-Shrub Swamp

Season: Year-round

Threat Category: Housing and Urban Areas

Threat Impact: Very High - High

Specific Threat: Development may have eliminated last known site.

Action Category: Basic research and status monitoring

Specific Action: Conduct targeted surveys across this species' historic range to understand population status and threats.

Objective: Conduct targeted surveys within historic range during calling season.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of blocks surveyed (PARS)

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action: forested wetland amphibians and reptiles

Season: Year-round

Threat Category: Housing and Urban Areas

Threat Impact: Very High - High

Specific Threat: Development may have eliminated last known site.

Action Category: Evaluation, effectiveness measures and learning

Specific Action: Evaluate reintroduction potential at suitable sites.

Objective: Identify and prioritize 2 potential sites for reintroduction.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of sites identified

Potential Collaborators: Conservancies & Land Trusts

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs

Lead(s) :

Link:

Description:

AmphibiaWeb. 2015. Information on amphibian biology and conservation. AmphibiaWeb. Berkeley, California. Full list of references available from http://amphibiaweb.org (accessed July 2015).

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Mountain Chorus Frog

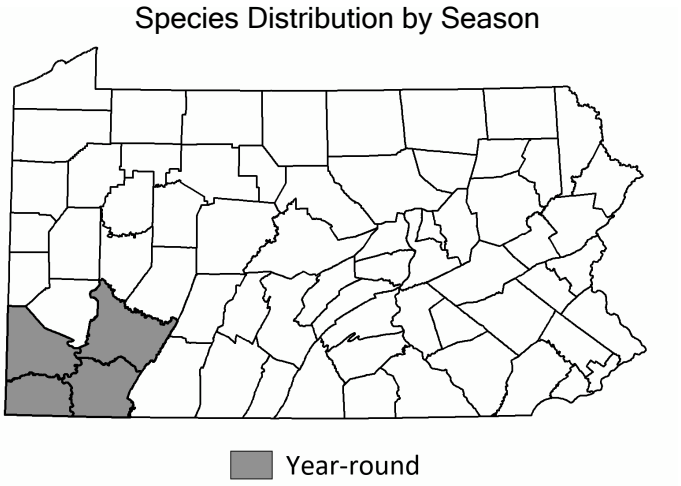
Pseudacris brachyphona

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and habitat parameters in order to establish conservation and management actions that will prevent further declines as well as allow for restoration of populations.

NatureServe Global Rank: GNR

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Decreasing

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S1S2

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Decline of 10-30%

Cumulative Threat Impact: Very High

Season: Year-round

Specific Habitat Requirements: Vernal pools and spring seeps within wooded slopes of deciduous forests; Slow-moving streams and ditches with abundant vegetation along edges.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: South-Central Interior Mesophytic Forest

Season: Year-round

Threat Category: Logging and Wood Harvesting **Threat Impact:** High - Medium

Specific Threat: Logging may destroy required upland forested habitat and lead to water quality degradation in seasonal pools.

Action Category: Outreach, communication and distribution

Specific Action: Promote vernal pool conservation strategies.

Objective: Increase implementation of vernal pool best management practices (BMPs) on public and private lands.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action: vernal pool amphibians and reptiles

Season: Year-round

Threat Category: Recreational Activities **Threat Impact:** High

Specific Threat: Recreational use may degrade habitats, especially from all-terrain vehicles (ATV) use in seasonal pools.

Action Category: Outreach, communication and distribution

Specific Action: Promote vernal pool conservation strategies.

Objective: Increase implementation of vernal pool best management practices (BMPs) on public and private lands.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action: vernal pool amphibians and reptiles

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** Medium

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to review and provide guidance on new roads or utilities to minimize or avoid negative impacts.

Objective: Avoid and minimize impacts of new roads on this species habitat.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Mountain Chorus Frog habitat

Potential Collaborators: Conservancies & Land Trusts, Non-governmental organizations, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action: forested wetland amphibians and reptiles

Season: Year-round

Priority	Need	Partners
1	Determine parameters of habitat in order to restore/replace degraded or extirpated sites	
2	What are the best management practices (BMPs) to protect habitats?	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs

Lead(s) :

Link:

Description:

AmphibiaWeb. 2015. Information on amphibian biology and conservation. AmphibiaWeb. Berkeley, California. Full list of references available from http://amphibiaweb.org (accessed July 2015).

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Eastern Spadefoot

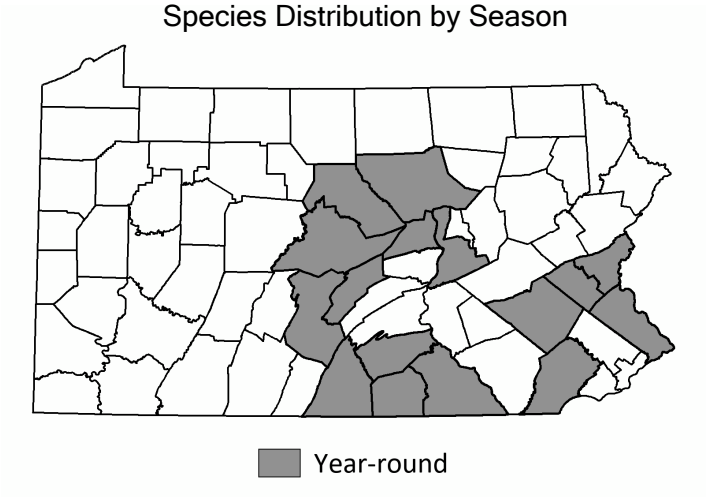
Scaphiopus holbrookii

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



B. Ruhe, Mid-Atlantic Center for Herpetology and Conservation



Conservation Profile

PA 10-Year Conservation Goal: Protect and maintain known eastern spadefoot populations; plan for reintroduction/augmentation at suitable sites within the range.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Data Deficient

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S2S3

State Rank Year: 2025

PA Legal Designation: Threatened

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: High - Medium

Season: Year-round

Specific Habitat Requirements: Temporary, ephemeral pools in depression areas in agricultural or wooded settings, upland habitat friable-loamy to sandy soils.

Primary Habitat: Open Upland

Primary Habitat Type: Agriculture: Cropland/Pastures

Primary Specific Habitat: Shrubland/grassland

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitat and incorporate best management practices (BMPs) into development plans.

Objective: Minimize and avoid development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Eastern Spadefoot habitat

Potential Collaborators:

Locations: Physiographic Province: Ridge and Valley, Piedmont

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Conduct environmental review to identify impacts from roads and utilities in occupied or suitable habitats for this species.

Objective: Avoid development of new roads in Eastern Spadefoot habitat.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Eastern Spadefoot habitat

Potential Collaborators: Other state agency

Locations: Physiographic Province: Ridge and Valley, Piedmont

Other species likely to benefit from this action: vernal pool amphibians and reptiles

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Request developers use amphibian tunnels and associated barriers when roads are reconstructed.

Objective: Prevent road mortality and fragmentation via reactive planning.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of crossings initiated

Potential Collaborators: Other state agency

Locations: Physiographic Province: Ridge and Valley, Piedmont

Other species likely to benefit from this action: vernal pool amphibians and reptiles

Season: Year-round

Threat Category: Commercial and Industrial Areas **Threat Impact:** Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Evaluation, effectiveness measures and learning

Specific Action: Evaluate reintroduction potential at suitable sites.

Objective: Identify and prioritize 2 potential sites for reintroduction.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of sites identified

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities

Locations: Physiographic Province: Piedmont, Ridge and Valley

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Complementary or alternative conservation measures

Specific Action: Protect existing populations through voluntary land preservation on both private and public properties.

Objective: Develop conservation package options and share with up to 10 landowners in 10 years.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of landowner contacts

Potential Collaborators: Conservancies & Land Trusts, Private Landowners

Locations: Physiographic Province: Ridge and Valley, Piedmont

Other species likely to benefit from this action: seasonal pool amphibians and reptiles

Season: Year-round

Priority	Need	Partners
1	Determine population size structure of key spadefoot populations.	
2	Determine habitat use and travel distance to breeding pools from burrows.	
3	Assess population genetics at isolated sites.	

Season: Year-round

Priority	Survey	Partners
1	Continue to survey for undocumented populations of eastern spadefoot within their historically-occupied range.	
2	Estimate population size through focused studies on newly documented populations.	

No known monitoring programs.

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PENNSYLVANIA
WILDLIFE ACTION PLAN

Northern Leopard Frog

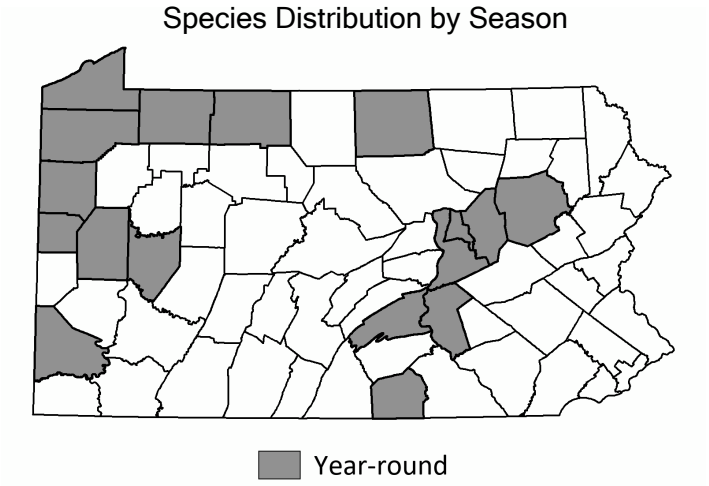
Lithobates pipiens

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Decreasing

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Data Deficient

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S2S3

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: High - Medium

Season: Year-round

Specific Habitat Requirements: Temporary pools and wet meadows for breeding, with adjacent grass/old field foraging areas.

Primary Habitat: Palustrine

Primary Habitat Type: Non-Tidal Wetlands

Primary Specific Habitat: North-Central Interior and Appalachian Acidic Peatland

Season: Year-round

Threat Category: Invasive Non-native/Alien Species/Diseases **Threat Impact:** High - Low

Specific Threat: Various invasive plants (e.g., Reed Canary Grass and Phragmites) will eliminate nesting habitats.

Action Category: Outreach, communication and distribution

Specific Action: Promote habitat management at key sites

Objective: Remove invasive plants in occupied habitats.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations: Physiographic Province: Appalachian Plateaus, Ridge and Valley

Other species likely to benefit from this action: wetland amphibians and reptiles

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs

Lead(s) :

Link:

Description:

AmphibiaWeb. 2015. Information on amphibian biology and conservation. AmphibiaWeb. Berkeley, California. Full list of references available from http://amphibiaweb.org (accessed July 2015).

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Coastal Plains Leopard Frog

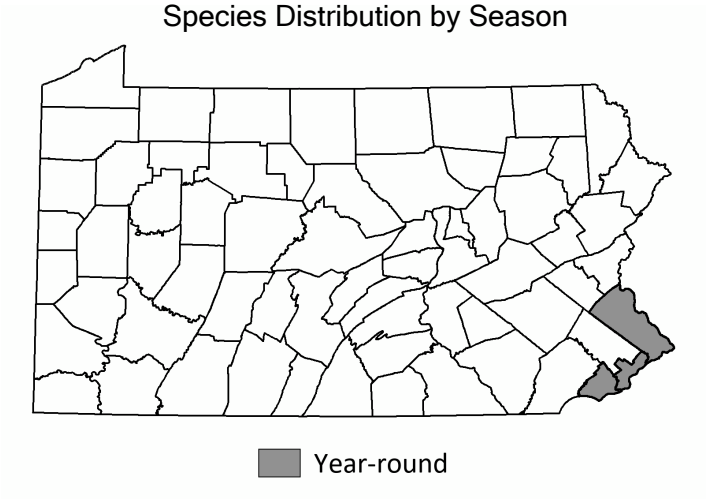
Lithobates sphenocephalus utricularius

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



J. Bunnell



Conservation Profile

PA 10-Year Conservation Goal: Protect and maintain known Coastal Plain and/or Mid-Atlantic Coast Leopard Frog populations. Plan for reintroduction at suitable sites within the range.

NatureServe Global Rank: G5TNR

IUCN Red List Designation: Not Evaluated

IUCN Red List Trend:

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Low

SGCN Season: Year-round

State Rank (Season): S1

State Rank Year: 2025

PA Legal Designation: Endangered

PA Abundance: 250 - 1,000 individuals

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: Very High

Season: Year-round

Specific Habitat Requirements: Marshes, ponds, wet meadows, and edges of slow-moving rivers and streams; brackish waters near coastal areas.

Primary Habitat: Palustrine

Primary Habitat Type: Non-Tidal Wetlands

Primary Specific Habitat: North Atlantic Coastal Plain Basin Swamp and Wet Hardwood Forest

Season: Year-round

Threat Category: Commercial and Industrial Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Conduct environmental review to avoid and protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid or minimize all development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Coastal Plains Leopard Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations:

Other species likely to benefit from this action: Eastern spadefoot, Eastern Cricket Frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Conduct environmental review to avoid and protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize all development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Coastal Plains Leopard Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations:

Other species likely to benefit from this action: Eastern spadefoot, mid-Atlantic Coast leopard frog, Eastern Cricket Frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Industrial and Military Effluents **Threat Impact:** High - Low

Specific Threat: Negative impacts to water quality cause direct declines.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize all development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Coastal Plains Leopard Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations:

Other species likely to benefit from this action: Eastern spadefoot, Eastern Cricket Frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Conduct environmental review to identify potential impacts from roads and utilities in occupied habitat for this species.

