# PENNSYLVANIA WILDLIFE ACTION PLAN

## GUIDING FISH & WILDLIFE CONSERVATION IN THE COMMMONWEALTH SINCE 2005



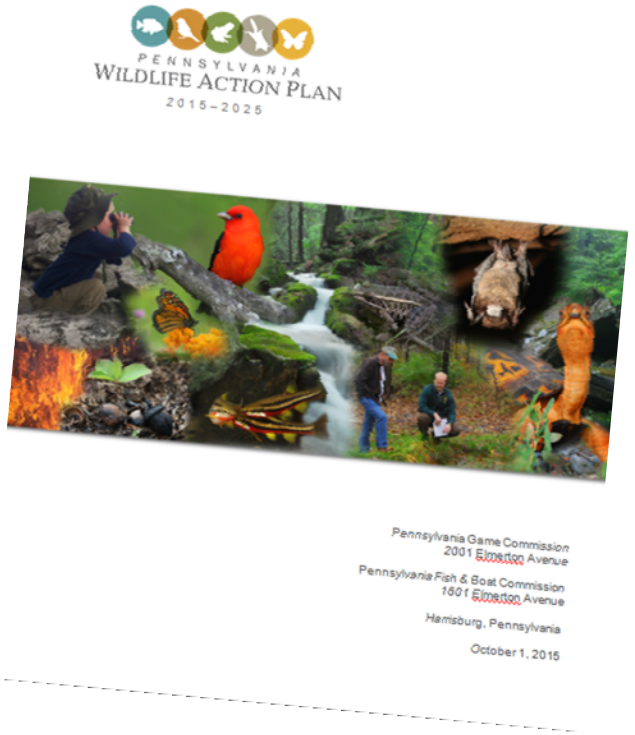
**Cathy Haffner and Diana Day**
Pennsylvania Wildlife Action Plan Coordinators
Pennsylvania Game Commission and Pennsylvania Fish & Boat Commission

Chesapeake Bay Program Habitat Goal Implementation Team Meeting
3 May 2016 ▪ Smithsonian Conservation Biology Institute

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

**Pennsylvania Fish & Boat Commission**
**http://fishandboat.com/swap.htm**

**Pennsylvania Game Commission**
**www.pgc.state.pa.us** > Wildlife > Wildlife Action Plan




*"The ultimate test of man's conscience may be the willingness to sacrifice something today for future generations whose words of thanks will not be heard."*
*Gaylord Nelson*

# Organized by the 8 Required Elements

- Introduction
- **Chapter 1**: Species
- **Chapter 2**: Habitats
- **Chapter 3**: Threats
- **Chapter 4**: Actions
- **Chapter 5**: Monitoring
- **Chapter 6**: 10 yr Revision
- **Chapter 7**: Partners
- **Chapter 8**: Public Input
- Literature Cited (68 pages!)

***Take Action!***

***Get Involved!***

***There are many opportunities for citizens to help Pennsylvania's Species of Greatest Conservation Need and their habitats.*** *Only a willingness to become involved is needed!*

**Habitat Enhancement**

Maintaining and enhancing habitats will be important for Pennsylvania's Species of Greatest Conservation Need. From backyards to large tracts, there are many actions you can take. Here are few ideas:

- ✓ Manage forests wisely to support Species of Greatest Conservation Need
- ✓ Plant trees to protect and restore stream banks
- ✓ Control invasive plant species along streams, in forests, and around wetlands
- ✓ Plant milkweed and other native wildflowers to help monarch butterflies, bees, and other pollinators
- ✓ Implement "Best Management Practices" for vernal (seasonal) pools
- ✓ Install a rain garden to protect and improve water quality by reducing urban run-off into waterways and wetlands
- ✓ Landscape with native plants to provide food and shelter for wildlife

# Six goals guide our work

Conserve Pennsylvania's native wildlife and its habitat by implementing conservation actions in the Wildlife Action Plan.

Base wildlife conservation decisions on the best available science, with an emphasis on Species of Greatest Conservation Need and their habitats.

Contribute to range-wide conservation of Species of Greatest Conservation Need.

Strengthen the state's capacity to conserve Pennsylvania's native wildlife.

Continue to improve cooperation within and between public agencies and other partners in wildlife conservation planning and implementation.

