



P E N N S Y L V A N I A  
W I L D L I F E A C T I O N P L A N

2015 - 2025

GUIDING FISH & WILDLIFE CONSERVATION IN THE  
COMMONWEALTH SINCE 2005




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**Climate Change Advisory Committee**

Harrisburg, PA • 07.12.16

A scenic view of a waterfall cascading over mossy rocks in a lush forest. The water flows over several tiers of large, flat rocks, creating a series of small waterfalls. The surrounding area is filled with dense green foliage, including trees and bushes, with sunlight filtering through the leaves. The overall atmosphere is peaceful and natural.

***Plans to protect air and water,  
wilderness and wildlife, are in  
fact plans to protect man.***

***Stewart Udall***

***Secretary of the Interior 1961-69***

Source: BrainyQuote.com. Retrieved January 8, 2016  
<http://www.brainyquote.com/quotes/quotes/s/stewartuda540240.html>

Image: Jonathan Run, Ohiopyle State Park  
PNHP/Betsy Leppo

# History of State Wildlife Action Plans



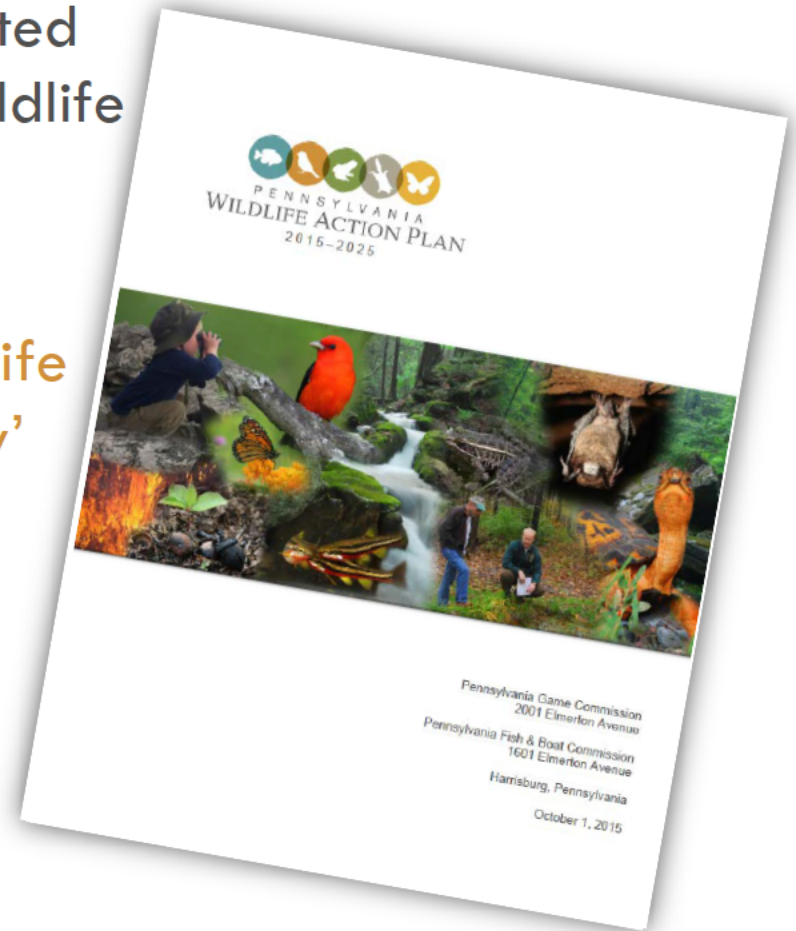
2001 legislation created the State & Tribal Wildlife Grants Program

Required a 'Comprehensive Wildlife Conservation Strategy'

First Plan approved in 2006

Required comprehensive update within 10 years

2015 State Wildlife Action Plan



# Importance of State & Tribal Wildlife Grants

“The State and Tribal Wildlife Grants program is considered the **core** program for keeping species healthy and off the federal threatened and endangered species list, a goal shared by a broad constituency of conservationists, business, farmers, ranchers, and land developers.”

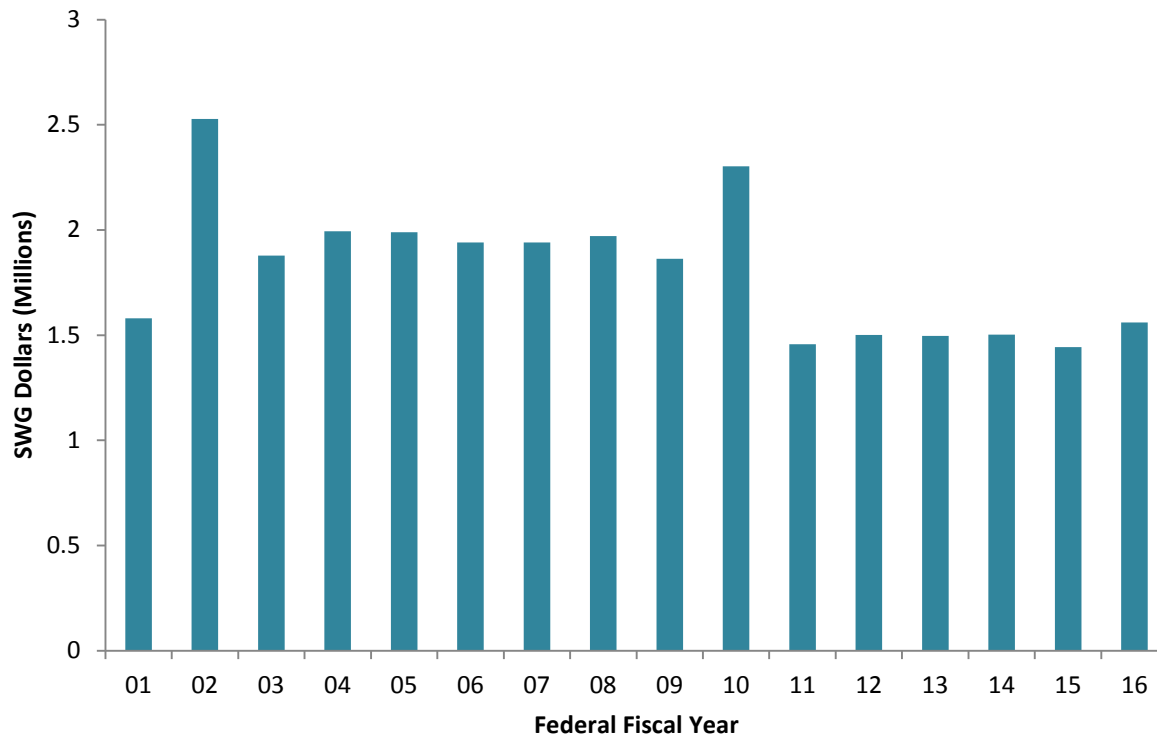
*Source: AFWA 2011 (State & Tribal Wildlife Grants (SWG) Program-10 Years of Success.)*