Objective: Avoid development of new roads in habitat.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Coastal Plains Leopard Frog habitat

Potential Collaborators: Businesses, Other state agency, Pennsylvania Department of Environmental Protection

Locations:

Other species likely to benefit from this action: Eastern spadefoot, mid-Atlantic Coast leopard frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Request developers install amphibian tunnels and associated barriers when roads are reconstructed.

Objective: To prevent road mortality and fragmentation via reactive planning

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of crossings initiated

Potential Collaborators: Local agencies & municipalities, Other state agency

Locations:

Other species likely to benefit from this action: Eastern spadefoot, Eastern Cricket frog, Spotted Turtle, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Utility and Service Lines **Threat Impact:** High - Low

Specific Threat: Utility line maintenance causes mortality from pesticides and heavy equipment use.

Action Category: Conserve via zoning or informal designations

Specific Action: Conduct environmental review to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize all development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Coastal Plains Leopard Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations:

Other species likely to benefit from this action: Eastern spadefoot, Eastern Cricket Frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Dams and Water Management/Use **Threat Impact:** High

Specific Threat: Water management in occupied impoundments can cause winter mortality or alter available habitats.

Action Category: Conservation planning

Specific Action: Develop management plans with state and local partners to properly manage habitat in priority areas.

Objective: Develop management plans at all publicly owned Coastal Plains Leopard Frog properties in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of management plans finalized

Potential Collaborators: Local agencies & municipalities, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission

Locations:

Other species likely to benefit from this action: Northern Red-bellied Cooter; wetland amphibians

Season: Year-round

Threat Category: Other Ecosystem Modifications **Threat Impact:** High - Low

Specific Threat: Succession of habitats from open canopy meadows or wetlands to closed canopy can remove habitat.

Action Category: Conservation planning

Specific Action: Develop management plans in cooperation with state and local partners to properly manage habitat in priority areas.

Objective: Develop management plans at all publicly owned Coastal Plains Leopard Frog properties in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of management plans finalized, acres of land under targeted management

Potential Collaborators: Local agencies & municipalities, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission

Locations:

Other species likely to benefit from this action: Northern Red-bellied Cooter; wetland amphibians

Season: Year-round

Threat Category: Recreational Activities **Threat Impact:** High - Low

Specific Threat: Recreational use may degrade habitats, especially from all-terrain vehicle (ATV) use in seasonal pools.

Action Category: Conservation planning

Specific Action: Development management plans with state and local partners to reduce recreational use of sensitive habitats for this species.

Objective: Develop management plans at all publicly owned Coastal Plains Leopard Frog properties in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission

Locations:

Other species likely to benefit from this action: Northern Red-bellied Cooter; wetland amphibians

Season: Year-round

Threat Category: Recreational Activities **Threat Impact:** High - Low

Specific Threat: Recreational use may degrade habitats, especially from all-terrain vehicle (ATV) use in seasonal pools.

Action Category: Reintroduce or relocate individuals

Specific Action: Reintroduce this species at suitable sites.

Objective: Prioritize 2 potential sites for reintroduction.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of sites with population management

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities

Locations:

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve specific land or seascapes

Specific Action: Work with willing landowners to develop voluntary conservation practice options benefitting this species.

Objective: Develop conservation package options and share with up to 2 landowners in 10 years.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of landowner contacts

Potential Collaborators: Conservancies & Land Trusts, Private Landowners

Locations:

Other species likely to benefit from this action: aquatic wildlife

Season: Year-round

Threat Category: Storms and Flooding **Threat Impact:** Very High

Specific Threat: Increased flooding can degrade habitat quality or wipe out individuals.

Action Category: Reintroduce or relocate individuals

Specific Action: Reintroduce this species at suitable sites.

Objective: Identify and prioritize one potential site for reintroduction.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of sites with population management

Potential Collaborators: Conservancies & Land Trusts

Locations:

Other species likely to benefit from this action:

Season: Year-round

Priority	Need	Partners
1	Evaluate effectiveness of reintroduction and augmentation initiatives.	

Season: Year-round

Priority	Survey	Partners
1	Continue species occurrence surveys to confirm sites and search for additional records.	

Name: No Current Monitoring Programs **Lead(s) :**

Link:

Description:

AmphibiaWeb. 2015. Information on amphibian biology and conservation. AmphibiaWeb. Berkeley, California. Full list of references available from http://amphibiaweb.org (accessed July 2015).

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Atlantic Coast Leopard Frog

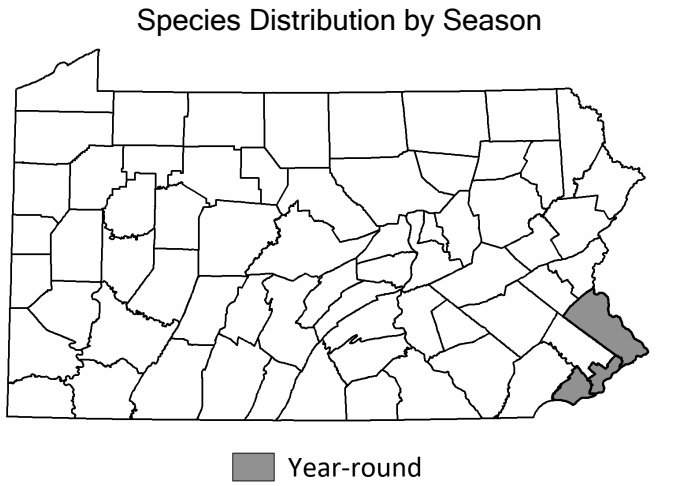
Lithobates kauffeldi

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



B. Ruhe, Mid-Atlantic Center for Herpetology and Conservation



Conservation Profile

PA 10-Year Conservation Goal: Protect and maintain known Coastal Plain and/or Mid-Atlantic Coast Leopard Frog populations. Plan for reintroduction at suitable sites within the range.

NatureServe Global Rank: G3G4

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: High Concern

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Low

SGCN Season: Year-round

State Rank (Season): S1

State Rank Year: 2025

PA Legal Designation: Endangered

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: Very High - High

Season: Year-round

Specific Habitat Requirements: Marshes, ponds, wet meadows, and edges of slow-moving rivers and streams; brackish waters near coastal areas.

Primary Habitat: Palustrine

Primary Habitat Type: Non-Tidal Wetlands

Primary Specific Habitat: North Atlantic Coastal Plain Basin Swamp and Wet Hardwood Forest

Season: Year-round

Threat Category: Commercial and Industrial Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize all development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Atlantic Coast Leopard Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Eastern spadefoot, Eastern Cricket Frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize all development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Atlantic Coast Leopard Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Eastern spadefoot, Eastern Cricket Frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Industrial and Military Effluents **Threat Impact:** High - Low

Specific Threat: Negative impacts to water quality cause direct declines.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize all development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Atlantic Coast Leopard Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Eastern spadefoot, Eastern Cricket Frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Mining and Quarrying **Threat Impact:** High - Low

Specific Threat: Mining can alter wetland hydrology, water quality, and remove and fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize all development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Atlantic Coast Leopard Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Eastern spadefoot, Eastern Cricket Frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Renewable Energy **Threat Impact:** High - Low

Specific Threat: Solar production can alter shading, wetland hydrology, water quality, and remove and fragment habitats.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize all development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Atlantic Coast Leopard Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Eastern spadefoot, Eastern Cricket Frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Conduct environmental review to identify impacts from roads and utilities in occupied or suitable habitats for this species.

Objective: Avoid development of new roads in habitat for this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Atlantic Coast Leopard Frog habitat

Potential Collaborators: Businesses, Other state agency, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Eastern spadefoot, mid-Atlantic Coast leopard frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Request developers install amphibian tunnels and associated barriers when roads are reconstructed.

Objective: Prevent road mortality and fragmentation via reactive planning.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of crossings initiated

Potential Collaborators: Local agencies & municipalities, Other state agency

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Eastern spadefoot, Eastern Cricket frog, Spotted Turtle, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Utility and Service Lines **Threat Impact:** High - Low

Specific Threat: Utility line maintenance causes mortality from pesticides and heavy equipment use.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize all development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Atlantic Coast Leopard Frog habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Eastern spadefoot, Eastern Cricket Frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Dams and Water Management/Use **Threat Impact:** High

Specific Threat: Water management in occupied impoundments can cause winter mortality or alter available habitats.

Action Category: Conservation planning

Specific Action: Develop management plans in cooperation with state and local partners to properly manage habitat in priority areas.

Objective: Develop management plans at all publicly owned Atlantic Coast Leopard Frog properties in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of management plans finalized

Potential Collaborators: Local agencies & municipalities, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Northern Red-bellied Cooter; wetland amphibians

Season: Year-round

Threat Category: Other Ecosystem Modifications **Threat Impact:** High - Low

Specific Threat: Succession of habitats from open canopy meadows or wetlands to closed canopy can remove habitat.

Action Category: Conservation planning

Specific Action: Develop management plans in cooperation with state and local partners to properly manage habitat in priority areas.

Objective: Develop management plans at all publicly owned Atlantic Coast Leopard Frog properties in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of management plans finalized

Potential Collaborators: Local agencies & municipalities, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Northern Red-bellied Cooter; wetland amphibians

Season: Year-round

Threat Category: Recreational Activities **Threat Impact:** High - Low

Specific Threat: Recreational use may degrade habitats, especially from all-terrain vehicle (ATV) use in seasonal pools.

Action Category: Conservation planning

Specific Action: Develop management plans with state and local partners to reduce recreational use of sensitive habitats for this species.

Objective: Develop management plans at all publicly owned Mid-Atlantic Coast Leopard frog properties in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of management plans finalized

Potential Collaborators: Local agencies & municipalities, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Northern Red-bellied Cooter; wetland amphibians

Season: Year-round

Threat Category: Recreational Activities **Threat Impact:** High - Low

Specific Threat: Recreational use may degrade habitats, especially from all-terrain vehicle (ATV) use in seasonal pools.

Action Category: Reintroduce or relocate individuals

Specific Action: Reintroduce this species at suitable sites.

Objective: Prioritize 2 potential sites for reintroduction.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of sites with population management

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Complementary or alternative conservation measures

Specific Action: Work with willing landowners to develop voluntary conservation practices benefitting this species.

Objective: Develop conservation package options and share with up to 2 landowners in 10 years.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of landowner contacts

Potential Collaborators: Conservancies & Land Trusts, Private Landowners

Locations:

Other species likely to benefit from this action: aquatic wildlife

No known research needs.

Season: Year-round

Priority	Survey	Partners
1	Continue species occurrence surveys to confirm sites and search for additional records.	

No known monitoring programs.

AmphibiaWeb. 2015. Information on amphibian biology and conservation. AmphibiaWeb. Berkeley, California. Full list of references available from http://amphibiaweb.org (accessed July 2015).

Feinberg JA, Newman CE, Watkins-Colwell GJ, Schlesinger MD, Zarate B, et al. (2014) Cryptic Diversity in Metropolis: Confirmation of a New Leopard Frog Species (Anura: Ranidae) from New York City and Surrounding Atlantic Coast Regions. PLoS ONE 9(10): e108213. doi:10.1371/journal.pone.0108213

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Schlesinger MD, Feinberg JA, Nazdrowicz NH, Kleopfer JD, Beane JC, Bunnell JF, et al. (2018) Follow-up ecological studies for cryptic species discoveries: Decrypting the leopard frogs of the eastern U.S.. PLoS ONE 13(11): e0205805. https:// doi.org/10.1371/journal.pone.0205805

PENNSYLVANIA
WILDLIFE ACTION PLAN

Spotted Turtle

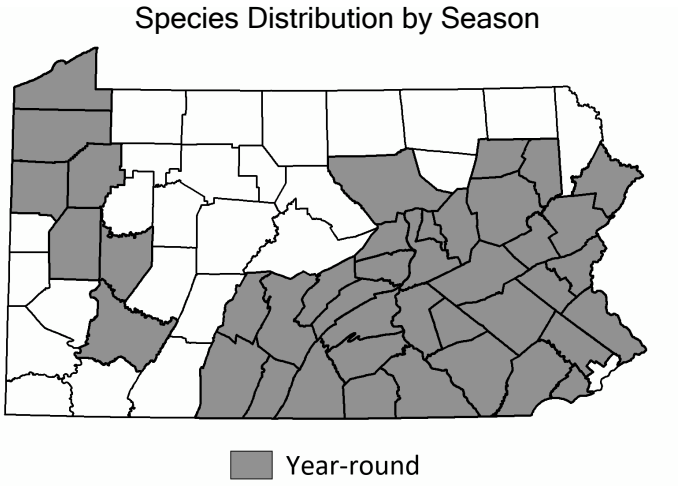
Clemmys guttata

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



C. Eichelberger, Western Pennsylvania Conservancy



Conservation Profile

PA 10-Year Conservation Goal: To conserve self-sustaining populations throughout the extent of the current occupied range by implementing the 2022 Conservation Plan (Willey et al. 2022).

NatureServe Global Rank: G5

IUCN Red List Designation: Endangered

IUCN Red List Trend: Decreasing

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: High Concern

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: Very High - Medium

Season: Year-round

Specific Habitat Requirements: Soft-bottomed aquatic habitats, including small streams, marshes, swamps, and vernal pools with upland forests or open habitats.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: South-Central Interior Mesophytic Forest

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** Low

Specific Threat: Poaching

Action Category: Detection and intervention

Specific Action: Instruct all new officers and update experienced officers in anti-poaching techniques.