Develop a knowledgeable citizenry that supports and participates in wildlife conservation.

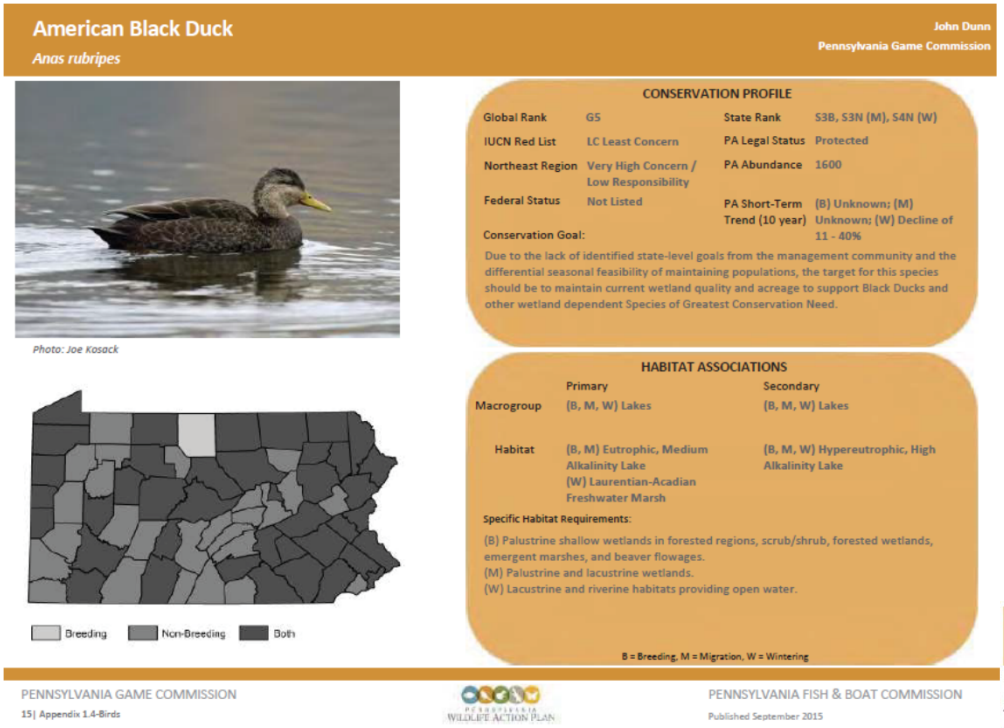
# **664** terrestrial and aquatic species identified to be in greatest need of conservation.

- 90 Birds
- 19 Mammals
- 65 Fish
- 18 Amphibians
- 22 Reptiles
- 450 Invertebrates

*"In the end, the 2015-2025 State Wildlife Action Plan is a declaration – an affirmation that each of these wild creatures is an important part of a vivid, vibrant Penn's Woods, and the birthright of every Pennsylvanian."*

*Scott Weidensaul, Wildlife Action Plan Foreword*

# Foundational species accounts



**American Black Duck**
*Anas rubripes*

John Dunn
Pennsylvania Game Commission

Photo: Joe Kosack

**CONSERVATION PROFILE**

| | | | |
|---|---|---|---|
| Global Rank | G5 | State Rank | S3B, S3N (M), S4N (W) |
| IUCN Red List | LC Least Concern | PA Legal Status | Protected |
| Northeast Region | Very High Concern / Low Responsibility | PA Abundance | 1600 |
| Federal Status | Not Listed | PA Short-Term Trend (10 year) | (B) Unknown; (M) Unknown; (W) Decline of 11 - 40% |

Conservation Goal:

Due to the lack of identified state-level goals from the management community and the differential seasonal feasibility of maintaining populations, the target for this species should be to maintain current wetland quality and acreage to support Black Ducks and other wetland dependent Species of Greatest Conservation Need.

**HABITAT ASSOCIATIONS**

| | Primary | Secondary |
|---|---|---|
| Macrogroup | (B, M, W) Lakes | (B, M, W) Lakes |
| Habitat | (B, M) Eutrophic, Medium Alkalinity Lake<br>(W) Laurentian-Acadian Freshwater Marsh | (B, M, W) Hypereutrophic, High Alkalinity Lake |

Specific Habitat Requirements:

(B) Palustrine shallow wetlands in forested regions, scrub/shrub, forested wetlands, emergent marshes, and beaver flowages.
(M) Palustrine and lacustrine wetlands.
(W) Lacustrine and riverine habitats providing open water.