# State & Tribal Wildlife Grants

\$28.9 million for PA (federal-shared between PGC & PFBC)

~\$21 million non-federal

\$49.9 million Total



# Context of the Plan

- PFBC and PGC have authority for protecting and managing the Commonwealth's fish and wildlife.
- Plan is for all Pennsylvanians.
- Includes species that are not under state agency jurisdiction (i.e., terrestrial invertebrates).
- Includes actions that agencies may not be able to implement (e.g., lack of capacity, jurisdiction).



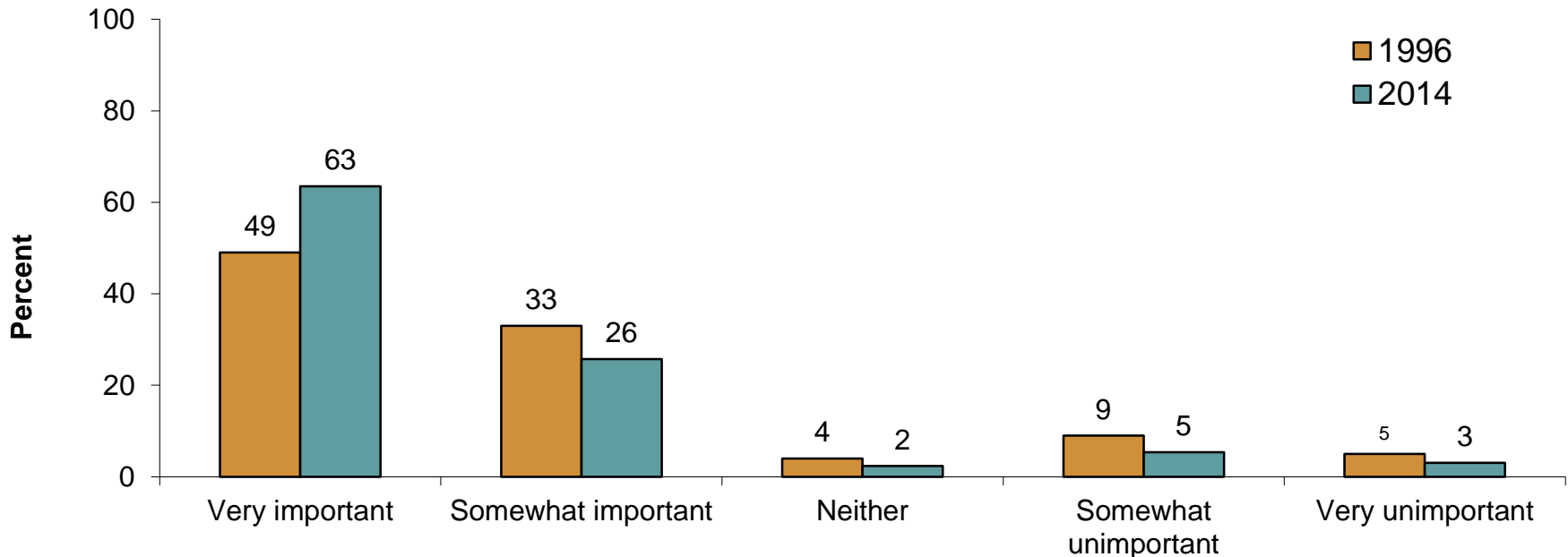
Frosted elfin, PNHP/Betsy Leppo

# This work is important to Pennsylvanians!

## 2014 Public Opinion Survey on Nongame Wildlife

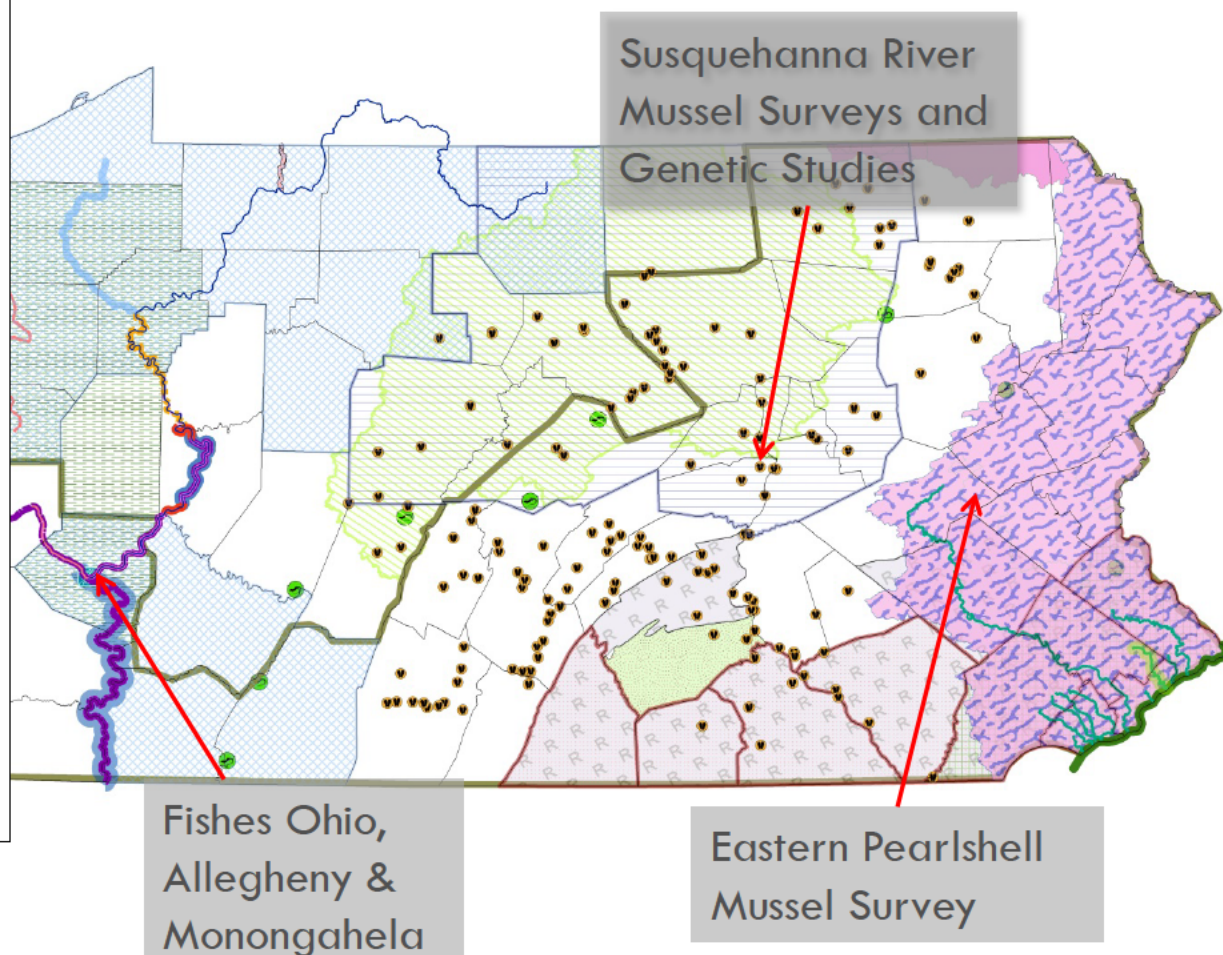
[Responsive Management 2014]