Objective: Train and support law enforcement annually in anti-poaching efforts.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of officers trained

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, U.S. Fish and Wildlife Service

Locations: Statewide

Other species likely to benefit from this action: All native amphibians and reptiles

Season: Year-round

Threat Category: Commercial and Industrial Areas **Threat Impact:** Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve specific land or seascapes

Specific Action: Protect existing populations through voluntary land preservation on both private and public properties.

Objective: Develop conservation package options and share with up to 10 landowners in 10 years.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Private Landowners, U.S. Department of Agriculture-Natural Resources Conservation Service

Locations: Statewide

Other species likely to benefit from this action: seasonal pool amphibians and reptiles

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve specific land or seascapes

Specific Action: Protect existing populations through voluntary land preservation on both private and public properties.

Objective: Develop conservation package options and share with up to 10 landowners in 10 years.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Private Landowners, U.S. Department of Agriculture-Natural Resources Conservation Service

Locations: Statewide

Other species likely to benefit from this action: seasonal pool amphibians and reptiles

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Outreach, communication and distribution

Specific Action: Promote vernal pool conservation strategies.

Objective: Increase implementation of vernal pool best management practices (BMPs) on public and private lands.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners, U.S. Department of Agriculture-Natural Resources Conservation Service

Locations: Statewide

Other species likely to benefit from this action: vernal pool amphibians and reptiles

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** Low

Specific Threat: Poaching

Action Category: Manage plants, animals, fungi, or bacteria

Specific Action: Implement habitat management to promote population growth and sustainability at priority sites.

Objective: Conduct habitat management and restoration at 2 priority state-owned sites.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Acres managed

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Plan and implement a wildlife passage project to benefit this species and others.

Objective: Identify at least one reptile road crossing site and plan implementation.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of road crossing projects identified

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, Other state agency, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: marbled salamander, blue-spotted salamander, northern leopard frog, eastern spadefoot

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Outreach, communication and distribution

Specific Action: Promote vernal pool conservation strategies.

Objective: Increase implementation of vernal pool best management practices (BMPs) on public and private lands.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations: Statewide

Other species likely to benefit from this action: vernal pool amphibians and reptiles

Season: Year-round

Priority	Need	Partners
1	Assess the effectiveness of habitat and population management.	
2	Examine the effects of habitat loss and fragmentation on population viability and dispersal, particularly in relation to metapopulation dynamics.	
3	Investigate the resilience of populations to hydrologic changes, especially drought.	

Season: Year-round

Priority	Survey	Partners
1	Continue long-term inventory and monitoring efforts using standard protocols.	
2	Conduct targeted surveys across their range to improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.	

Name: Regional Spotted Turtle Assessment Protocol **Lead(s) :** PFBC

Link: N/A

Description: Standardized monitoring techniques developed with the Spotted Turtle Conservation Plan (Willey et al. 2022)

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Willey, L.L., M.K. Parren, and M.T. Jones (eds.). 2022. Status Assessment and Conservation Plan for Spotted Turtles in the Eastern United States. Technical Report to the Virginia Dept. of Wildlife Resources and the U.S. Fish and Wildlife Service.

PENNSYLVANIA
WILDLIFE ACTION PLAN

Wood Turtle

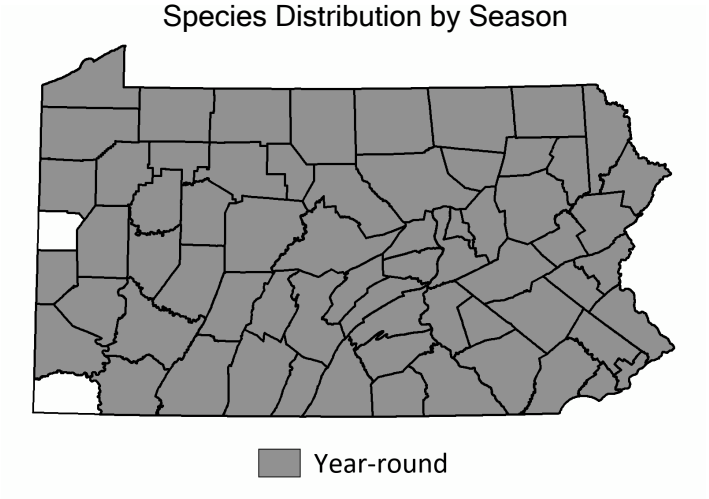
Glyptemys insculpta

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



K. Gipe, Western Pennsylvania Conservancy



Conservation Profile

PA 10-Year Conservation Goal: To facilitate the persistence of functional, demographically stable, ecologically viable, and representative populations throughout the extent of the current occupied range by implementing the 2018 Conservation Plan (Jones et al. 2018).

NatureServe Global Rank: G2G3

IUCN Red List Designation: Endangered

IUCN Red List Trend: Decreasing

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: High Concern

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3S4

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: Very High - High

Season: Year-round

Specific Habitat Requirements: Large streams and associated riparian and forested habitats (edge habitats) with thick cover, sunlight, and food availability. Nesting habitat is open-canopy riparian thickets, well-drained soils with sparse vegetation.

Primary Habitat: Riverine

Primary Habitat Type: Rivers and Streams

Primary Specific Habitat: Moderate Gradient, Cool, Small River

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** Low

Specific Threat: Poaching

Action Category: Detection and intervention

Specific Action: Instruct all new officers and update experienced officers in anti-poaching techniques.

Objective: Train and support law enforcement annually in anti-poaching efforts.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of officers trained

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, U.S. Fish and Wildlife Service

Locations: Statewide

Other species likely to benefit from this action: All native amphibians and reptiles

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve specific land or seascapes

Specific Action: Protect existing populations through voluntary land preservation on both private and public properties.

Objective: Develop conservation package options to share with up to 10 landowners in 10 years.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Private Landowners, U.S. Department of Agriculture-Natural Resources Conservation Service

Locations: Statewide

Other species likely to benefit from this action: Spotted Turtle

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** Low

Specific Threat: Poaching

Action Category: Manage non-living habitat components

Specific Action: Implement management of nesting areas at priority sites to promote population growth and sustainability.

Objective: Conduct nesting habitat management and predator control at 2 priority state-owned sites.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Acres managed

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Medium

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Plan and implement a wildlife passage project to benefit this species and others.

Objective: Identify at least one reptile road crossing site and plan implementation.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of road crossing projects identified

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, Other state agency, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: Eastern Box Turtle, Spotted Turtle, numerous others

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Medium

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Outreach, communication and distribution

Specific Action: Promote nest habitat creation and management on public lands to reduce road crossings by nesting females.

Objective: Increase habitat management guideline implementation on public lands to reduce road crossings by nesting females.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action:

Season: Year-round

Priority	Need	Partners
1	Examine nesting ecology and nesting habitats of G. insculpta in Pennsylvania, including identification of critical nesting habitats in need of protection or management.	
2	Before and after studies of individual and population-level response to large-scale stream restoration projects.	
3	Assess relationships between G. insculpta population dynamics and specific agricultural and forest management practices.	

Season: Year-round

Priority	Survey	Partners
1	Continue species occurrence surveys to confirm sites and search for additional records.	
2	Continue long-term monitoring of established sites.	

Name: Northeast Population Assessment Protocol **Lead(s) :** MassWildlife

Link: https://www.northeastturtles.org/uploads/3/0/4/3/30433006/woodturtle_populationassessment_2021.pdf

Description: A regional collaboration to assess Wood Turtle populations in the Northeastern United States has been underway since 2012, resulting in a Conservation Plan (2018) for the northeastern states. This partnership hash been funded primarily through a Competitive State Wildlife Grant and three Regional Conservation Needs (RCN) awards. This document outlines the recommended guidelines for Wood Turtle population assessments in the Northeastern United States in 2021–2023, funded again through the Competitive State Wildlife Grant (SWG) program. This document outlines the recommended methodology for: 1.) selecting and delineating sites; 2.) conducting surveys; 3.) processing turtles; and 4.) recording and submitting data. By converging on a common set of methods and constraints, the results from throughout the region may be pooled for analysis, allowing greater insight into regional trends.

Jones, M. T., L. I. Willey, P. R. Sievert, and T. S. Akre. 2013. Status and Conservation of the Wood Turtle in the Northeastern United States. Unpublished report to the Northeast Regional Conservation Needs Program.

Jones, M.T., H.P. Roberts, and L.L. Willey. 2018. Conservation Plan for the Wood Turtle in the Northeastern United States. Report to the Massachusetts Division of Fisheries & Wildlife and the U.S. Fish & Wildlife Service. 259 pp.

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Bog Turtle

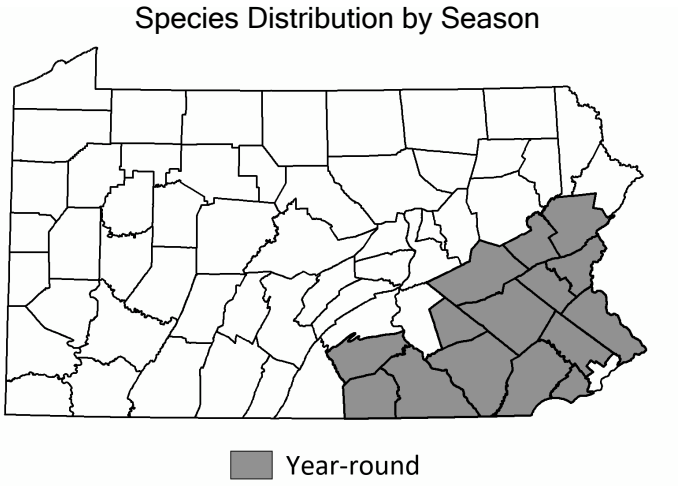
Glyptemys muhlenbergii

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



B. Ruhe, Mid-Atlantic Center for Herpetology and Conservation



Conservation Profile

PA 10-Year Conservation Goal: Implement habitat protection and restoration measures as per Species Action Plan and Conservation Plan. Continue to acquire and/or secure easements for occupied bog turtle habitat. Continue to manage succession and invasive plant species in occupied bog turtle habitat. Complete historic site surveys, continue gap area surveys. Continue population monitoring.

NatureServe Global Rank: G2G3

IUCN Red List Designation: Critically Endangered

IUCN Red List Trend: Unknown

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: Very High Concern

Federal Listing Status: Threatened

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S2

State Rank Year: 2025

PA Legal Designation: Endangered

PA Abundance: Unknown

PA Short-term Trend (10-year): Decline of 10-30%

Cumulative Threat Impact: Very High

Season: Year-round

Specific Habitat Requirements: Sunny, emergent, early-successional wetlands with dense tussock sedge and other tussock-forming vegetation, soft mud and shallow water.

Primary Habitat: Palustrine

Primary Habitat Type: Non-Tidal Wetlands

Primary Specific Habitat: North-Central Interior Wet Meadow-Shrub Swamp

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Bog Turtle habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont, Piedmont, Ridge and Valley, New England

Other species likely to benefit from this action: wetland wildlife

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** High - Low

Specific Threat: Poaching

Action Category: Detection and intervention

Specific Action: Instruct all new officers and update experienced officers in anti-poaching techniques.

Objective: Train and support law enforcement annually in anti-poaching efforts.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of officers trained

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, U.S. Fish and Wildlife Service

Locations: Statewide

Other species likely to benefit from this action: All native amphibians and reptiles

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Conduct environmental review screening to avoid impacts from roads and utilities in occupied or suitable habitats for this species.

Objective: Avoid development of new roads in Bog Turtle habitat corridors.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that protect Bog Turtle habitat corridors

Potential Collaborators: Businesses, Other state agency, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Ridge and Valley, Piedmont, New England

Other species likely to benefit from this action: Spotted Turtle; wetland wildlife

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Request developers install wildlife passage tunnels and associated barriers when roads are reconstructed.

Objective: Prevent road mortality and fragmentation via reactive planning.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of crossings initiated

Potential Collaborators: Local agencies & municipalities, Other state agency

Locations: Physiographic Province: Piedmont, Ridge and Valley, New England

Other species likely to benefit from this action: Spotted turtle; wetland wildlife

Season: Year-round

Threat Category: Droughts **Threat Impact:** High - Low

Specific Threat: Increased drought and desiccation of wetlands leads to long term loss of habitat.

Action Category: Manage non-living habitat components

Specific Action: Mitigate drought impacts by managing sites threatened by altered hydrology.

Objective: Design and implement restoration of hydrology at priority sites.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of acres restored

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, U.S. Fish and Wildlife Service

Locations: Physiographic Province: Ridge and Valley, Piedmont, New England

Other species likely to benefit from this action: wetland wildlife

Season: Year-round

Threat Category: Invasive Non-native/Alien Species/Diseases **Threat Impact:** High - Medium

Specific Threat: Various invasive plants (e.g., Reed Canary Grass and Phragmites) will eliminate nesting habitats.

Action Category: Manage plants, animals, fungi, or bacteria

Specific Action: Conduct habitat management at priority sites to remove invasive plants.

Objective: Conduct habitat management and restoration at two priority sites per year.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Acres managed

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations: Physiographic Province: Ridge and Valley, Piedmont, New England

Other species likely to benefit from this action: Spotted turtle

Season: Year-round

Threat Category: Other Ecosystem Modifications **Threat Impact:** Very High

Specific Threat: Succession of habitats from open canopy meadows or wetlands to closed canopy can remove habitat.