Breeding | Non-Breeding | Both

B = Breeding, M = Migration, W = Wintering

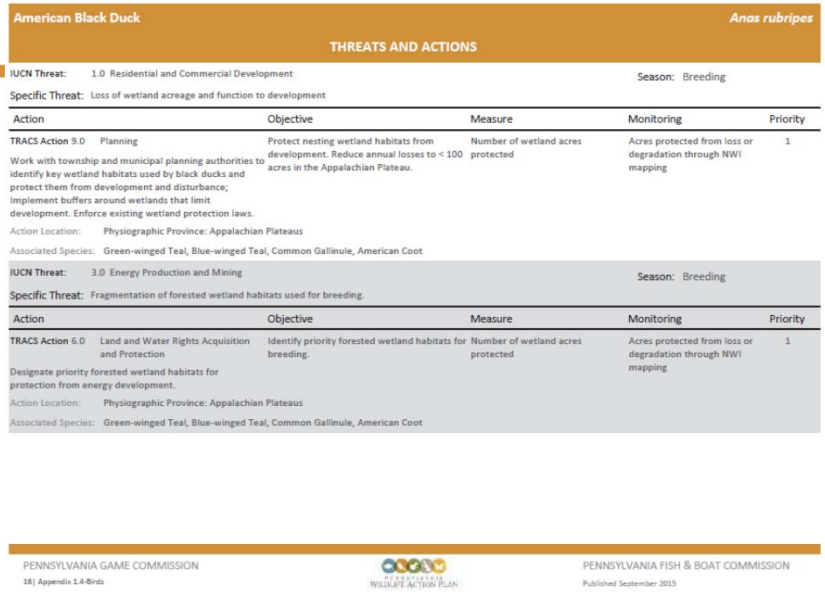
PENNSYLVANIA GAME COMMISSION
15| Appendix 1.4-Birds

PENNSYLVANIA WILDLIFE ACTION PLAN

PENNSYLVANIA FISH & BOAT COMMISSION
Published September 2015

- Birds
- Mammals
- Reptiles
- Amphibians
- Fish
- T&E Invertebrates

- Conservation Profile
- Habitat Associations Threats & Actions
- Research & Survey Needs
- Monitoring Programs



**American Black Duck** *Anas rubripes*

**THREATS AND ACTIONS**

IUCN Threat: 1.0 Residential and Commercial Development — Season: Breeding

Specific Threat: Loss of wetland acreage and function to development

| Action | Objective | Measure | Monitoring | Priority |
|---|---|---|---|---|
| TRACS Action 9.0 Planning<br>Work with township and municipal planning authorities to identify key wetland habitats used by black ducks and protect them from development and disturbance; Implement buffers around wetlands that limit development. Enforce existing wetland protection laws. | Protect nesting wetland habitats from development. Reduce annual losses to < 100 acres in the Appalachian Plateau. | Number of wetland acres protected | Acres protected from loss or degradation through NWI mapping | 1 |

Action Location: Physiographic Province: Appalachian Plateaus

Associated Species: Green-winged Teal, Blue-winged Teal, Common Gallinule, American Coot

IUCN Threat: 3.0 Energy Production and Mining — Season: Breeding

Specific Threat: Fragmentation of forested wetland habitats used for breeding.

| Action | Objective | Measure | Monitoring | Priority |
|---|---|---|---|---|
| TRACS Action 6.0 Land and Water Rights Acquisition and Protection<br>Designate priority forested wetland habitats for protection from energy development. | Identify priority forested wetland habitats for breeding. | Number of wetland acres protected | Acres protected from loss or degradation through NWI mapping | 1 |

Action Location: Physiographic Province: Appalachian Plateaus

Associated Species: Green-winged Teal, Blue-winged Teal, Common Gallinule, American Coot