**Q16. Do you think managing and conserving nongame wildlife is an important or unimportant function of the Fish and Boat and Game Commissions?**



# Statewide impact for Fish, Amphibians, Reptiles and Mussels

DEFC State & Tribal Wildlife Grants Program Projects (FY01-14)

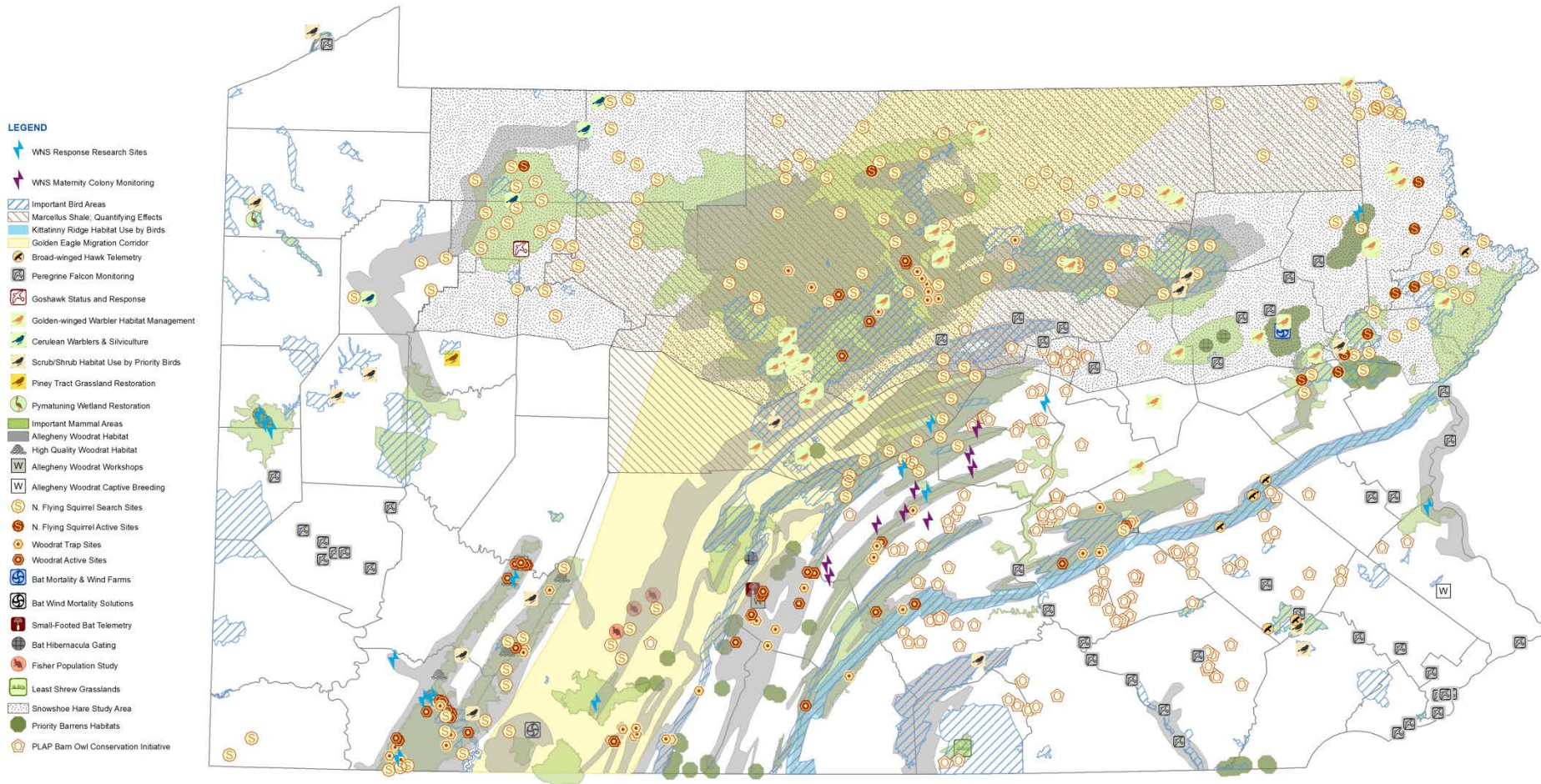


See Appendix 8.2; Pg. 8-38

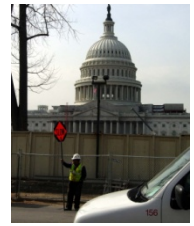


# Statewide impact for Birds & Mammals

## 55 PGC State & Tribal Wildlife Grants Program Projects (FY01-14)



# Required Elements of State Wildlife Action Plans



1. **Species:** Species of Greatest Conservation Need (SGCN) abundance and distribution.
2. **Habitat:** Extent and condition.
3. **Threats:** Problems or threats affecting SGCN and habitats.
4. **Actions:** Conservation actions to abate the problems/threats.
5. **Monitoring:** Monitoring effectiveness of the actions and the Plan overall.
6. **Revision:** Plans to review and revise the Plan every 10 years.
7. **Partners:** Stakeholder involvement in the process.
8. **Public Involvement:** Public input during implementation and revision.