Action Category: Manage plants, animals, fungi, or bacteria

Specific Action: Conduct habitat management at priority sites to restore canopy openings.

Objective: Conduct habitat management and restoration at two priority sites per year.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Acres managed

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations: Physiographic Province: Ridge and Valley, Piedmont, New England

Other species likely to benefit from this action: Spotted Turtle

Season: Year-round

Threat Category: Storms and Flooding **Threat Impact:** High - Low

Specific Threat: Increased flooding can degrade habitat quality or wipe out individuals.

Action Category: Conserve specific land or seascapes

Specific Action: Encourage willing landowners to proactively protect occupied habitats and corridors.

Objective: Develop conservation package options and share with up to 10 landowners in 10 years.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of landowner contacts

Potential Collaborators: Conservancies & Land Trusts, Private Landowners, U.S. Department of Agriculture-Natural Resources Conservation Service

Locations: Physiographic Province: Ridge and Valley, Piedmont, New England

Other species likely to benefit from this action: wetland wildlife

Season: Year-round

Threat Category: Droughts **Threat Impact:** High - Low

Specific Threat: Increased drought and desiccation of wetlands leads to long term loss of habitat.

Action Category: Conserve specific land or seascapes

Specific Action: Encourage willing landowners to proactively protect occupied habitats and corridors.

Objective: Develop conservation package options and share with up to 10 landowners in 10 years.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of landowner contacts

Potential Collaborators: Conservancies & Land Trusts, Private Landowners, U.S. Department of Agriculture-Natural Resources Conservation Service

Locations: Physiographic Province: Ridge and Valley, Piedmont, New England

Other species likely to benefit from this action: wetland wildlife

Season: Year-round

Priority	Need	Partners
1	Restore hydrology at bog turtle sites and monitor post-restoration changes to determine success or failure of project.	Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, U.S. Fish and Wildlife Service
2	Evaluate response of Bog Turtles to habitat restoration actions.	

Season: Year-round

Priority	Survey	Partners
1	Complete assessment of historic sites, continue to survey and assess gap areas in range of bog turtle.	
2	Perform pre- and post-habitat monitoring surveys at restored or managed sites, particularly at sites where NRCS is funding work.	

Name: Multistate Recovery Actions for the Bog Turtle and Associated Headwater Wetland Species of Greatest Conservation Need

Lead(s) : Pennsylvania Fish and Boat Commission

Link: N/A

Description: Implement competitve state wildlife grant to protect and maintain the northern population of bog turtle and its habitat through planning and implementation of conservation actions that will lead to the recovery of the species.

Name: Northeast Regional Population and Habitat Monitoring for the Bog Turtle

Lead(s) : MACHAC

Link: N/A

Description: Continue implementation of a previously developed standardized regional monitoring protocol (NFWF grant project), formalizing and expanding on intensive population and habitat sampling efforts.

Erb, L. 2019. Bog turtle conservation plan for the Northern population. A report to the Pennsylvania Division of Fisheries & Wildlife and the U.S. Fish and Wildlife Service. 102 pp.

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PFBC (Pennsylvania Fish and Boat Commission) 2023. Species Action Plan: Bog Turtle (Glyptemys muhlenbergii).

U.S. Fish and Wildlife Service. 2022. Interim Species Status Assessment/Biological Report for the northern population of the bog turtle (Glyptemys muhlenbergii). New York Field Office, U.S. Fish and Wildlife Service, Cortland, New York. 92 pp + Appendices.

USFWS (U.S. Fish and Wildlife Service). 2001. Bog turtle (Clemmys muhlenbergii), northern population, recovery plan. Hadley, Massachusetts.

USFWS (U.S. Fish and Wildlife Service). 2008. Bog turtle (Clemmys {= Glyptemys} muhlenbergii), northern population, 5 -year review summary and evaluation. Draft. State College, Pennsylvania.

USFWS (U.S. Fish and Wildlife Service). 2009. Bog turtle (Clemmys {= Glyptemys} muhlenbergii), spotlight species action plan. State College, Pennsylvania.

USFWS (U.S. Fish and Wildlife Service). 2022. 5-Year Review. Bog Turtle [Northern Population] (Glyptemys muhlenbergii)

PENNSYLVANIA
WILDLIFE ACTION PLAN

Blanding's Turtle

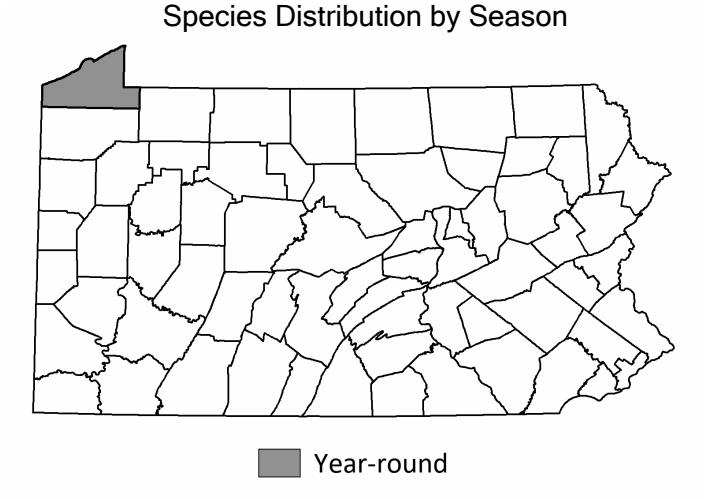
Emydoidea blandingii

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



B. Ruhe, Mid-Atlantic Center for Herpetology and Conservation



Conservation Profile

PA 10-Year Conservation Goal: Implement the 2014 Conservation Plan (revised 2021) by establishing a self-sustaining population of Blanding's turtles in Pennsylvania.

NatureServe Global Rank: G4

IUCN Red List Designation: Endangered

IUCN Red List Trend: Decreasing

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: Very High Concern

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S1

State Rank Year: 2025

PA Legal Designation: Candidate

PA Abundance: 1 - 50 individuals

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: Very High - Medium

Season: Year-round

Specific Habitat Requirements: Mosaics of small marshes, wet meadows, small ponds, and slow moving streams.

Primary Habitat: Land-Water Interface

Primary Habitat Type: Beaches & Dunes

Primary Specific Habitat: Great Lakes Wooded Dune and Swale

Season: Year-round

Threat Category: Commercial and Industrial Areas **Threat Impact:** High

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Blanding's Turtle habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Central Lowlands, Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Marine and Freshwater Aquaculture **Threat Impact:** High

Specific Threat: Sedimentation and chemical runoff can degrade water quality and habitats.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Blanding's Turtle habitat

Potential Collaborators:

Locations:

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Dams and Water Management/Use **Threat Impact:** High

Specific Threat: Water management in occupied impoundments can cause winter mortality or alter available habitats.

Action Category: Manage non-living habitat components

Specific Action: Implement Northeast Regional Blanding's Turtle Conservation Plan at the known site.

Objective: Support Pennsylvania Department of Conservation and Natural Resources habitat protection and hydrological regime management to conserve this species' habitat.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of technical assists

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources

Locations: Physiographic Section: Eastern Lake, Northwestern Glaciated Plateau

Other species likely to benefit from this action: Spotted Turtle

Season: Year-round

Threat Category: Invasive Non-native/Alien Species/Diseases **Threat Impact:** High - Medium

Specific Threat: Various invasive plants (e.g., Reed Canary Grass and Phragmites) will eliminate nesting habitats.

Action Category: Manage plants, animals, fungi, or bacteria

Specific Action: Implement Northeast Regional Blanding's Turtle Conservation Plan at the known site.

Objective: Support Pennsylvania Department of Conservation and Natural Resources invasive plant and predator control to conserve this species' habitat.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Acres managed

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources

Locations: Physiographic Section: Eastern Lake, Northwestern Glaciated Plateau

Other species likely to benefit from this action: Spotted Turtle

Season: Year-round

Threat Category: Other Ecosystem Modifications **Threat Impact:** High

Specific Threat: Succession of habitats from open canopy meadows or wetlands to closed canopy can remove habitat.

Action Category: Manage plants, animals, fungi, or bacteria

Specific Action: Implement Northeast Regional Blanding's Turtle Conservation Plan at the known site.

Objective: Support Pennsylvania Department of Conservation and Natural Resources invasive plant and predator control to conserve this species' habitat.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Acres managed

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources

Locations: Physiographic Section: Eastern Lake, Northwestern Glaciated Plateau

Other species likely to benefit from this action: nesting turtles

Season: Year-round

Threat Category: Tourism and Recreational Areas **Threat Impact:** Very High

Specific Threat: High recreational use of occupied areas disturb habitat used by this species and can lead to higher levels of subsidized predators.

Action Category: Reintroduce or relocate individuals

Specific Action: Implement Northeast Regional Blanding's Turtle Conservation Plan at the known site.

Objective: Establish a self-sustaining population in Pennsylvania by augmenting the population with headstart juveniles.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Population estimate

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, U.S. Fish and Wildlife Service

Locations: Physiographic Section: Eastern Lake, Northwestern Glaciated Plateau

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** Very High

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Request developers use wildlife passage tunnels and associated barriers when roads are reconstructed.

Objective: Prevent road mortality and fragmentation via reactive planning.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of crossings initiated

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources

Locations: Physiographic Section: Eastern Lake, Northwestern Glaciated Plateau

Other species likely to benefit from this action: wetland wildlife

Season: Year-round

Priority	Need	Partners
1	Radiotrack all adult Blanding's turtles encountered and focus tracking efforts during the nesting season to locate nesting areas and determine reproductive status.	
2	Evaluate feasibility and appropriateness of reintroduction to other sites in the Lake Erie basin .	

Season: Year-round

Priority	Survey	Partners
1	Continue distributional survey efforts: Inventory resources should be spent examining habitats within the range to establish the present distribution of the Blanding's turtle in Pennsylvania.	
2	Continue monitoring the site for roadkill of Blanding’s and other turtle species to evaluate road-crossing hotspots, and identify areas to place road crossing signs.	

Name: Conservation of Blanding's Turtle and associated wetland SGCN in the Northeas.

Lead(s) : New Hampshire Fish and Game Department

Link: N/A

Description: To maintain and enhance functional wildlife habitat in New England, New York, and Pennsylvania by applying conservation principles and practices needed to support a healthy Blanding's turtle population.In the short-term, project partners will cooperate to develop a spatially-explicit conservation plan for Blanding's turtles and associated SGCN in the Northeast Region of the United States, initiate standardized monitoring of the species' status, and initiate implementation of the Plan by managing habitat to reduce road mortality and engaging key partners to prioritize land acquisition, restoration, and management activities.In the long-term, conservation partners will apply information developed through this grant to maintain viable populations of Blanding's turtle and associated SGCN.

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Willey, L.L. and M.T. Jones. 2014. Conservation Plan for the Blanding's Turtle and Associated Species of Conservation Need in the Northeastern United States.

PENNSYLVANIA
WILDLIFE ACTION PLAN

Northern Red-bellied Cooter

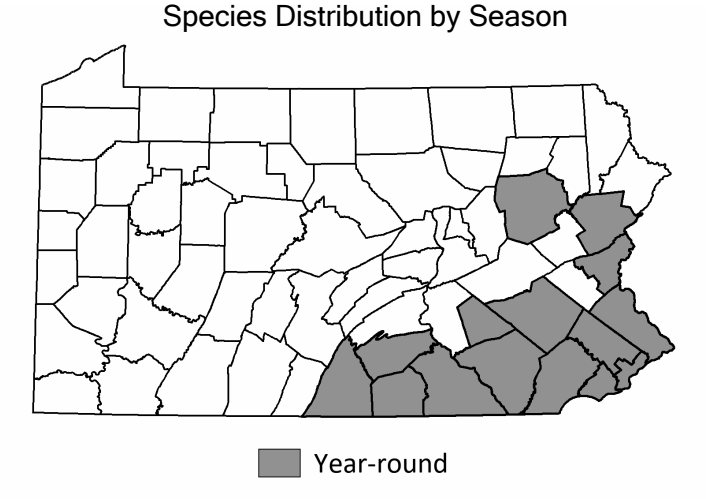
Pseudemys rubriventris

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



M. Corn



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will lead to delisting of the species.

NatureServe Global Rank: G5

IUCN Red List Designation: Near Threatened

IUCN Red List Trend: Unknown

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3

State Rank Year: 2025

PA Legal Designation: Threatened

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: Very High - Medium

Season: Year-round

Specific Habitat Requirements: Deeper areas of moderate gradient rivers, reservoirs, ponds, and marshes.

Primary Habitat: Lacustrine

Primary Habitat Type: Lakes & Ponds

Primary Specific Habitat: Unknown

Season: Year-round

Threat Category: Commercial and Industrial Areas **Threat Impact:** Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect turtle habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: HUC6 Watershed: Lower Delaware, U. Delaware, Lower Susquehanna, Potomac

Other species likely to benefit from this action: aquatic species

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** Low

Specific Threat: Poaching

Action Category: Detection and intervention

Specific Action: Instruct all new officers and update experienced officers in anti-poaching techniques.

Objective: Train and support law enforcement annually in anti-poaching efforts.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of officers trained

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, U.S. Fish and Wildlife Service

Locations: Statewide

Other species likely to benefit from this action: All native amphibians and reptiles

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to avoid placement of new road or utility alignments in turtle habitat corridors.