PENNSYLVANIA GAME COMMISSION
16| Appendix 1.4-Birds

PENNSYLVANIA WILDLIFE ACTION PLAN

PENNSYLVANIA FISH & BOAT COMMISSION
Published September 2015

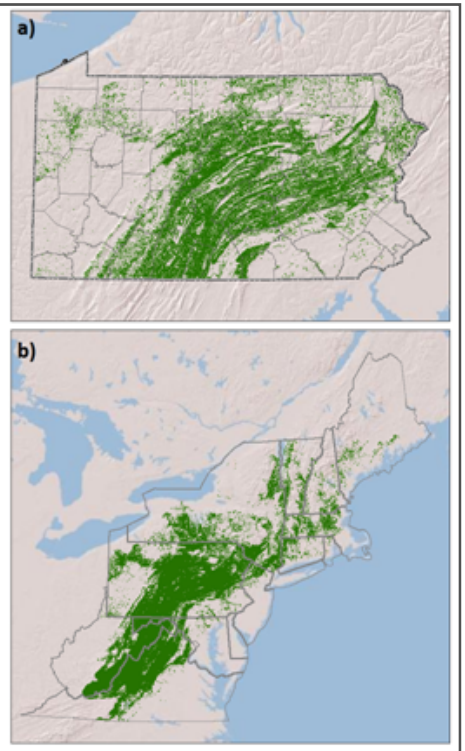
# “Coarse filter” habitat associations

## Northeast Terrestrial and Aquatic Habitat Classification Systems

[Gawler 2008; Olivero and Anderson 2008; Anderson et al. 2013]

- Extent of each habitat system is mapped within PA and the NE region
- Description and crosswalk to the PA community classification is provided
- List of SGCN with primary and secondary habitat associations
- Condition metrics

**Central Appalachian Dry Oak-Pine Forest**
Macrogroup: Central Oak-Pine
Scale:
Area: Pennsylvania- 1,496,364 acres;
Northeast- 3,845,317 acres



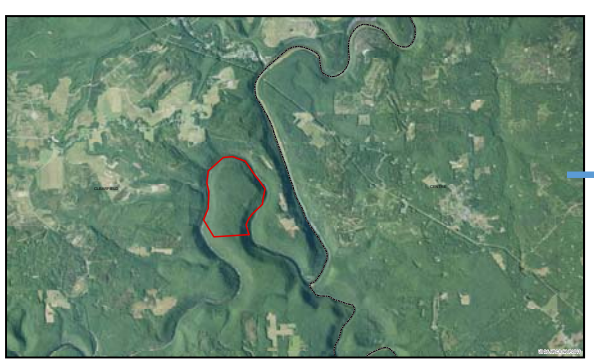

An oak or oak-pine forest of dry sites, characterized by a variable mixture of drought tolerant oaks—including chestnut oak (*Quercus montana*), white oak (*Q. alba*), red oak (*Q. rubra*), black oak (*Q. nigra*), scarlet oak (*Q coccinea*)—and pines–including pitch (*Pinus rigida*), white (*P. strobus*), Virginia (*P. virginiana*). It occurs broadly in the Central Appalachians and northern Piedmont ecoregions, most commonly as a large (to very large) patch habitat. Community structure ranges from open woodlands to closed forest. Heath shrubs are common in the understory; the herb layer is often sparse and lacks diversity. In the absence of fire this system may tend to succeed to hemlock (*Tsuga canadensis*) and locally common hardwoods.

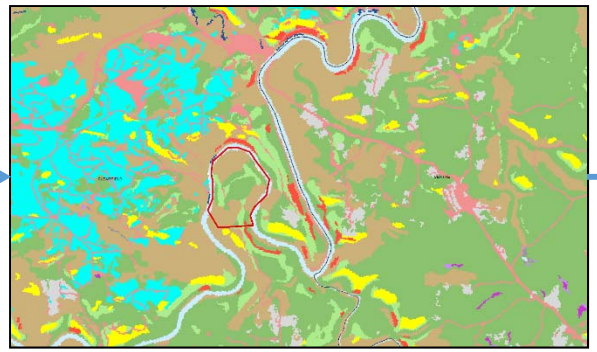
This is a habitat of dry rolling hills, high sunny slopes and ridgetops, where soils are often thin, well-drained, and nutrient-poor. Bedrock substrates are variable, and can influence herb diversity. Disturbance agents include fire, windthrow, and ice damage, and gypsy moths can wreak havoc in the oak overstory periodically.