# Climate Change:

## 2005 Pennsylvania Wildlife Action Plan

- Climate change mentioned, but not thoroughly discussed
- Amendment #2 (2010) dedicated to Climate Change
  - ▣ Broad-scale impacts to natural resources
  - ▣ Conservation and Management Implications
  - ▣ Species vulnerable to climate change
  - ▣ Adaptation strategies
- Commitment to a more thorough discussion in next comprehensive revision

# Looking to the future: 2015 Pennsylvania Wildlife Action Plan



# Background & Concepts

## **The 2015 Pennsylvania Wildlife Action Plan.....**

- is organized by Eight Required Elements with the Species Accounts as the foundational component.
- recognizes data gaps remain in species and habitat information.
- offers a framework to address needs of species and habitats.
- is not intended to be prescriptive.

# Review and Revision of the Foundational Aspects of the Plan

## **VISION**

Healthy, sustainable native wildlife populations, communities and habitats in Pennsylvania.

## **PURPOSE**

To conserve Pennsylvania's native wildlife, maintain viable habitat, and protect and enhance Species of Greatest Conservation Need.

## **GUIDING PRINCIPLES**

Conserve Pennsylvania's native imperiled species and their habitats.

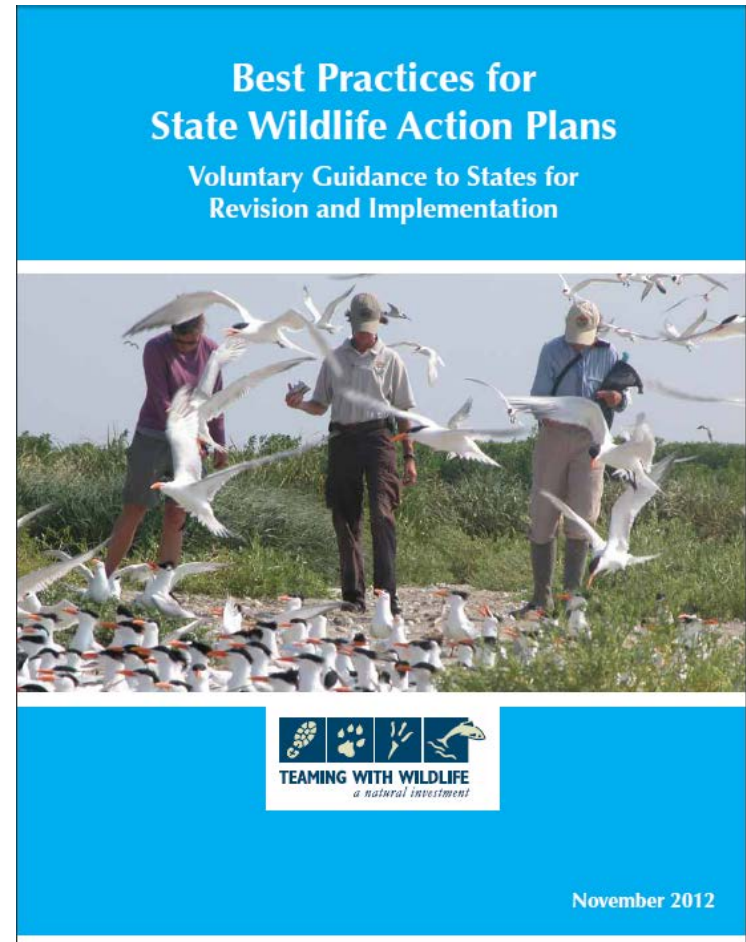
Keep common native species common.

Recognize Pennsylvania's regionally important roles in conserving species and habitats.

Promote partnerships for wildlife conservation.

# National Best Practices

*Be explicit and transparent about which criteria are used so it will be clear and repeatable to any user of a plan how the priorities were established (Groves 2003).*



# Box Score:

## Species of Greatest Conservation Need

Group	2005	Added	Deleted	2015
Birds	79	23	12	<b>90</b>
Mammals	22	5	7	<b>19</b>
Fish	76	11	22 <sup>a</sup>	<b>65</b>
Amphibians	13	6	1	<b>18</b>
Reptiles	22	2	2	<b>22</b>
Invertebrates	425	131	106 <sup>b</sup>	<b>450</b>
Total	632	<b>178</b>	<b>150</b>	<b>664</b>

<sup>a</sup> Includes 5 data deficient species; <sup>b</sup> Includes 29 data deficient species.



# Habitat

## Central Appalachian Pine-Oak Rocky Woodland

Macrogroup: Central Oak-Pine

Scale: Matrix forest

Area: Pennsylvania: 310,493 acres;

Northeast: 566,276 acres

A mixed forest or woodland of pitch pine (*Pinus rigida*) and/or Virginia pine (*P. virginiana*) mixed with dry-site oaks, primarily scrub oak (*Quercus ilicifolia*), scarlet oak (*Quercus coccinea*), and chestnut oak (*Q. montana*). Red pine (*Pinus resinosa*) and shortleaf pine (*Pinus echinata*) may also occur. Some areas have a fairly well-developed heath shrub layer; a graminoid herb layer dominated by Pennsylvania sedge (*Carex pennsylvanica*), poverty grass (*Danthonia spicata*), and common hairgrass (*Deschampsia flexuosa*) may be more prominent in others. The vegetation is patchy, with woodland as well as open portions, or even sparse cover on dry rocky hilltops and outcrops.