Objective: Avoid development of new roads in turtle habitat corridors.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect turtle habitat corridors

Potential Collaborators: Businesses, Other state agency, Pennsylvania Department of Environmental Protection

Locations: HUC6 Watershed: Lower Delaware, U. Delaware, Lower Susquehanna, Potomac

Other species likely to benefit from this action: other turtle species

Season: Year-round

Threat Category: Dams and Water Management/Use **Threat Impact:** Low

Specific Threat: Water management in occupied impoundments can cause winter mortality or alter available habitats.

Action Category: Conservation planning

Specific Action: Coordinate with state and local partners to properly manage habitat and reduce public access to sensitive areas.

Objective: Propose management plans at 50% of publicly owned Northern Red-bellied Cooter habitats in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: HUC6 Watershed: Potomac, Lower Susquehanna, Lower Delaware, U. Susquehanna

Other species likely to benefit from this action: aquatic wildlife

Season: Year-round

Threat Category: Invasive Non-native/Alien Species/Diseases **Threat Impact:** High - Low

Specific Threat: Various invasive plants (e.g., Reed Canary Grass and Phragmites) will eliminate nesting habitats.

Action Category: Conservation planning

Specific Action: Coordinate with state and local partners to properly manage habitat and reduce public access to sensitive areas.

Objective: Propose management plans at 50% of publicly owned Northern Red-bellied Cooter habitats in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: HUC6 Watershed: U. Delaware, Lower Delaware, Lower Susquehanna, Potomac

Other species likely to benefit from this action: nesting turtles

Season: Year-round

Threat Category: Problematic Native Species/Diseases **Threat Impact:** High - Low

Specific Threat: Subsidized meso-predators are responsible for major nest depredations.

Action Category: Conservation planning

Specific Action: Coordinate with state and local partners to properly manage habitat and reduce predator levels.

Objective: Propose management plans at 50% of publicly owned Northern Red-bellied Cooter habitats in the next 10 years.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: HUC6 Watershed: Potomac, Lower Susquehanna, Lower Delaware, U. Delaware

Other species likely to benefit from this action: Nesting turtles

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Request developers install wildlife passage tunnels and associated barriers when roads are reconstructed.

Objective: Prevent road mortality and fragmentation via reactive planning.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of crossings initiated

Potential Collaborators: Local agencies & municipalities, Other state agency

Locations: HUC6 Watershed: Potomac, Lower Susquehanna, Lower Delaware, U. Delaware

Other species likely to benefit from this action: wetland wildlife

Season: Year-round

Priority	Need	Partners
1	Conduct habitat use and movement study of riverine Red-bellied Cooters.	
2	Conduct a mark-recapture study of several established sites across the range in Pennsylvania would assist in identifying the density, age-class distribution, and reproductive success of the redbelly in Pennsylvania.	
3	Nesting success: anecdotal evidence indicates high levels of nest predation on Redbelly Turtle nests. A survey of two or more sites should be done to gather more information about preferred habitats for nesting, identify predators, determine average dates of emergence.	

Season: Year-round

Priority	Survey	Partners
1	Conduct population assessments at select publicly-owned properties to assist with status assessment and development of management plans.	
2	Continue distributional survey efforts. Inventory resources should be spent following-up on reported sightings and examining habitats within the range to establish the present distribution in Pennsylvania.	
3	Identify preferred nesting areas at select publicly owned habitats to assist with development of management plans.	

Name: Periodic monitoring of basking structure use by redbelly turtles.

Lead(s) : Pennsylvania Fish and Boat Commission

Link: N/A

Description: The PFBC Habitat Lake Section monitors the structures and their use in lakes across the range where structures have been placed by PFBC.

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PFBC (Pennsylvania Fish and Boat Commission) 2023. Species Action Plan: Northern Red-bellied Cooter (Pseudemys rubriventris)

PENNSYLVANIA
WILDLIFE ACTION PLAN

Woodland Box Turtle

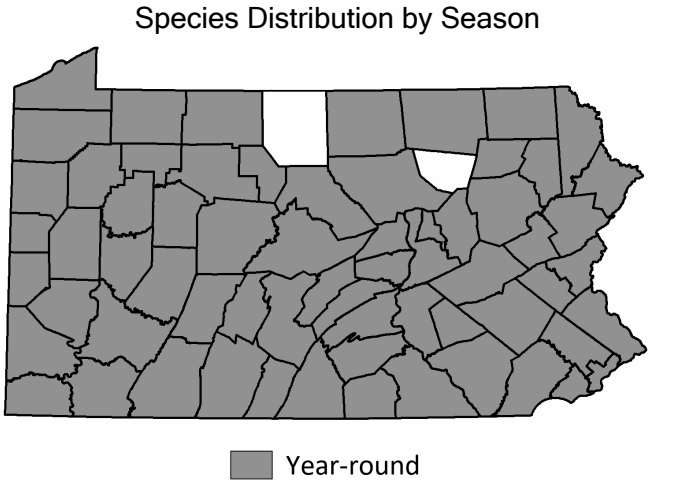
Terrapene carolina carolina

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: To support the persistence and adaptive capacity of the eastern box turtle in the northeastern United States by implementing the 2023 Conservation Plan (Roberts and Erb, 2023).

NatureServe Global Rank: G5T5

IUCN Red List Designation: Vulnerable

IUCN Red List Trend: Decreasing

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: Moderate Concern

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3S4

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: High - Low

Season: Year-round

Specific Habitat Requirements: Deciduous forests, old fields, ecotonal areas, and marshy areas.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: South-Central Interior Mesophytic Forest

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** Low

Specific Threat: Poaching

Action Category: Detection and intervention

Specific Action: Instruct all new officers and update experienced officers in anti-poaching techniques.

Objective: Train and support law enforcement annually in anti-poaching efforts.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of officers trained

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, U.S. Fish and Wildlife Service

Locations: Statewide

Other species likely to benefit from this action: All native amphibians and reptiles

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Plan and implement a wildlife passage project to benefit this species and others.

Objective: Identify at least 1 reptile road crossing site and plan implementation.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of road crossing projects identified

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, Other state agency, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: Wood Turtle, Spotted Turtle, numerous others

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Outreach, communication and distribution

Specific Action: Promote nest habitat creation and management on public lands to reduce road crossings by nesting females.

Objective: Increase habitat management guideline implementation on public lands to reduce turtle road crossings.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action:

Season: Year-round

Priority	Need	Partners
1	Understand response to prescribed fire and wildfire.	
2	Determine disease risk and success of repatriation efforts in response to illegal collection.	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: Eastern Box Turtle Population Assessment Protocol

Lead(s) : Northeast Eastern Box Turtle Working Group

Link:
https://www.northeastturtles.org/uploads/3/0/4/3/30433006/eastern_box_turtle_population_assessment_protocol_revisions_2021.03.01.pdf

Description: This document outlines the 2019 Eastern Box Turtle (Terrapene carolina carolina) Population Monitoring Protocol developed by the Northeast Eastern Box Turtle Working Group. This standardized sampling protocol is intended to provide a framework for assessing Eastern Box Turtle populations throughout the northeastern United States. The basic elements of the protocol include Rapid Assessments (RA) and Demographic Assessments (DA).

Erb, L.A. and H.P. Roberts. 2023. Status assessment for the eastern box turtle in the northeastern United States. Final report to the Northeast Association of Fish and Wildlife Agencies (NEAFWA) for a Regional Conservation Needs (RCN) award.

Kiester, A. R. and L. L. Willey. 2015. Terrapene carolina (Linnaeus 1758)-eastern box turtle, common box turtle. In A. G. J. Rhodin, P. C. H. Pritchard, P. P. van Dijk, R. A. Saumure, K. A. Buhlmann, J. B. Iverson, and R. A. Mittermeier, editors. Conservation Biology of Freshwater Turtles and Tortoises. Chelonian Research Monographs 5.

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

Roberts, H.P., and L.A. Erb. 2023. Conservation plan for the eastern box turtle in the northeastern United States. Final report to the Northeast Association of Fish and Wildlife Agencies (NEAFWA) for a Regional Conservation Needs (RCN) award.

PENNSYLVANIA
WILDLIFE ACTION PLAN

Eastern Mud Turtle

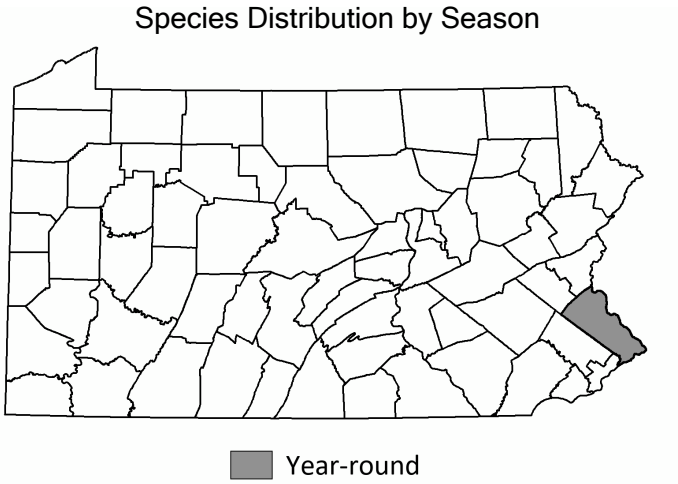
Kinosternon subrubrum subrubrum

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



J. White, Virginia Herpetological Society



Conservation Profile

PA 10-Year Conservation Goal: Protect, augment (where needed), and maintain known populations; add one self-sustaining population within 10 years.

NatureServe Global Rank: G5T5

IUCN Red List Designation: Not Evaluated

IUCN Red List Trend:

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S1

State Rank Year: 2025

PA Legal Designation: Endangered

PA Abundance: 1 - 50 individuals

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: Very High

Season: Year-round

Specific Habitat Requirements: Atlantic Coastal Plain wetlands with intact uplands.

Primary Habitat: Palustrine

Primary Habitat Type: Non-Tidal Wetlands

Primary Specific Habitat: North Atlantic Coastal Plain Basin Swamp and Wet Hardwood Forest

Season: Year-round

Threat Category: Commercial and Industrial Areas **Threat Impact:** High

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Mud Turtle habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Atlantic Coastal Plain

Other species likely to benefit from this action: Eastern spadefoot, southern leopard frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Mud Turtle habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Atlantic Coastal Plain

Other species likely to benefit from this action: Eastern spadefoot, southern leopard frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to prevent impacts from roads and utilities to occupied habitats for this species.

Objective: Avoid development of new roads in Mud Turtle habitat.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Mud Turtle habitat

Potential Collaborators: Businesses, Local agencies & municipalities, Other state agency, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Atlantic Coastal Plain

Other species likely to benefit from this action: Eastern spadefoot, mid-Atlantic Coast leopard frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Request developers use wildlife passage tunnels and associated barriers when roads are reconstructed.

Objective: To prevent road mortality and fragmentation via reactive planning.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of crossings initiated

Potential Collaborators: Local agencies & municipalities, Other state agency

Locations: Physiographic Province: Atlantic Coastal Plain

Other species likely to benefit from this action: Eastern spadefoot, mid-Atlantic Coast leopard frog, Spotted Turtle, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Utility and Service Lines **Threat Impact:** High - Low

Specific Threat: Utility line maintenance causes mortality from pesticides and heavy equipment use.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Mud Turtle habitat

Potential Collaborators: Businesses, Local agencies & municipalities, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Atlantic Coastal Plain

Other species likely to benefit from this action: Eastern spadefoot, southern leopard frog, Northern red-bellied cooter, wetland wildlife

Season: Year-round

Threat Category: Utility and Service Lines **Threat Impact:** High - Low

Specific Threat: Utility line maintenance causes mortality from pesticides and heavy equipment use.

Action Category: Conservation planning

Specific Action: Develop and implement management plans for occupied sites.

Objective: Develop two habitat management plans over the next 10 years.

Action Priority: 1-Highest **Action Urgency:** Initiate within 5 years **Measure:** Number of plans written

Potential Collaborators: Local agencies & municipalities, Private Landowners

Locations: Physiographic Province: Atlantic Coastal Plain

Other species likely to benefit from this action: Eastern Spadefoot, Mid-Atlantic Coast Leopard Frog, Cricket Frog, New Jersey Chorus Frog, Northern Red-bellied Cooter

Season: Year-round

Threat Category: Droughts **Threat Impact:** High

Specific Threat: Increased drought and desiccation of wetlands leads to direct mortality.

Action Category: Reintroduce or relocate individuals

Specific Action: Reintroduce this species or augment populations at potentially suitable sites.

Objective: Identify and prioritize two potential sites for reintroduction or augmentation.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of sites with reintroduction or population augmentation

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, U.S. Fish and Wildlife Service

Locations:

Other species likely to benefit from this action:

Season: Year-round

Priority	Need	Partners
1	Develop a reintroduction and augmentation protocol for the Eastern Mud Turtle.	
2	Evaluate effectiveness of reintroduction and augmentation initiatives.	
3	Assess effectiveness of nest site protection.	

Season: Year-round

Priority	Survey	Partners
1	Develop and implement population monitoring protocol for extant sites.	
2	Trap and transfer turtles from adjacent states (e.g., NJ, DE, MD).	

Name: No Current Monitoring Programs

Lead(s) :

Link: N/A

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PFBC (Pennsylvania Fish and Boat Commission) 2023. Species Action Plan: Southeastern Mud Turtle (Kinosternon subrubrum subrubrum)

PFBC (Pennsylvania Fish and Boat Commission). 2011. Amphibian and Reptile Status Change Documentation Form: Eastern Mud Turtle. Harrisburg, Pennsylvania.

