

## Conservation at work

The Highlands Region hosts some of the most critical habitat for birds and trout. These habitats, identified by the Audubon Society and Trout Unlimited are vital to the migration and breeding of a wide variety of winged and finned species.

### Important Bird Areas Program

Important Bird Areas (IBA) provide essential habitat for breeding, wintering, and/or migrating birds. They range from a few acres to thousands and can be in your backyard or a public park. To qualify as an IBA, an area must satisfy at least one of the following criteria. The site must support:

- Species of conservation concern (e.g. threatened and endangered species)
- Restricted-ranges species (species vulnerable because they are not widely distributed)
- Species that are vulnerable because their populations are concentrated in one general habitat type or
- Species, or groups of similar species (such as waterfowl or shorebirds), that are vulnerable because they occur at high densities due to congregatory behavior

### IBA Facts

- 48 State Programs Underway
- 41 States with Identified Sites
- More than 2100 State-level IBAs
- More than 300 million acres of Identified IBAs
- 174 Global IBAs

For more information visit: [www.audubon.org/bird/iba/index.html](http://www.audubon.org/bird/iba/index.html)

### Eastern Brook Trout Study

Brook trout (*Salvelinus fontinalis*) are the only trout native to much of the eastern US. Arguably the most beautiful freshwater fish, brook trout survive in only the coldest and cleanest water, serving

as indicators of watershed health. Strong wild brook trout populations demonstrate a healthy stream or river ecosystem with excellent water quality, while a decline in population can serve as an early warning that the health of an aquatic system is at risk. After witnessing a steady regional decline in brook trout, the Eastern Brook Trout Joint Venture (EBTJV) was formed to restore fishable populations. Trout Unlimited's Conservation Success Index (CSI) combines brook trout population data generated from this effort and many other types of landscape information that evaluates the habitat integrity and future security of that land. The CSI scores the subwatersheds, or lands typically containing 25 to 75 miles of streams, where brook trout historically survived.

### CSI Brook Trout Facts

- 267 subwatersheds are located within the Highlands Boundary
- 26% of those are targeted for land protection work
- 44% are prioritized for habitat restoration work
- 39% of subwatersheds brook trout have entirely vanished

For more information visit: [www.tu.org/site/c.kkLRJ7MSKtH/b.4348001/k.A11B/Brook\\_Trout.htm](http://www.tu.org/site/c.kkLRJ7MSKtH/b.4348001/k.A11B/Brook_Trout.htm)

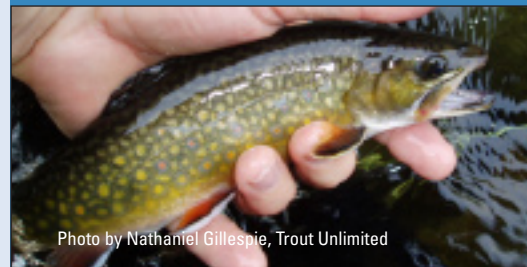


Photo by Nathaniel Gillespie, Trout Unlimited

CSI maps illustrate the status of brook trout and their habitat across the Eastern brook trout range—from Maine to Georgia to Ohio. An interactive mapping tool allows the use of Google Earth or Google Maps to view specific subwatersheds in the NY, NJ, PA and CT Highlands.



## Help support

- Living Lightly \$25
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- Summit Circle \$5000

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We can only accept payment by check, made to Appalachian Mountain Club. Please put "Highlands Coalition" in the memo.



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This project funded through a generous grant by the Philadelphia Zoo.

## WILDLIFE IN THE HIGHLANDS

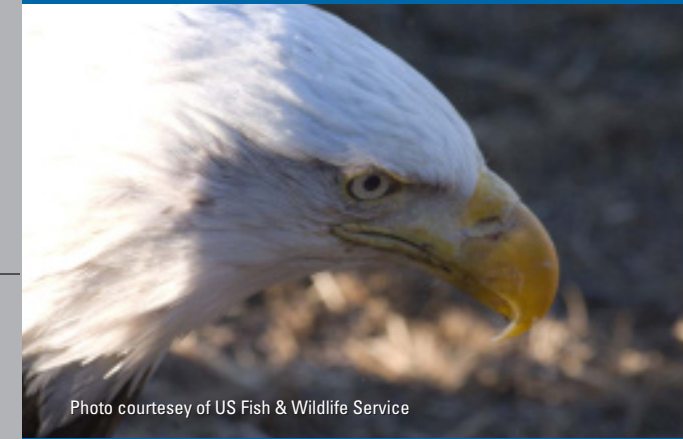


Photo courtesy of US Fish & Wildlife Service

THE HIGHLANDS COALITION  
[www.highlandscoalition.org](http://www.highlandscoalition.org)

## Biodiversity



### Species Spotlight

#### Bog Turtle

*Glyptemys muhlenbergii*

- Smallest PA turtle at about 4 inches
- Doesn't require a lot of habitat
- Very susceptible to development impacts
- Pet trade is another problem
- Lives in springs and seeps, open wet and marshy meadows
- Spends a Lot of time basking in the sun
- Lives 20–30 years
- Mates April through June
- 1–6 eggs (laid June/July) hatch in August
- Overwinters in mud, starting in October
- PA endangered since 1974 and Federally endangered since 1997
- Light grazing, controlled burning, and other habitat management help preserve habitat