These forests occur on deep, acidic, coarse textured soils. A thick duff layer and dry conditions make this system subject to periodic fires, which in turn encourage oak regeneration.

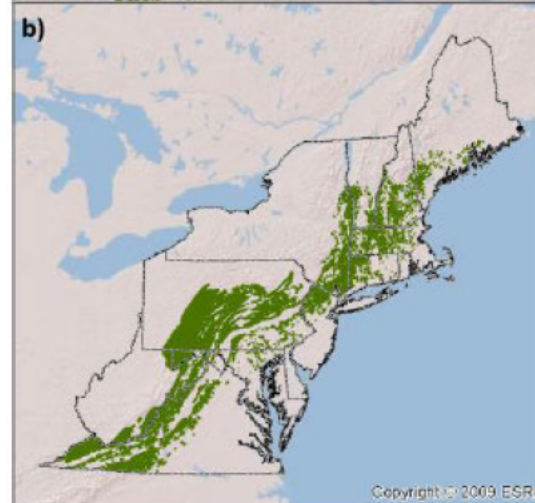
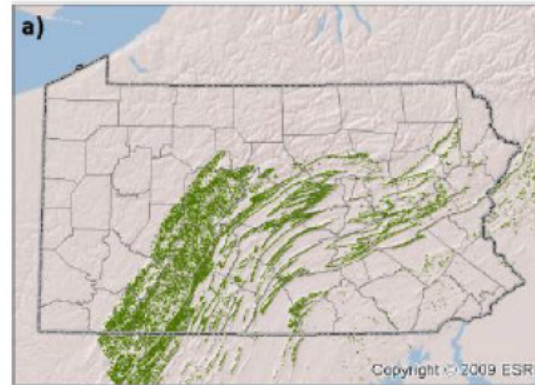
### Pennsylvania Terrestrial and Palustrine Community Classification Crosswalk

The following Pennsylvania Community Types (Zimmerman et al. 2012) are typically associated within this habitat:

- Dry Oak - Heath Woodland
- Dry Oak-Mixed Hardwood Forest
- Little Bluestem - Pennsylvania Sedge Opening
- Low Heath - Mountain Ash Shrubland
- Low Heath Shrubland
- Pitch Pine - Heath Woodland
- Pitch Pine - Mixed Hardwood Woodland
- Scrub Oak Shrubland
- Virginia Pine - Mixed Hardwood Forest

### SGCN Associated with this Habitat

706 unique occurrences or observations of 70 SGCN were associated with the Central Appalachian Pine



Habitat occurrences are increased in size when needed for clarity. This map is a modeled distribution based on current data and is not a substitute for field based inventory. Contact PHIP for additional information.



Habitat occurrences are increased in size when needed for clarity. This map is a modeled distribution based on current data and is not a substitute for field based inventory. Contact PHIP for additional information.

(2) are typically associated within

- Pitch Pine - Heath Woodland
- Pitch Pine - Mixed Hardwood Woodland
- Scrub Oak Shrubland
- Virginia Pine - Mixed Hardwood Forest

with the Central Appalachian Pine-Habitat Association with this

# Climate Change & the 2015 Pennsylvania Wildlife Action Plan

## **How is climate change addressed in the 2015 Plan?**

- Goals, Objectives and Strategies
- Species Accounts-Specific Threats & Actions
- Threats & Conservation Actions at State, Regional & National scales

# Climate Change & the 2015 Pennsylvania Wildlife Action Plan

## Goals, Objectives, Strategies

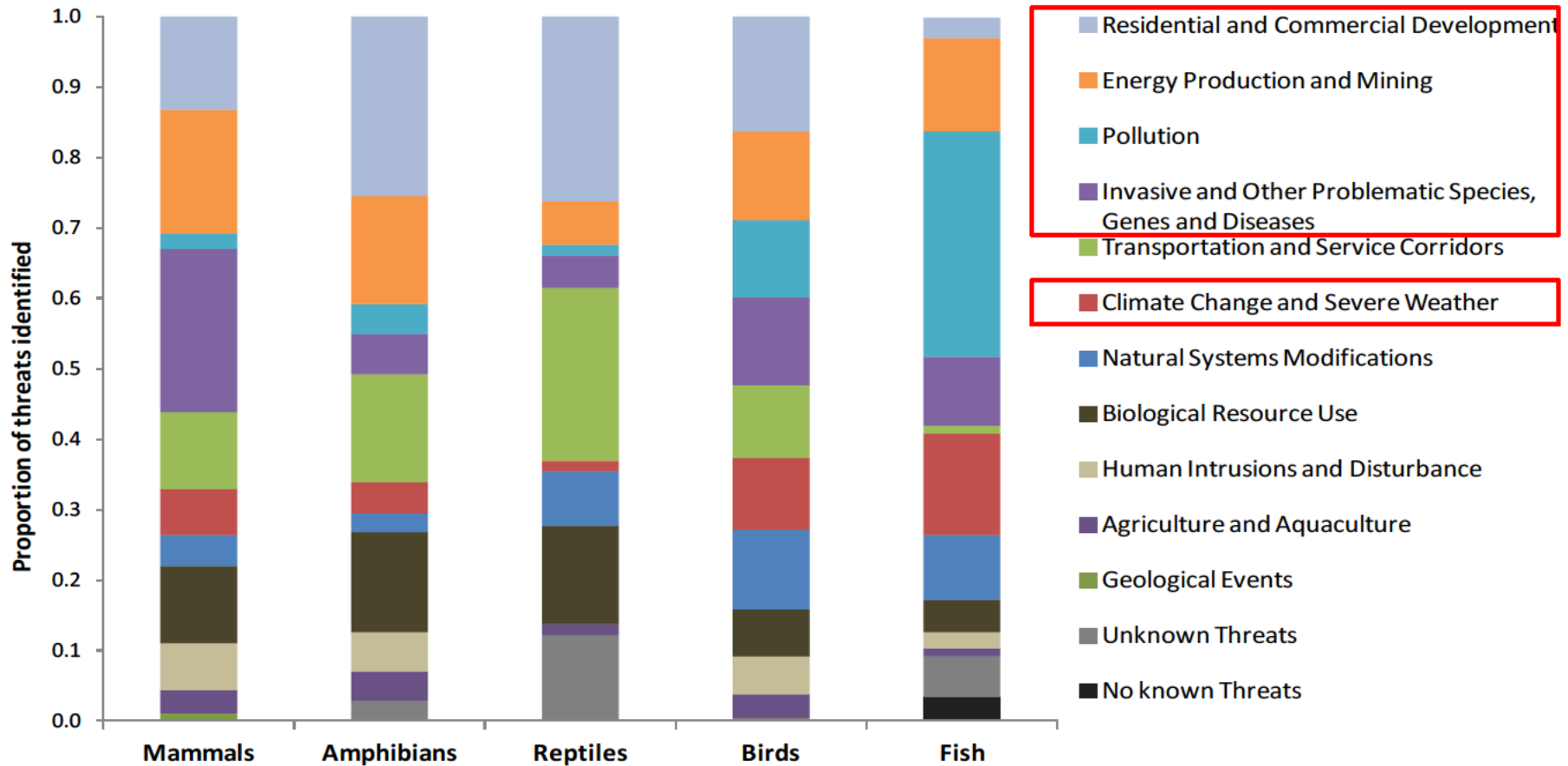
- Goal 2. Base wildlife conservation decisions on the best available science....
  - Objective 2.5. Evaluate threats to Species of Greatest Conservation Need and their habitats.
    - Strategy 2.5.1. Identify knowledge gaps... for existing and anticipated stressors (e.g., **climate change**...).....
    - Strategy 2.5.2. Identify an ecologically-connected network...of conservation areas.....resilient to pervasive threats (e.g., **climate change**)...to support a broad range of fish, wildlife, and habitats under alternative future conditions.