Ruhe, B. M., and T. C. LaDuke. 2011. Status Assessment and Range Determination of the Eastern Mud Turtle (Kinosternon subrubrum subrubrum) in Pennsylvania. Pennsylvania Fish and Boat Commission Report.

PENNSYLVANIA
WILDLIFE ACTION PLAN

Northern Coal Skink

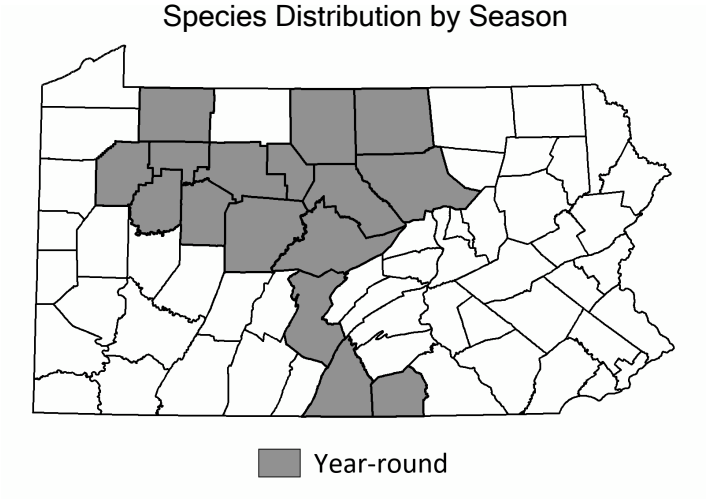
Plestiodon anthracinus anthracinus

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



J. Carey



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.

NatureServe Global Rank: G5T5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Data Deficient

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: High - Low

Season: Year-round

Specific Habitat Requirements: Open habitat (less than 50 percent canopy cover by trees) where rocks and logs provide abundant cover.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Appalachian (Hemlock)-Northern Hardwood Forest

Season: Year-round

Threat Category: Annual and Perennial Non-timber Crops **Threat Impact:** High - Low

Specific Threat: Sedimentation and chemical runoff can degrade water quality and habitats.

Action Category: Outreach, communication and distribution

Specific Action: Promote best management practices (BMPs) to minimize and avoid logging impacts to habitats.

Objective: Increase use of best management practices (BMPs) where logging occurs through outreach to one landowner per year.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations: Physiographic Province: Ridge and Valley, Appalachian Plateaus

Other species likely to benefit from this action: vernal pool amphibians and reptiles

Season: Year-round

Threat Category: Logging and Wood Harvesting **Threat Impact:** High - Low

Specific Threat: Logging may destroy required upland forested habitat.

Action Category: Manage non-living habitat components

Specific Action: Promote best management practices (BMPs) to minimize and avoid logging impacts to habitats.

Objective: Increase use of best management practices (BMPs) where logging occurs through outreach to one landowner per year.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5-10 years **Measure:** Number of technical assists

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission, Private Landowners

Locations: Physiographic Province: Ridge and Valley, Appalachian Plateaus

Other species likely to benefit from this action: vernal pool amphibians and reptiles

Season: Year-round

Threat Category: Other Ecosystem Modifications **Threat Impact:** High - Low

Specific Threat: Succession of habitats from open canopy meadows or wetlands to closed canopy can remove habitat.

Action Category: Manage plants, animals, fungi, or bacteria

Specific Action: Implement habitat management to reduce vegetative succession and open forested canopy at priority sites.

Objective: Manage canopy cover at one priority site per year.

Action Priority: 4-Low **Action Urgency:** Initiate within 5-10 years **Measure:** Acres managed

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Physiographic Province: Ridge and Valley, Appalachian Plateaus

Other species likely to benefit from this action: Timber Rattlesnake

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs

Lead(s) :

Link: N/A

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Broadhead Skink

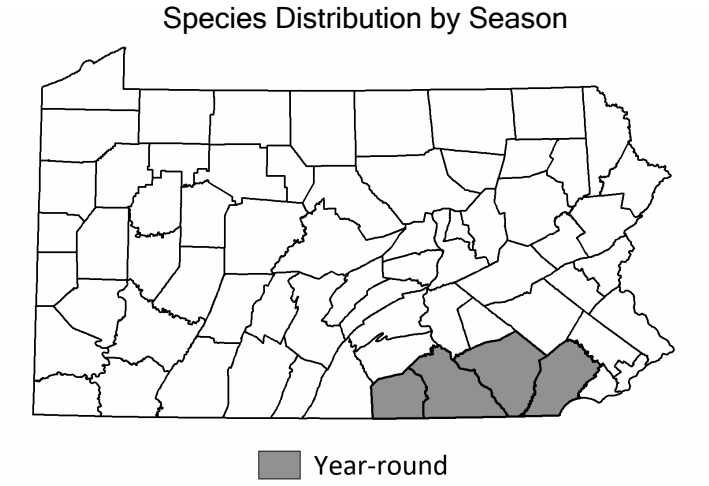
Plestiodon laticeps

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and habitat parameters in order to establish conservation and management actions that will prevent further declines as well as allow for restoration of populations.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S2

State Rank Year: 2025

PA Legal Designation: Candidate

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: High - Low

Season: Year-round

Specific Habitat Requirements: Deciduous forests with an abundance of dead standing timber, large stumps, and hollow logs.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Central Appalachian Pine-Oak Rocky Woodland

Season: Year-round

Threat Category: Renewable Energy **Threat Impact:** Low

Specific Threat: Solar production can alter shading, wetland hydrology, water quality, and remove and fragment habitats.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitat and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Broad-headed Skink habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Tourism and Recreational Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitat and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to this species.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Broad-headed Skink habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Utility and Service Lines **Threat Impact:** Low

Specific Threat: Utility line maintenance causes mortality from pesticides and heavy equipment use.

Action Category: Conserve via zoning or informal designations

Specific Action: Work with utility companies to guide best management practices (BMPs) for habitats in rights-of-way (ROW) supporting this species.

Objective: Use technical assistance to enhance habitats in rights-of-way managed by utility companies.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of technical assists

Potential Collaborators: Businesses

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action:

Season: Year-round

Priority	Need	Partners
1	Radio telemetry and surveys to determine habitat use and home range.	
2	What best management practices (BMPs) can be implemented by developers to optimize benefits and avoid adverse impacts to this species?	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs **Lead(s) :**

Link: N/A

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Eastern Worm Snake

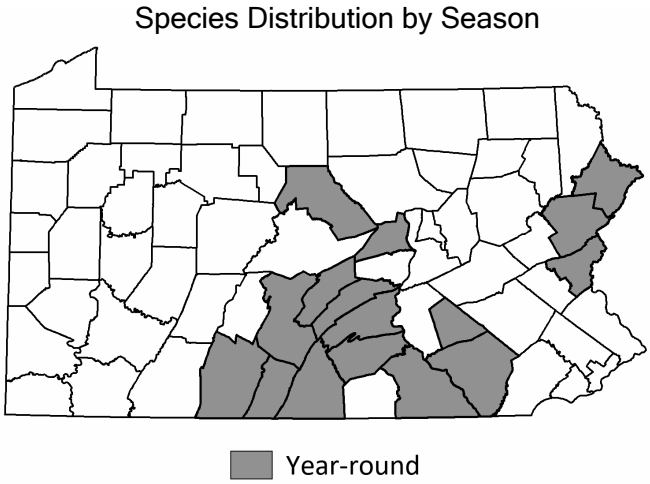
Carphophis amoenus amoenus

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will maintain populations and determine status.

NatureServe Global Rank: G5T5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S2S3

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: Very High - Medium

Season: Year-round

Specific Habitat Requirements: Moist forests and early successional habitats with soft or sandy soils suitable for burrowing (Hulse et al. 2001).

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: South-Central Interior Mesophytic Forest

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** High - Low

Specific Threat: Poaching

Action Category: Detection and intervention

Specific Action: Instruct all new officers and update experienced officers in anti-poaching techniques.

Objective: Train and support law enforcement annually in anti-poaching efforts.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of officers trained

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, U.S. Fish and Wildlife Service

Locations: Statewide

Other species likely to benefit from this action: All native amphibians and reptiles

Season: Year-round

Threat Category: Other Ecosystem Modifications **Threat Impact:** High - Low

Specific Threat: Succession of habitats from open canopy meadows or wetlands to closed canopy can remove habitat.

Action Category: Outreach, communication and distribution

Specific Action: Provide resources to public land managers to manage sites to promote the habitat for this species.

Objective: Increase, over the next ten years, Wildlife Action Map use by land managers to manage projects in areas with sensitive reptiles and amphibians.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Wildlife Action Map reports

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: amphibians and reptiles

Season: Year-round

Threat Category: Recreational Activities **Threat Impact:** High - Low

Specific Threat: Recreational use may degrade habitats, especially from all-terrain vehicle (ATV) use.

Action Category: Outreach, communication and distribution

Specific Action: Provide resources to public land managers to encourage management that will benefit the habitat for this species.

Objective: Increase, over the next ten years, Wildlife Action Map use by land managers to manage projects in areas with sensitive reptiles and amphibians.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Wildlife Action Map reports

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: amphibians and reptiles

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Plan and implement a wildlife passage project to benefit this species and others.

Objective: Identify at least one amphibian and reptile road crossing site and plan implementation.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of road crossing projects identified

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, Other state agency, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: reptiles and amphibians

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs **Lead(s) :**

Link:

Description:

Hulse, A. C., C. J. McCoy, and E. J. Censky. 2001. Amphibians and Reptiles of Pennsylvania and the Northeast. Cornell University, Ithaca, New York.

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Kirtland's Snake

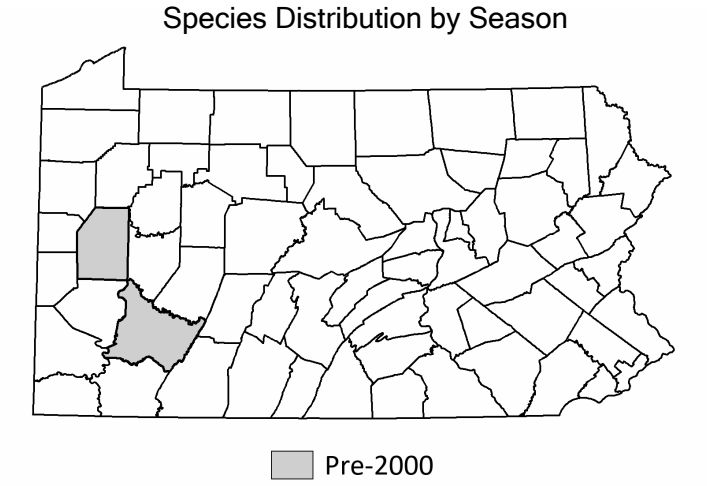
Clonophis kirtlandii

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



T. Diez



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish species status in the state.

NatureServe Global Rank: G2

IUCN Red List Designation: Near Threatened

IUCN Red List Trend: Decreasing

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Low

SGCN Season: Year-round

State Rank (Season): SH

State Rank Year: 2025

PA Legal Designation: Endangered

PA Abundance: Unknown

PA Short-term Trend (10-year):

Cumulative Threat Impact: Unknown

Season: Year-round

Specific Habitat Requirements: Damp vacant lots with debris for cover; open, damp woods/grassy areas in urban/suburban areas; prairie wetlands, wet meadows, grassy edges of creeks, streams, and ponds and relatively open, wet woods (often in urban/suburban settings) with crayfish burrow.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: South-Central Interior Mesophytic Forest

Season: Year-round

Threat Category: Unknown/undetermined **Threat Impact:** Unknown

Specific Threat: Need a better understanding of the distribution and status of this species to determine threats.

Action Category: Basic research and status monitoring

Specific Action: Conduct targeted surveys across this species' historic range to understand population status and threats.

Objective: Conduct targeted surveys within historic range.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of blocks surveyed (PARS)

Potential Collaborators:

Locations:

Other species likely to benefit from this action: amphibians and reptiles

Season: Year-round

Priority	Need	Partners
1	In the event that a population is discovered in Pennsylvania, a radio telemetry study should immediately occur to focus on habitat delineation and use and a population estimate.	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	
2	Conduct thorough presence and inferred absence surveys of historical sites using survey protocol soon developed by USFWS.	

Name: No Current Monitoring Programs **Lead(s) :**

Link:

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Eastern Hog-nosed Snake

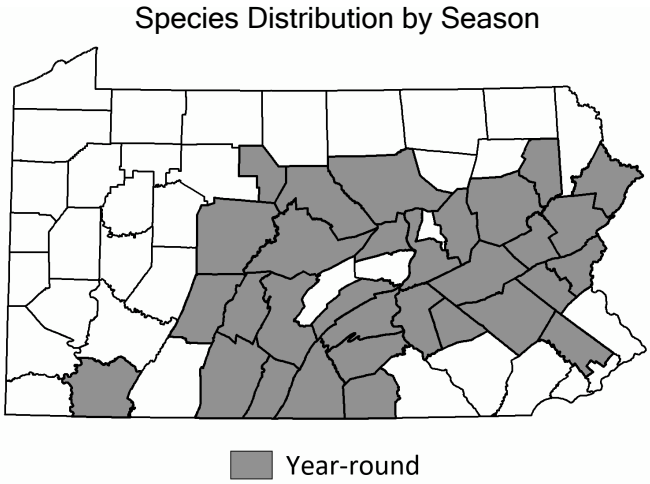
Heterodon platirhinos

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



J. Uplinger



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Data Deficient

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Unknown

Cumulative Threat Impact: High - Medium

Season: Year-round

Specific Habitat Requirements: Sandy clearings in forests and grasslands. Often associated with sandy floodplains along waterways.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Central Appalachian Dry Oak-Pine Forest

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** Low

Specific Threat: Poaching

Action Category: Detection and intervention

Specific Action: Instruct all new officers and update experienced officers in anti-poaching techniques.