Biological diversity is critical for a balanced ecosystem. More than ever before, we are witnessing the interconnectedness between natural and built environments and between human and animal populations. With over 250 species of “special concern” in the four-state Highlands region, achieving compatibility within these environments and populations is a complex but essential task. From large mammals to birds, from amphibians to insects, all are crucially important to a well functioning ecosystem. Some of the most notable species in the Highlands include the bog turtle, bald eagle, Indiana bat, and Eastern-timber rattlesnake. Many species in the NY-NJ-PA-CT area, such as black bears, bobcats and neo-tropical birds, depend on large unbroken forests for their survival (500 acres or more). In 2004, Congress passed the Highlands Conservation Act (HCA) to protect land in this region with high conservation value for wildlife, water and forests. Today, the Highlands Coalition is diligently working with agencies, non-profit partners, and private foundations in order to secure funds from the HCA to protect these lands.

### Facts & Figures

- 25% (350,000 acres) of the NY-NJ Highlands consists of large, unbroken forests
- 10.5% (210,000 acres) of the PA Highlands consists of large, unbroken forests
- 69% (465,600 acres) of the CT Highlands are forested; however between 1985 and 2002, almost 11,000 acres of forests were lost
- 1,861 miles of trout streams in the NY-NJ Highlands
- 95 miles of Class A Trout Streams in the PA Highlands
- 61,366 acres designated Important Bird Areas in the PA Highlands
- 76,194 acres of Important Mammal Areas in the PA Highlands
- 247 species of plants and animals that are rare, threatened, endangered or species of concern (state/federal)
- 7.5% (100,000 acres) of the NY-NJ Highlands is habitat for plants that are threatened, endangered or species of concern (state/federal)

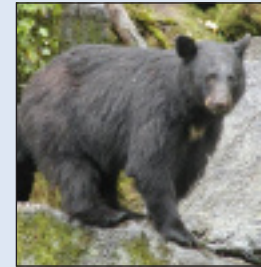
- 51% (720,000 acres) of the NY-NJ Highlands is habitat for wildlife that are threatened, endangered or species of concern (state/federal)
- 19% (282,000 acres) of the NY-NJ Highlands has received special status for having important natural communities and/or a high level of biodiversity
- 4,701 acres of rare plant communities in the PA Highlands
- The annual statewide amount (2006 data) spent on wildlife recreation is: PA–\$5.4 billion; NJ–\$1.7 billion; NY–\$3.5 billion; CT–\$873 million.

### Threats

- Fragmentation of landscape-scale habitat areas and wildlife corridors necessary for wide-ranging animals like bears and bobcats
- Loss of rock outcrops and ridges that fulfill special habitat requirements for species like the Eastern timber rattlesnake
- Competition with invasive and exotic species
- Stream degradation and water quality impacts from flooding, increased impervious surface and pollutants from cars, homes and businesses

### Strategies for Protection

- Habitat protection through land acquisition, conservation easements and donations from landowners adjacent to wild areas
- Increasing hedgerows for bird and small mammal habitat, reduced use of fertilizers, pesticides and insecticides and removing invasive species
- Enhanced landscape connections through greenways and corridors
- Ecological restoration through dam removal, riparian buffer improvements and flood plain restoration
- Sustainable agricultural practices preserving resource protection areas
- Local growth planning centered around towns, villages and Main Streets using cluster design and greater density allowances
- Outreach and education to youth and adults on how to respect natural habitat while enjoying them



### Species Spotlight

#### Black Bear

*Ursus americanus*

- Smallest of three North American bears
- Uniform individual color but can vary

- considerably from black to brown
- 2–3' tall at the shoulder, 4–7' in length
- Typically 150–300 lbs, but can be 500–600 lbs
- 20–25 year average lifespan
- Varied diet includes plants, fruit, nuts, small mammals and carrion
- Highly adaptable forest mammal occasionally inhabits more populated areas
- Mates during the summer, 1–6 cubs, weaned at 6–8 months
- Threats from habitat loss and fragmentation, poaching, and encroachment
- Found throughout the Highlands



### Species Spotlight

#### Timber Rattlesnake

*Crotalus horridus*

- NY State threatened
- NY's largest venomous snake (3–5' long)
- Found throughout the Highlands
- Active from late April to October
- Low reproduction rates; gives birth to 4-14 young late summer
- Average live span is 16-22 years
- May overwinter in hibernacula with copper-heads and other snakes
- Yellow phase—black or dark brown crossbands on a lighter background of yellow, brown or gray; black phase—dark crossbands on a dark background
- Killed actively with bounties paid by states
- Over collected for pet and curios



### Species Spotlight

#### Indiana Bat

*Myotis sodalis*

- Federal and state endangered
- 2"; 0.2 to 0.3 grams
- Dark grey to grayish-brown with pinkish nose
- Dormant during winter in caves with as many as 300 per square foot
- Found throughout the Highlands
- May disperse hundreds of miles from hibernacula
- Feeds on insects only
- Few nursery colonies (50-100 females) ever discovered, usually along stream banks
- Record age is 31
- Mates in August/September; one offspring
- 550,000 nationwide, 85% in just a few caves
- Disturbed by cave exploration and poisoning
- Management and protection focuses on winter hibernacula, when bats are most threatened