# Climate Change & the 2015 Pennsylvania Wildlife Action Plan

## Goals, Objectives, Strategies

- Goal 6. Develop a knowledgeable citizenry that supports and participates in wildlife conservation.
  - Objective 6.1. Enhance coordination among conservation partners to foster a well-informed citizenry.
    - Strategy 6.1.6. Increase public awareness and understanding of natural resources, ecosystem services and associated threats (e.g., **climate change**.....) and risks to Species of Greatest Conservation Need and their habitats.

# Threats Assessment Summary (Vertebrate SGCN)



# Species Accounts

## Eastern Hellbender

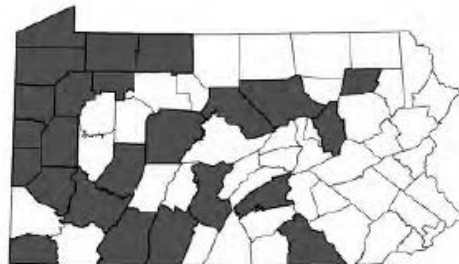
*Cryptobranchus alleganiensis alleganiensis*

Chris Urban, Kathy Gipe, Brandon Ruhe

PA Fish & Boat Commission, Western Pennsylvania Conservancy,  
The Mid-Atlantic Center for Herpetology and Conservation.



Photo: Tom Diez



■ Documented Presence

### CONSERVATION PROFILE

Global Rank	G3 Vulnerable	State Rank	S2S3
IUCN Red List	NT Near Threatened	PA Legal Status	Not Listed
Northeast Region	Very High Concern / Low Responsibility	PA Abundance	Unknown
Federal Status	Not Listed	PA Short-Term Trend (10 year)	Unknown

#### Conservation Goal:

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

### HABITAT ASSOCIATIONS

	Primary	Secondary
Macrogroup	Medium Rivers	
Habitat	Cool, Medium River	

#### Specific Habitat Requirements:

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

## THREATS AND ACTIONS

IUCN Threat: 8.0 Invasive and Other Problematic Species and Genes

Specific Threat: Disease potentially causes mortality or inhibits reproduction.

Action	Objective	Measure	Monitoring	Priority
TRACS Action 9.0 Planning Conduct targeted surveys across their range and compile survey data from available sources.	Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.	Number of blocks surveyed (PARS).	PARS annual report of activities.	3
Action Location: HUC4 Watershed: Allegheny, Susquehanna, U. Ohio, Monongahela				

IUCN Threat: 9.0 Pollution

Specific Threat: Sedimentation and increased runoff degrade water quality and habitat.

Action	Objective	Measure	Monitoring	Priority
TRACS Action 9.0 Planning Conduct targeted surveys across their range and compile survey data from available sources.	Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.	Number of blocks surveyed (PARS).	PARS annual report of activities.	3
Action Location: HUC4 Watershed: Allegheny, Susquehanna, U. Ohio, Monongahela				

IUCN Threat: 11.0 Climate Change and Severe Weather

Specific Threat: Increased flooding can degrade habitat quality and wipe out colonies.

Action	Objective	Measure	Monitoring	Priority
TRACS Action 9.0 Planning Conduct targeted surveys across their range and compile survey data from available sources.	Improve knowledge of distribution and population parameters in order to establish conservation and management actions that will prevent further declines.	Number of blocks surveyed (PARS).	PARS annual report of activities.	3
Action Location: HUC4 Watershed: Allegheny, Susquehanna, U. Ohio, Monongahela				