Objective: Train and support law enforcement annually in anti-poaching efforts.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of trainings

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, U.S. Fish and Wildlife Service

Locations: Statewide

Other species likely to benefit from this action: All native amphibians and reptiles

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Outreach, communication and distribution

Specific Action: Conduct outreach to improve attitudes towards snakes.

Objective: Produce education products for distribution on social media, periodicals, and more.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of outreach materials produced

Potential Collaborators: Pennsylvania Fish and Boat Commission

Locations: Statewide

Other species likely to benefit from this action: reptiles and amphibians

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Plan and implement a wildlife passage project to benefit this species and others.

Objective: Identify at least 1 reptile road crossing site and plan implementation.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of road crossing projects identified.

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, Other state agency, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: multiple amphibians and reptiles

Season: Year-round

Priority	Need	Partners
1	Radio telemetry study focused on seasonal habitat use.	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs

Lead(s) :

Link: N/A

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Northern Rough Greensnake

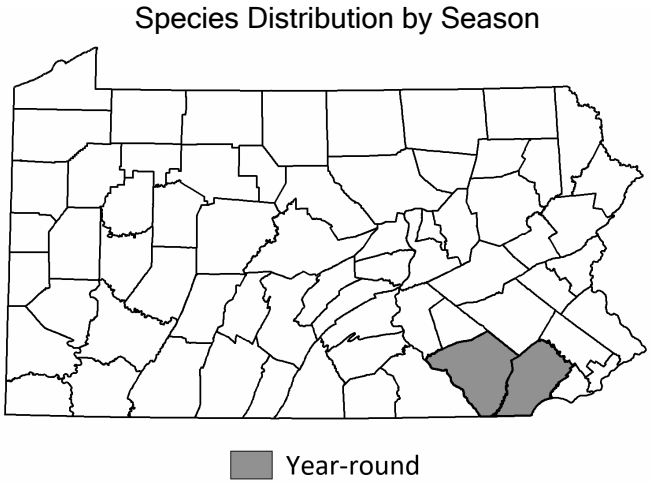
Opheodrys aestivus

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



J. Uplinger



Conservation Profile

PA 10-Year Conservation Goal: Protect and maintain known Rough Greensnake populations.

NatureServe Global Rank: G5TNR

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S1

State Rank Year: 2025

PA Legal Designation: Endangered

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: Very High - High

Season: Year-round

Specific Habitat Requirements: Thickets, edges, and lake shores where trees or woody shrubs (1-3 m in height) dominate the vegetation.

Primary Habitat: Open Upland

Primary Habitat Type: Glades, Barrens & Savannas

Primary Specific Habitat: Serpentine Barren / Woodland

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitats and incorporate habitat management into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Rough Greensnake habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Tourism and Recreational Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Rough Greensnake habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Fire and Fire Suppression

Threat Impact: Very High - High

Specific Threat: Management for rare plant ecosystems can be in conflict with habitat.

Action Category: Conservation planning

Specific Action: Develop management plans with state and local partners to properly manage habitat at occupied sites.

Objective: Develop management plans at each of the publicly owned properties.

Action Priority: 2-High

Action Urgency: Initiate immediately

Measure: Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Smooth Earthsnake, Eastern Box Turtle

Season: Year-round

Threat Category: Roads and Railroads

Threat Impact: High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Plan and implement a wildlife passage project to benefit this species and others.

Objective: Identify at least one reptile road crossing site and plan implementation.

Action Priority: 3-Medium

Action Urgency: Initiate immediately

Measure: Number of road crossing projects identified

Potential Collaborators: Local agencies & municipalities, Other state agency, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Game Commission

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: reptiles and amphibians

Season: Year-round

Priority	Need	Partners
1	Develop a long-term population monitoring protocol for the managed sites.	

Season: Year-round

Priority	Survey	Partners
2	Continued survey for the species within the known range in Pennsylvania.	

No known monitoring programs.

Hulse, A. C., C. J. McCoy, and E. J. Censky. 2001. Amphibians and Reptiles of Pennsylvania and the Northeast. Cornell University, Ithaca, New York.

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Queen Snake

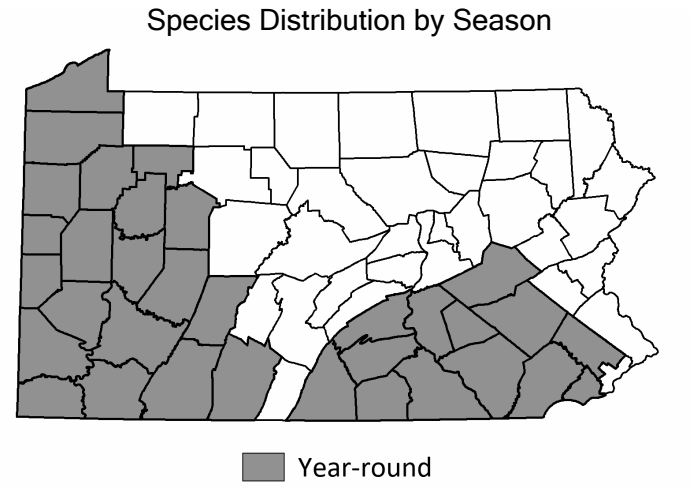
Regina septemvittata

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



J. Uplinger



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3S4

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: High - Medium

Season: Year-round

Specific Habitat Requirements: Variable habitat requirements including small, shallow streams, rivers, lakes, and marshes (Conant 1960; Ernst and Ernst 2003; Gibbons and Dorcas 2004). Primary food is crayfish.

Primary Habitat: Land-Water Interface

Primary Habitat Type: Riparian & Floodplains

Primary Specific Habitat: Unknown

Season: Year-round

Threat Category: Invasive Non-native/Alien Species/Diseases **Threat Impact:** Low

Specific Threat: Various invasive plants (e.g., Japanese Knotweed and Phragmites) will eliminate habitats.

Action Category: Outreach, communication and distribution

Specific Action: Promote the management of invasive plant species in Queensnake habitats by partners.

Objective: Remove invasive plants in riparian areas occupied by Queensnakes.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of technical assists

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: riparian species

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs

Lead(s) :

Link: N/A

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Eastern Smooth Earthsnake

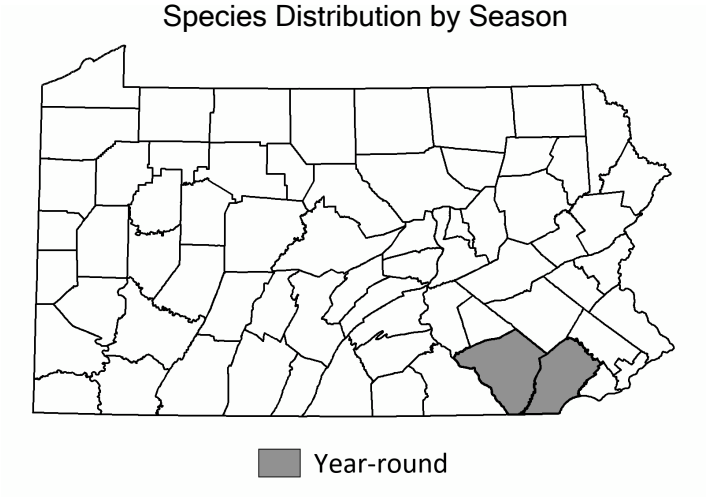
Virginia valeriae valeriae

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



B. Ruhe, Mid-Atlantic Center for Herpetology and Conservation



Conservation Profile

PA 10-Year Conservation Goal: Protect occupied sites and encourage habitat management and maintenance of woodlands mosaics.

NatureServe Global Rank: G5T5

IUCN Red List Designation: Not Evaluated

IUCN Red List Trend:

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S1

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Increase of >25%

Cumulative Threat Impact: Very High

Season: Year-round

Specific Habitat Requirements: Deciduous forests and adjacent open areas.

Primary Habitat: Open Upland

Primary Habitat Type: Glades, Barrens & Savannas

Primary Specific Habitat: Serpentine Barren / Woodland

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** Very High

Specific Threat: Poaching

Action Category: Detection and intervention

Specific Action: Instruct all new officers and update experienced officers in anti-poaching techniques.

Objective: Train and support law enforcement annually in anti-poaching efforts.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of officers trained

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, U.S. Fish and Wildlife Service

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: All native amphibians and reptiles

Season: Year-round

Threat Category: Fire and Fire Suppression **Threat Impact:** Very High

Specific Threat: Management for rare plant ecosystems can be in conflict with habitat.

Action Category: Conservation planning

Specific Action: Coordinate with state and local partners to properly manage habitat and promote the species.

Objective: Develop management plans at each of the publicly owned properties.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Northern Rough Greensnake, Eastern Box Turtle

Season: Year-round

Threat Category: Invasive Non-native/Alien Species/Diseases **Threat Impact:** Very High

Specific Threat: Various invasive plants (e.g., Reed Canary Grass and Phragmites) will eliminate nesting habitats.

Action Category: Conservation planning

Specific Action: Coordinate with state and local partners to properly manage habitat and promote the species.

Objective: Develop management plans at each of the publicly owned properties.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Northern Rough Greensnake, Eastern Box Turtle

Season: Year-round

Threat Category: Logging and Wood Harvesting **Threat Impact:** Very High

Specific Threat: Logging may destroy required upland forested habitat and lead to crushing of individuals.

Action Category: Conservation planning

Specific Action: Coordinate with state and local partners to properly manage habitat and promote the species.

Objective: Develop management plans at each of the publicly owned properties.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Northern Rough Greensnake, Eastern Box Turtle

Season: Year-round

Threat Category: Recreational Activities **Threat Impact:** Very High

Specific Threat: Recreational use may degrade habitats, especially from all-terrain vehicle (ATV) use.

Action Category: Conservation planning

Specific Action: Coordinate with state and local partners to properly manage habitat and promote the species.

Objective: Develop management plans at each of the publicly owned properties.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Rough Greensnake, Box Turtle

Season: Year-round

Threat Category: Utility and Service Lines **Threat Impact:** High

Specific Threat: Utility line maintenance causes mortality from pesticides and heavy equipment use.

Action Category: Conservation planning

Specific Action: Coordinate with state and local partners to properly manage habitat and promote the species.

Objective: Develop management plans at each of the publicly owned properties.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of management plans finalized

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: Northern Rough Greensnake, Eastern Box Turtle

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** Very High

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Plan and implement a wildlife passage project to benefit this species and others.

Objective: Identify at least 1 reptile road crossing site and plan implementation.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of road crossing projects identified

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, Other state agency, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Physiographic Province: Piedmont

Other species likely to benefit from this action: multiple amphibians and reptiles

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs

Lead(s) :

Link: N/A

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

PARS (Pennsylvania Amphibian and Reptile Survey). 2025. Website. Available from http://www.paherpsurvey.org (accessed March 2025).

PENNSYLVANIA
WILDLIFE ACTION PLAN

Eastern Copperhead

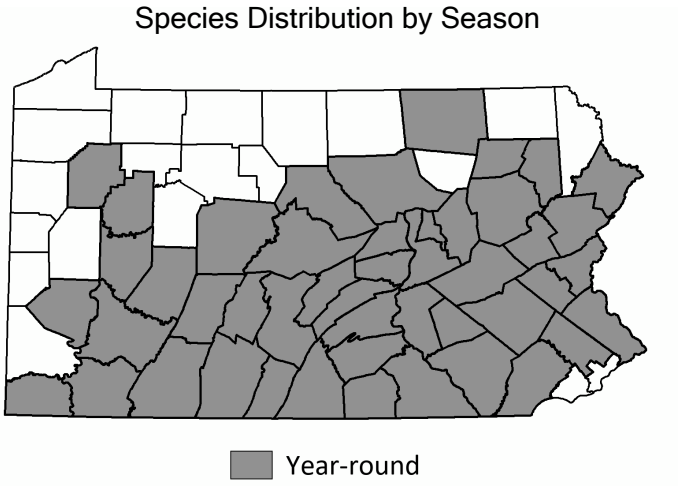
Agkistrodon contortrix

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



J. Uplinger



Conservation Profile

PA 10-Year Conservation Goal: Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.

NatureServe Global Rank: G5

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Stable

Identified Conservation Priority by Established Groups: No

Northeast U.S.RSGCN: Not RSGCN

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3S4

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: High - Low

Season: Year-round

Specific Habitat Requirements: Open, rocky areas in deciduous hardwood forest with low surface vegetation, reduced amounts of shade, and soil temperatures elevated by sunlight.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Central Appalachian Dry Oak-Pine Forest

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Outreach, communication and distribution

Specific Action: Conduct outreach to improve attitudes towards venomous snakes.

Objective: Produce education products for distribution.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of outreach materials produced

Potential Collaborators: Pennsylvania Fish and Boat Commission

Locations: Statewide

Other species likely to benefit from this action: reptiles and amphibians

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Plan and implement a wildlife passage project to benefit this species and others.