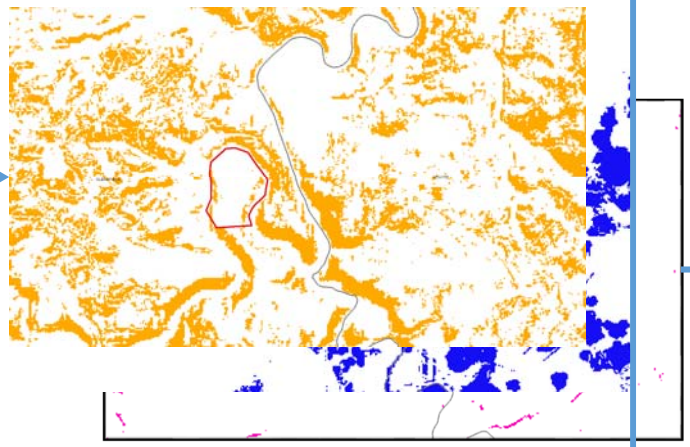
Pennsylvania Terrestrial and Palustrine Community Classification Crosswalk

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

- Virginia Pine - Mixed Hardwood Forest
- Dry Oak-Mixed Hardwood Forest
- Dry Oak - Heath Forest
- Dry White Pine (Hemlock) - Oak Forest
- Pitch Pine - Heath Woodland
- Pitch Pine - Mixed Oak Forest







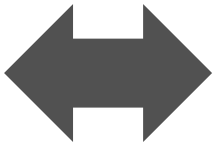
## *COMING SOON!*

# Conservation Opportunity Area Tool

| Species | Habitat | Threat | Action |
|---|---|---|---|
| SGCN 1 | Interior Dry-Mesic Oak Forest | Loss of young forest to succession | Direct Management of Natural Resources |
| SGCN 2 | Interior Dry-Mesic Oak Forest | Habitat loss to commercial & residential development | Data Collection, Land Protection |
| SGCN 3 | Appalachian (Hemlock)-Northern Hardwood Forest | Forest loss and fragmentation | Planning |

# LINKAGES


Chesapeake Bay Program
Science. Restoration. Partnership.




PENNSYLVANIA
WILDLIFE ACTION PLAN

# Descriptions
## "Goal or Strategy Alignment/Linkage"

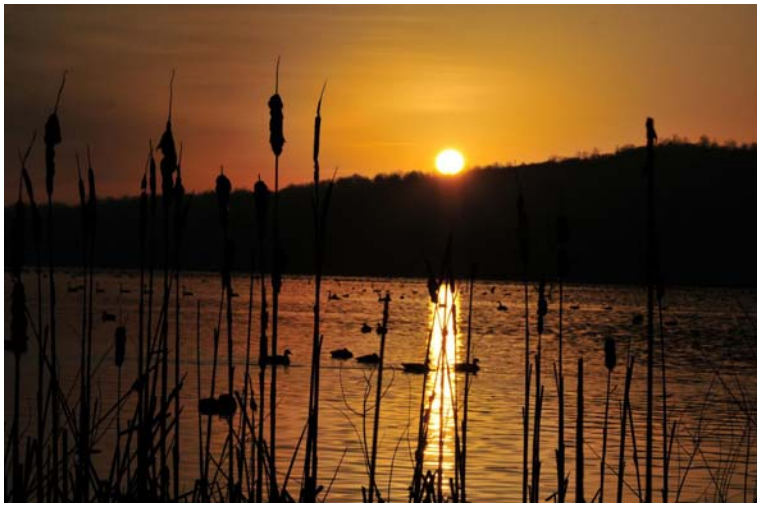
- **Full Alignment**: Specifically noted in the 2015 Pennsylvania Wildlife Action Plan *and* likely to be conducted in the Chesapeake Bay basin.
- **Partial Alignment**: Noted in the 2015 Pennsylvania Wildlife Action Plan, but is not specific to the Chesapeake Bay basin.
- **Does Not Align**: Not mentioned or relevant to the 2015 Pennsylvania Wildlife Action Plan.

Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Vital Habitat Goals Most Aligned

- Fish Passage
- Brook Trout
- Wetlands
- American Black Duck



Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Goal and Management Approach Alignment
# Fish Passage

| | FISH PASSAGE | Fully aligns | Partially aligns | Does not align |
|---|---|---|---|---|
| 1 | Open 1,000 stream miles for migratory fish | ■ | | |
| 2 | Document fish in opened streams | ■ | | |
| 3 | Use Chesapeake Bay Fish Passage Tool | | ■ | |

Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

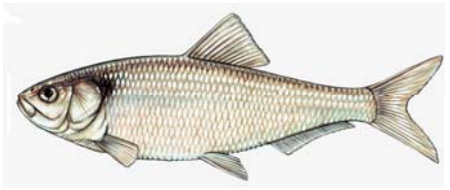
# Goal and Management Approach Alignment
# Fish Passage

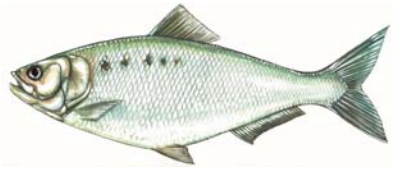
## Full Alignment

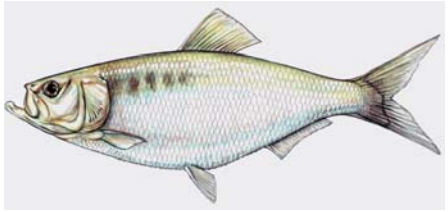
*Anadromous Species*

**Species- Conservation Action**

- Alewife
- American eel
- American shad
- Blueback herring
- Hickory shad







Images by Ted Walke

Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Goal and Management Approach Alignment
# Fish Passage

*Anadromous Species-Species Accounts*

- **Conservation Action**: Design and construct efficient fish passage facilities and remove dams where feasible.
- **Objective**: Restore migratory fish runs to native watersheds.
- **Measure**: Presence of migratory fishes.
- **Monitoring**: Monitor fish passage visually during migrations; surveys upriver of dams.

Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Goal and Management Approach Alignment
# Fish Passage

**Partial Alignment** (Example)

*Chesapeake Bay Fish Passage Tool*

- **Strategy 2.8.5**. Develop and maintain analytical and decision-support tools to guide implementation of conservation actions.

# Goal and Management Approach Alignment
# Brook Trout

| BROOK TROUT | | Fully aligns | Partially aligns | Does not align |
|---|---|---|---|---|
| 1 | Identify & communicate Brook Trout focal areas | | ■ | |
| 2 | Climate change and emerging stressors | ■ | | |
| 3 | Refine & apply decision support tools | | ■ | |
| 4 | Brook Trout monitoring | ■ | | |

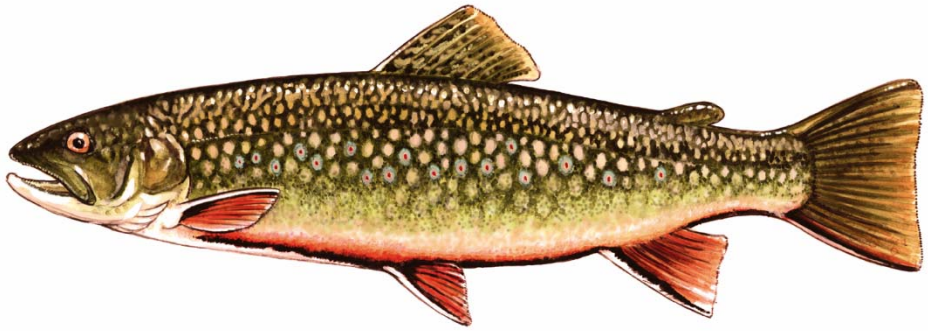
Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Goal and Management Approach Alignment
# Brook Trout

## Full Alignment

- *Climate change and emerging stressors*
- *Brook Trout monitoring*
  - Brook Trout Species Account



Ted Walke

Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Goal and Management Approach Alignment
# Brook Trout

**Partial Alignment** (Examples)

*Identify & communicate Brook Trout focal areas*

**Strategy 5.1.2**: Coordinate with local, state, and federal governments, private landowners and other conservation partners to support Pennsylvania's Wildlife Action Plan..

*Refine & apply decision support tools*

**Strategy 2.7.5**:Validate modeling and statistically-based analytical tools and outputs for use in effective conservation decision-making.