# Climate Change & the 2015 Pennsylvania Wildlife Action Plan

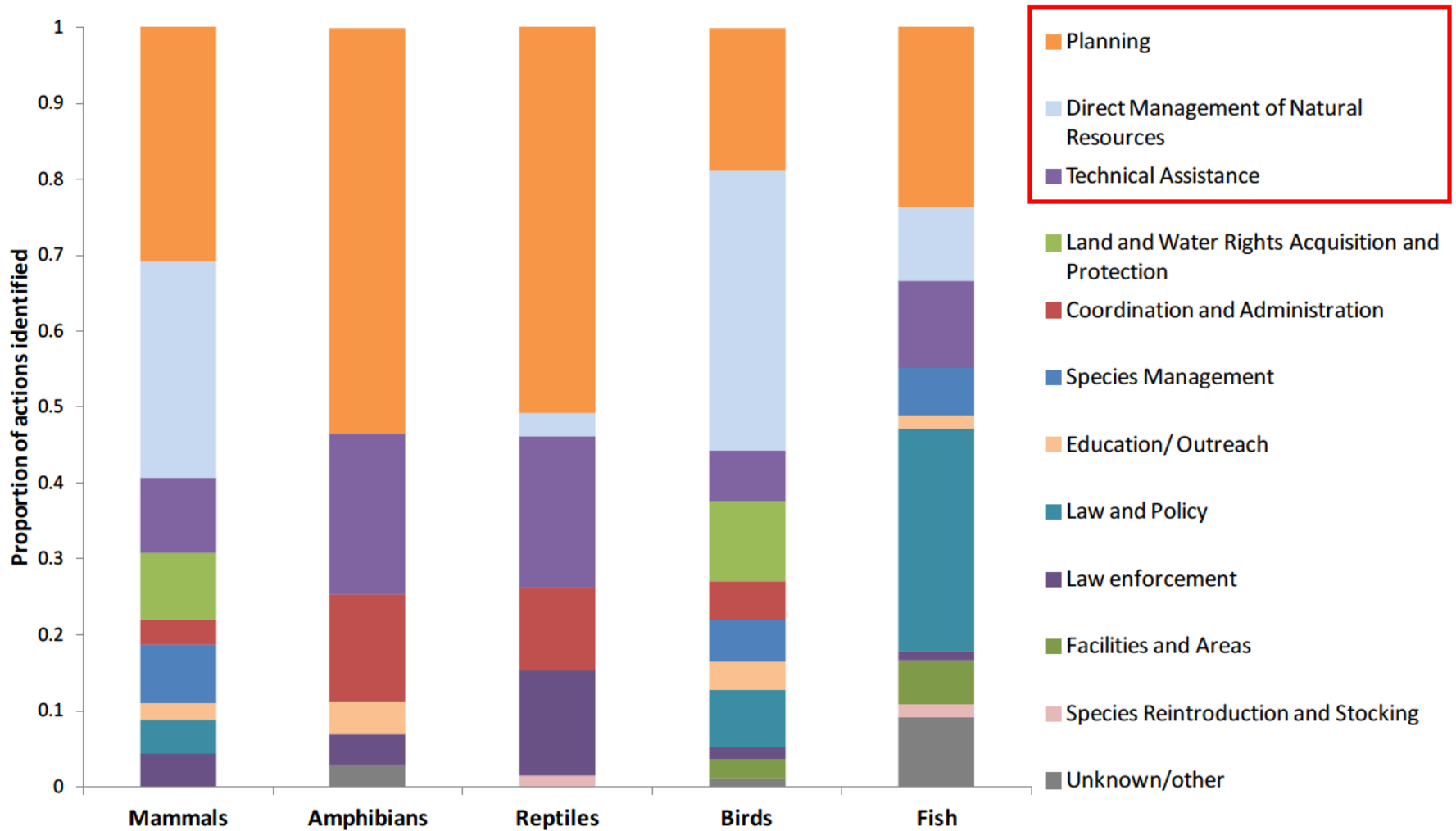
## Climate Change Threats by Major Taxonomic Groups

IUCN Threat Level 1 (11.0. Climate Change and Severe Weather)

Group	Number of Species	Total Number of SGCN
Birds	51	90
Mammals	6	19
Fish	49	65
Amphibians	3	18
Reptiles	1	22
Invertebrates	86	450



# Conservation Actions to Abate Threats



# Climate Change & the 2015 Pennsylvania Wildlife Action Plan

## Climate Change Actions by Major Taxonomic Groups

Group	Action Description
Birds	Coordination and Administration, Law & Policy, Species Management, Direct Management of Natural Resources, Education, Facilities and Areas, Planning
Mammals	Direct Management of Natural Resources
Fish	Law and Policy
Amphibians	Planning
Reptiles	Species Reintroduction

# Climate Change & the 2015 Pennsylvania Wildlife Action Plan

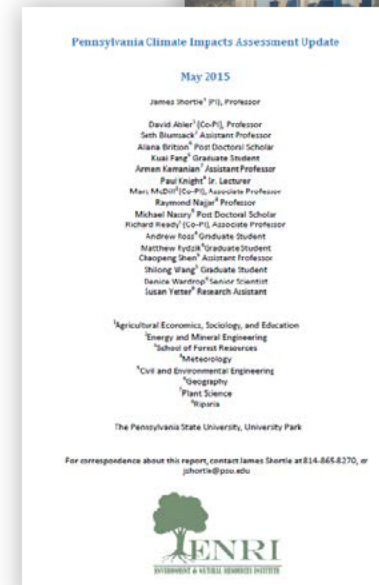
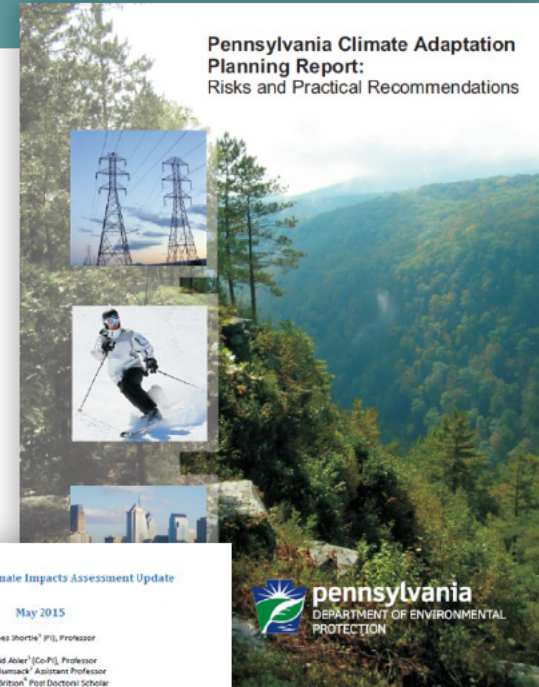
- Linkages with State, Regional & National strategies, plans & studies
  - **State:** Ross et al. 2013; Shortle et al. 2009, 2015; PA DEP 2014
  - **Regional:** NE Climate Science Center (Staudinger et al. 2015)
  - **National:** National Fish, Wildlife, and Plants Climate Change Adaptation Strategy (2012)



# Climate Change & the 2015 Pennsylvania Wildlife Action Plan

## Threats (Chapter 3)-Pennsylvania

- Climate Adaptation Planning Report (2014)
- Climate Impact Assessment Updates--Impacts on Species and Habitats (Adapted from Ross et al. 2013; Shortle et al. 2009, 2015)