Objective: Identify at least 1 reptile road crossing site and plan implementation.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of road crossing projects identified.

Potential Collaborators: Conservancies & Land Trusts, Other state agency, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: multiple amphibians and reptiles

Season: Year-round

Threat Category: Tourism and Recreational Areas **Threat Impact:** High - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Outreach, communication and distribution

Specific Action: Conduct outreach to improve attitudes towards venomous snakes

Objective: Produce education products for distribution on social media, periodicals, and more.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of outreach materials produced

Potential Collaborators: Pennsylvania Fish and Boat Commission

Locations: Statewide

Other species likely to benefit from this action: reptiles and amphibians

Season: Year-round

Priority	Need	Partners
1	None	

Season: Year-round

Priority	Survey	Partners
1	Conduct targeted surveys across their range.	

Name: No Current Monitoring Programs

Lead(s) :

Link: N/A

Description:

McCoy, C. J. 1982. Amphibians and reptiles in Pennsylvania: checklist, bibliography, and atlas of distribution. Carnegie Museum of Natural History Special Publication 6, Pittsburgh, Pennsylvania.

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PENNSYLVANIA
WILDLIFE ACTION PLAN

Timber Rattlesnake

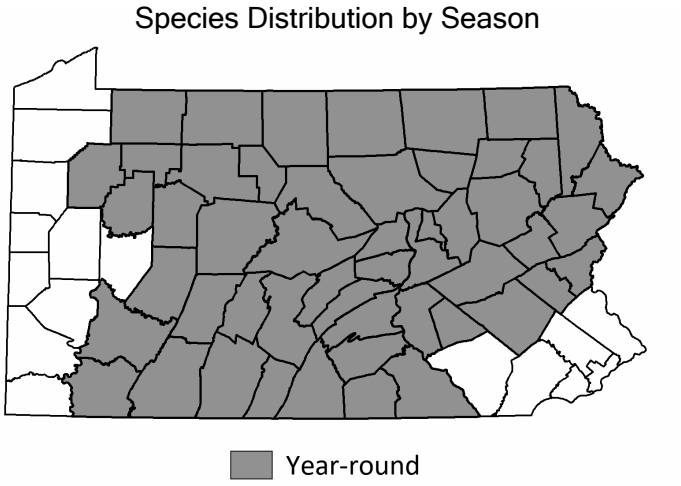
Crotalus horridus

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



A. Shiels, Pennsylvania Fish and Boat Commission



Conservation Profile

PA 10-Year Conservation Goal: Protect and maintain known timber rattlesnake populations; monitor status; recover populations on the periphery of their range.

NatureServe Global Rank: G4

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Decreasing

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: High Concern

Federal Listing Status: Not Listed

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S3S4

State Rank Year: 2025

PA Legal Designation: Not Listed

PA Abundance: Unknown

PA Short-term Trend (10-year): Relatively stable (<=10% change)

Cumulative Threat Impact: Very High - Medium

Season: Year-round

Specific Habitat Requirements: Sandstone and/or limestone rock habitats in unfragmented oak-hickory forest communities.

Primary Habitat: Forested Upland

Primary Habitat Type: Forests & Woodlands

Primary Specific Habitat: Central Appalachian Dry Oak-Pine Forest

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** Medium - Low

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate habitat management into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect Timber Rattlesnake habitat

Potential Collaborators: Businesses, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Appalachian Plateaus, Ridge and Valley

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Hunting and Collecting Terrestrial Animals **Threat Impact:** Medium - Low

Specific Threat: Poaching

Action Category: Detection and intervention

Specific Action: Instruct all new officers and update experienced officers in anti-poaching techniques.

Objective: Train and support law enforcement annually in anti-poaching efforts.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of officers trained

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, U.S. Fish and Wildlife Service

Locations: Statewide

Other species likely to benefit from this action: All native amphibians and reptiles

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species habitats and incorporate habitat management into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect habitat

Potential Collaborators: Other state agency, Pennsylvania Department of Environmental Protection

Locations: Physiographic Province: Ridge and Valley, Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Other Ecosystem Modifications **Threat Impact:** High - Low

Specific Threat: Succession of habitats from open canopy meadows or wetlands to closed canopy can remove habitat.

Action Category: Manage plants, animals, fungi, or bacteria

Specific Action: Implement habitat management to reduce vegetative succession and open forested canopy at priority sites.

Objective: Implement habitat management and restoration at two priority sites per year with state agency partners.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Acres managed

Potential Collaborators: Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Statewide

Other species likely to benefit from this action: Eastern Copperhead

Season: Year-round

Threat Category: Problematic Native Species/Diseases **Threat Impact:** High - Low

Specific Threat: Snake Fungal Disease

Action Category: Outreach, communication and distribution

Specific Action: Conduct outreach to improve attitudes towards snakes and reduce potential disease transmission events.

Objective: Produce education products for distribution at Organized Snake Hunt events.

Action Priority: 3-Medium **Action Urgency:** Initiate immediately **Measure:** Number of events reached

Potential Collaborators: Pennsylvania Fish and Boat Commission

Locations: Statewide

Other species likely to benefit from this action: snakes

Season: Year-round

Priority	Need	Partners
1	Determine effects of fire management on the Timber Rattlesnake.	
2	Assess potential for augmentation on peripheral populations.	

Season: Year-round

Priority	Survey	Partners
1	Identify priority sites in need of habitat management; implement habitat management.	
2	Continue to assess gap areas for new sites (inventory).	

Name: Monitoring of the Timber Rattlesnake in PA (under development). **Lead(s) :** Pennsylvania Fish and Boat Commission, East Stroudsburg University

Link: N/A

Description: Development of a statistically robust long-term monitoring program that incorporates long-term sites, and rapid assessment, and threats analysis.

Name: PA Timber Rattlesnake Site Assessment and Inventory Project **Lead(s) :** Pennsylvania Fish and Boat Commission

Link: N/A

Description: Assessment of over 1000 timber rattlesnake den and gestation areas across PA.A subset of these sites (8) have long-term monitoring (mark-recapture).

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PENNSYLVANIA
WILDLIFE ACTION PLAN

Eastern Massasauga

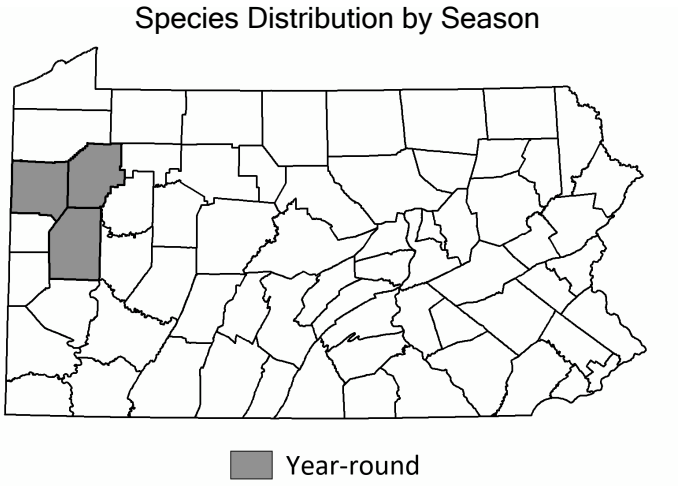
Sistrurus catenatus

Katharine Gipe, Brandon Ruhe, Christopher Urban

PA Fish and Boat Commission, Mid-Atlantic Center for Herpetology and Conservation



J. Uplinger



Conservation Profile

PA 10-Year Conservation Goal: Protect and maintain known eastern massasauga populations; plan for the reintroduction of eastern massasauga at suitable sites within their historically occupied range.

NatureServe Global Rank: G3

IUCN Red List Designation: Least Concern

IUCN Red List Trend: Unknown

Identified Conservation Priority by Established Groups: Yes

Northeast U.S.RSGCN: High Concern

Federal Listing Status: Threatened

Feasiblity of Recovering or Sustaining the PA Population: Medium

SGCN Season: Year-round

State Rank (Season): S1

State Rank Year: 2025

PA Legal Designation: Endangered

PA Abundance: Unknown

PA Short-term Trend (10-year): Decline of 10-30%

Cumulative Threat Impact: Very High - High

Season: Year-round

Specific Habitat Requirements: Wetlands with surrounding old field and prairie habitats with sunny basking sites.

Primary Habitat: Palustrine

Primary Habitat Type: Non-Tidal Wetlands

Primary Specific Habitat: North-Central Appalachian Acidic Swamp

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** Medium

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect habitat

Potential Collaborators: Pennsylvania Department of Environmental Protection, U.S. Fish and Wildlife Service

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Mining and Quarrying **Threat Impact:** Low

Specific Threat: Mining can alter wetland hydrology, water quality, and remove and fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect habitat

Potential Collaborators: Pennsylvania Department of Environmental Protection, U.S. Fish and Wildlife Service

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Oil and Gas Drilling **Threat Impact:** Medium - Low

Specific Threat: Well drilling can alter wetland hydrology, water quality, and remove and fragment habitats, thus isolating populations.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect habitat

Potential Collaborators: Pennsylvania Department of Environmental Protection, U.S. Fish and Wildlife Service

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect this species' habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect habitat

Potential Collaborators: Pennsylvania Department of Environmental Protection, U.S. Fish and Wildlife Service

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Utility and Service Lines **Threat Impact:** High - Low

Specific Threat: Utility line maintenance causes mortality from pesticides and heavy equipment use.

Action Category: Conserve via zoning or informal designations

Specific Action: Consult with developers to protect species' habitats and incorporate best management practices (BMPs) into development plans.

Objective: Avoid and minimize development-related impacts to populations.

Action Priority: 1-Highest **Action Urgency:** Initiate immediately **Measure:** Number of consultations that avoid or protect habitat

Potential Collaborators: Pennsylvania Department of Environmental Protection, U.S. Fish and Wildlife Service

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** Medium

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Conserve specific land or seascapes

Specific Action: Encourage willing landowners to proactively protect occupied habitats and corridors.

Objective: Develop conservation package options and share with up to 10 landowners in 10 years.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Number of landowner contacts

Potential Collaborators: Pennsylvania Fish and Boat Commission, U.S. Department of Agriculture-Natural Resources Conservation Service, U.S. Fish and Wildlife Service

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Invasive Non-native/Alien Species/Diseases **Threat Impact:** High - Medium

Specific Threat: Various invasive plants (e.g., Reed Canary Grass and Phragmites) will eliminate nesting habitats.

Action Category: Manage plants, animals, fungi, or bacteria

Specific Action: Implement habitat management at priority sites to reduce canopy closure from invasive plants.

Objective: Conduct or facilitate habitat management and restoration at 1 priority site per year.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Acres managed

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Other Ecosystem Modifications **Threat Impact:** Very High - Medium

Specific Threat: Succession of habitats from open canopy meadows or wetlands to closed canopy can remove habitat.

Action Category: Manage plants, animals, fungi, or bacteria

Specific Action: Implement habitat management at priority sites to reduce canopy closure and succession.

Objective: Conduct habitat management and restoration at 1 priority site per year.

Action Priority: 2-High **Action Urgency:** Initiate immediately **Measure:** Acres managed

Potential Collaborators: Conservancies & Land Trusts, Pennsylvania Department of Conservation and Natural Resources, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, U.S. Fish and Wildlife Service

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Threat Category: Roads and Railroads **Threat Impact:** High - Low

Specific Threat: Roads fragment habitats, create corridors for invasive species, disrupt movement corridors, alter site microhabitats, and become a major source of mortality.

Action Category: Mitigate human environmental impact

Specific Action: Request developers use wildlife passage tunnels and associated barriers when roads are reconstructed.

Objective: Prevent road mortality and fragmentation via reactive planning.

Action Priority: 2-High **Action Urgency:** Initiate within 5 years **Measure:** Number of crossings initiated

Potential Collaborators: Other state agency, Pennsylvania Fish and Boat Commission

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action: other mobile wildlife

Season: Year-round

Threat Category: Housing and Urban Areas **Threat Impact:** Medium

Specific Threat: Development can alter wetland hydrology, water quality, and destroy or fragment habitats, thus isolating populations.

Action Category: Evaluation, effectiveness measures and learning

Specific Action: Evaluate reintroduction or augmentation at potential suitable sites.

Objective: Identify and prioritize 2 potential sites for reintroduction or augmentation.

Action Priority: 3-Medium **Action Urgency:** Initiate within 5 years **Measure:** Number of sites identified

Potential Collaborators: Conservancies & Land Trusts, Local agencies & municipalities, U.S. Fish and Wildlife Service

Locations: Physiographic Province: Appalachian Plateaus

Other species likely to benefit from this action:

Season: Year-round

Priority	Need	Partners
1	Assess genetic structure of extant populations to determine the extent of population isolation, and its impact on gene flow and genetic diversity.	
2	Develop reintroduction and augmentation protocols.	
3	Determine effective captive propagation procedures.	

Season: Year-round

Priority	Survey	Partners
1	Develop and implement population monitoring protocol for extant sites.	
2	Perform intensive repeated surveys of historic and gap sites to assess the current presence of eastern massasauga and the condition of the habitat.	
3	Survey and develop population estimates at known sites.	

Name: Assessment of the Impact of Habitat Restoration, Monitoring and Management Practices on the Eastern Massasauga Rattlesnake.

Lead(s) : Pennsylvania Fish and Boat Commission, MACHAC

Link: N/A

Description: Monitoring of habitat use and population at two (2) properties in Venango County. (Tippery).

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