# Goal and Management Approach Alignment
# Submerged Aquatic Vegetation

| | SUBMERGED AQUATIC VEGETATION | Fully aligns | Partially aligns | Does not align |
|---|---|---|---|---|
| **1** | Restore water clarity | | ■ | |
| **2** | Protect existing SAV | | ■ | |
| **3** | Restore SAV | | | ■ |

Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Goal and Management Approach Alignment
# Submerged Aquatic Vegetation

## Partial alignment

- Restore water clarity
- Protect existing SAV

  **Species Accounts** (Anadromous species): Compliance for Section 401 water quality certification on Lower Susquehanna.

## No alignment

- Restore SAV

# Goal and Management Approach Alignment
# Stream Health

| | STREAM HEALTH | Fully aligns | Partially aligns | Does not align |
|---|---|---|---|---|
| **1** | Identify stream health metrics | | ■ | |
| **2** | Implementation funding & technical resources | | ■ | |
| **3** | Engage local, state & federal parties | | ■ | |

Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Goal and Management Approach Alignment
# Stream Health

**Partial Alignment** (Example)

*Stream Health Metrics*

**Strategy 2.3.2**: Develop or update habitat survey strategies and protocols.


Pine Creek @ Avis, Mary Walsh WPC/PNHP

Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Goal and Management Approach Alignment
# Stream Health

**Partial Alignment** (Example)

*Implementation Funding & Technical Resources*

**Strategy 4.3.4**: Engage partners (e.g., agencies, nongovernmental organizations, private foundations, institutes) to leverage financial and technical support for Wildlife Action Plan Priorities.

# Goal and Management Approach Alignment
# Stream Health

**Partial Alignment** (Example)

*Public & Partner Engagement*

**Strategy 6.1.6**: Increase public awareness and understanding of natural resources, ecosystem services and associated threats……..

# Goal and Management Approach Alignment
# Wetlands

| WETLANDS | Fully aligns | Partially aligns | Does not align |
|---|---|---|---|
| 1 Improve wetland mapping, tracking & reporting | | | |
| 2 Identify implementation barriers & solutions | | | |
| 3 Increase technical understanding | | | |
| 4 Prioritize areas for restoration | | | |
| 5 Expand local stakeholder involvement | | | |

Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Goal and Management Approach Alignment
# Wetlands

**Full Alignment** (Examples)

*Improve wetland mapping, tracking & reporting*

*Increase technical understanding*

**Strategy 2.3.3**: Survey habitats to characterize current condition and identify conservation actions to support Species of Greatest Conservation Need.


Ryan Miller, Western PA Conservancy

# Goal and Management Approach Alignment Wetlands

**Full Alignment** (Examples)

*Identify implementation barriers & solutions*

**Strategy 2.3.1**: Determine limiting habitat factors, threats and management needs for Species of Greatest Conservation Need.

*Prioritize areas for restoration*

**Strategy 1.2.1**: Identify where conservation actions should be implemented to maximize the benefit to Species of Greatest Conservation Need…..

# Goal and Management Approach Alignment
# Wetlands

**Full Alignment** (Example)

*Expand local stakeholder involvement*

**Strategy 5.1.2**: Coordinate with local, state, and federal governments, private landowners and other conservation partners to support Pennsylvania's Wildlife Action Plan.

Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Goal and Management Approach Alignment
# American Black Duck

| | AMERICAN BLACK DUCK | Fully aligns | Partially aligns | Does not align |
|---|---|---|---|---|
| **1** | Restore degraded wetlands | | | |
| **2** | Enhance & manage wetlands | | | |
| **3** | Protect wetlands | | | |
| **4** | Planning & technical tools at the local level | | | |

# Goal and Management Approach Alignment
# American Black Duck

**Full Alignment** (Examples)

*Restore degraded wetlands*

**Strategy 1.1.1**: Implement at least one priority conservation action for each SGCN or ecosystem, focusing on actions with benefits to multiple species.

*Protect wetlands or vegetation (Species Account)*

**Action**: Work at municipal level to identify key wetland habitats and protect them from development…

Chesapeake Bay Program
Science. Restoration. Partnership.

PENNSYLVANIA
WILDLIFE ACTION PLAN

# Contact Us!

Fish, reptiles, amphibians, aquatic invertebrates


**DIANA DAY**
Conservation Coordinator
Bureau of Fisheries
diday@pa.gov


Birds and mammals


**CATHY HAFFNER**
Conservation Planning Coordinator
Wildlife Diversity Division
chaffner@pa.gov