# Climate Change & the 2015 Pennsylvania Wildlife Action Plan

## Conservation Actions (Chapter 4)-Pennsylvania

### *PA Climate Adaptation Planning Report*

- Recommendations from Working Groups (Examples)
  - Reduce Risk; Build resilience into conservation networks
    - Provide refugia and connecting corridors for migration
    - Small dam removal
  - Promote sustainable land use planning & development
    - Riparian buffers
    - Increase native plantings

# Climate Change & the 2015 Pennsylvania Wildlife Action Plan

## Conservation Actions (Chapter 4)-Pennsylvania

### *PA Climate Impact Assessments*

- Aquatic Resources (Examples)
  - Protect existing stream and wetlands; especially intact for species of interest
  - Maintain riparian forests
- Forests
  - Control insect pests, diseases, invasive plants and animals
  - Enhance forest connectivity for wildlife

# The 2015 Pennsylvania Wildlife Action Plan...

- Builds on work of the 2005 Plan.
- Identifies SGCN, their habitats, threats and approaches to address the threats (i.e., conservation actions), assess progress and engage partners and public participation.
- Draws on state, regional and national climate change studies & strategies to provide approaches for SGCN and their habitats.

# The 2015 Pennsylvania Wildlife Action Plan...

- Is a blueprint for Conservation Action for the next 10 years, including actions to address climate change.
- Is adaptable to emerging issues.
- Is required to remain eligible for State & Tribal Wildlife Grant funding.



H. Korber/PGC



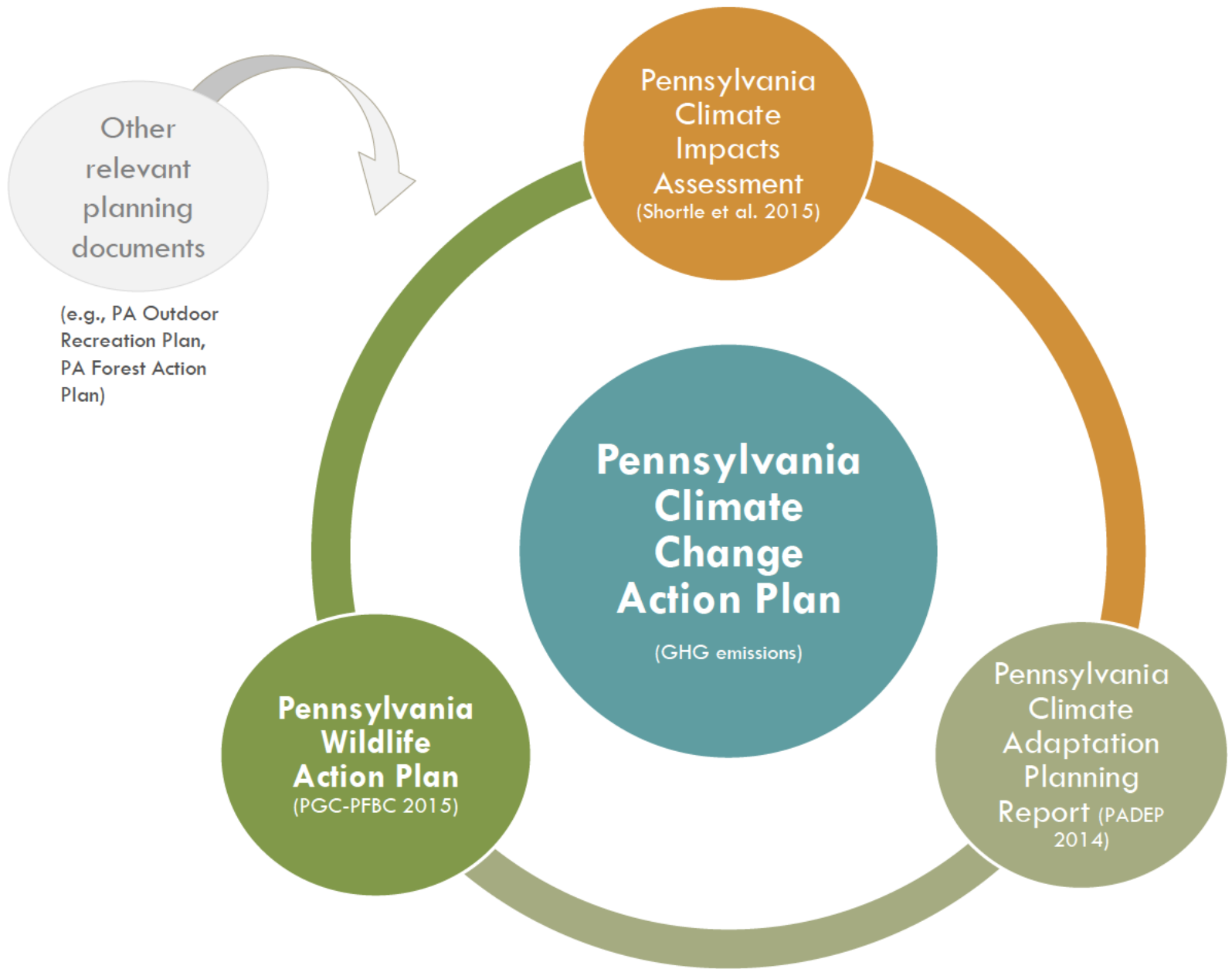
J. Dingel/PGC



# Next Steps: Key Actions

- Begin implementing conservation actions in the species accounts.
- Develop tools to enhance usability (e.g., Conservation Opportunity Areas Tool see *Chapter 4*)
- Coordinate with public and private partners to support and implement Wildlife Action Plan priorities.





A close-up photograph of an Atlantis fritillary butterfly perched on a small white flower with a yellow center. The butterfly's wings are a mix of brown and orange with dark spots and markings. The background is a soft-focus green field of similar flowers.

***The time to protect a species is  
while it's still common.***

***- Rosalie Edge***

Atlantis Fritillary  
(*Speyeria atlantis*)  
PNHP/Betsy Leppo

# THANK YOU!



## PENNSYLVANIA WILDLIFE ACTION PLAN



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