

We've Done it Before

Our conservation success stories remind us that we can turn around a gloomy scenario to a bright future. In 1976, the James River was too polluted for fishing on long stretches. Today, the river is much cleaner, people fish and recreate there again, and river stewards are working to prevent toxins from entering the river. We have a tremendous opportunity to repeat a success story as we reduce our individual impacts, and care for our precious natural heritage.

Teaming Up for Success

More than 50 groups helped to develop this strategy to safeguard the state's species of greatest conservation need from the effects of climate change. We now have guidance on actions to conserve wildlife and habitats, while research is underway and more comprehensive strategies are developed. The 2009 climate strategy fits within the Virginia Wildlife Action Plan of 2005—created to focus conservation efforts on preventing species from becoming endangered.



For more information

National Wildlife Federation
www.nwf.org/wildlifeandglobalwarming
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Virginia's Strategy for Safeguarding Wildlife from Climate Change



Prepared by:

National Wildlife Federation
Virginia Department of Game and Inland Fisheries
Virginia Conservation Network

Why Take Action Now?

What would Virginia be without brook trout rising for a fly? Or without thousands of waterfowl flocking into the Chesapeake Bay each fall? A changing climate affects all of our wildlife, and for certain species, the future is shaky. That's why members of Virginia's conservation community are taking steps now to conserve wildlife and habitats as climate change intensifies the existing threats to more than 900 species that are already at risk.

Climate change in Virginia is predicted to cause sea level rise; warm up our higher elevations; and alter rainfall patterns that in turn could limit our clean drinking water. We're already seeing some effects today. Virginia's human population is expected to grow by 23 percent in the next two decades and will put more demands on open space, drinking water and other resources. To conserve Virginia's wildlife and habitats will take creativity, innovation and a willingness to get involved.



This popular game fish likes its water cold. If the water temperatures rise above 70 degrees Fahrenheit, we will lose brook trout from much of its range.

Eric Engbretson, USFWS

Strategies for Restoring Healthy Populations in Healthy Habitats

Strengthen our Native Habitats

Eating and sleeping well helps us fight off colds and flu. Similarly, wildlife needs to be in tiptop shape to meet the challenging conditions brought on by climate change. The strategy identifies specific actions to restore health to our ailing habitats.

Northern Bobwhite

Restoring grass and shrublands
The call of the bobwhite is harder to hear these days with the dwindling of farmlands, grass and shrubs this bird needs for survival. In some cases, old farms have grown up into forests. Returning those lands to their historic past will offer hope for this popular bird, as well as other species at risk, including Bachman's sparrows, canebrake rattlesnakes, least weasels, and eastern box turtles. Restoration also benefits bees and other pollinators that are critical for farmers and their crops.

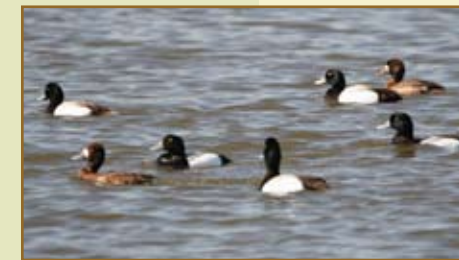


Steve Maslowski, USFWS

Fortunately, the *Northern Bobwhite Quail Action Plan* contains all the steps for success, including a coalition that works with private landowners. Putting that plan into action now will help these habitats be as resilient as possible in the face of climate change.

Chesapeake Bay Waterfowl

Climatic change already is affecting waterfowl that winter in the Chesapeake Bay. The eelgrass they depend on for food is in trouble



Greater Scaup/Donna Dewhurst, USFWS

from warming water, turbidity, and sea-level rise. To the north, waterfowl breeding grounds are drying up as drought hits the prairie pothole region of the Dakotas and southern Canada. Migration patterns are changing, too, as some ducks and geese stop in the Great Lakes instead of flying on to Virginia.

Link Wildlife Habitats Together

It's tough to live in a small patch of open space surrounded by houses without a safe way to reach the next patch down the road that might harbor better food, nesting grounds, or even a mate. Fragmented habitats are a huge challenge for Virginia's wildlife.

As Virginia's climate warms, animals slowly will shift their home ranges up to higher elevations or farther north, or inland from the coast. In order to move to new areas, wildlife will need corridors of lands and waters to follow. Biologists must identify which species will have to migrate to survive, determine the key habitat links, and then go about conserving or creating those travelways.

Eastern Spadefoot Toad

Linking burrows with wetlands
For this toad, traveling a few hundred yards from its burrow to a shallow pond can be as perilous as a journey of a hundred miles. Crossing roads can be deadly.

To conserve this declining species throughout its range takes maintaining its two specialized habitats, and safe corridors linking the two.

Eastern spadefoots need soft soils for their "spadefoot" hind feet to dig backwards and create a hiding place. After heavy rains, toads hop from burrows to fish-free waters to breed. These pools may be greatly affected by climate change—assuring enough of the right kind of wetlands persist will be critical. The females lay eggs in water. Tadpoles emerge as toads that seek the right kind of burrowing soil that is increasingly hard to find among lawns, pavement, and development.



Jason Gibson

James River - Healthy and Connected

Virginia's rivers are corridors of life and home to more than half of the wildlife species already at risk. The James River, flowing 340 miles across the state from the Allegheny Mountains to the Chesapeake Bay, forms a 10,000 square mile watershed that is critical for drinking water and habitat. Changes in rainfall patterns could result in greater flooding and runoff.



Brian Roosa

The number one challenge for the James River is the erosion of its shorelines, followed by pollutants such as herbicides and insecticides entering the water and making life tough for aquatic life. To bolster the health of the river will take buffering the river and tributary streams with native trees and shrubs. That buffer, called a riparian zone, also serves as a travel corridor for species. Restoring the riparian zone is a win-win solution that is underway today, and will need even more attention to succeed.

Move Some Endangered Species to New Homes

The blackbanded sunfish lives in isolated swamps and ponds. The future of this state endangered species in a changing climate may hinge on the ability of biologists to transplant the sunfish to new homes on private lands.

Protecting willing landowners from liability if a transplant fails or an accident occurs will take revising Virginia's Endangered Species Act to increase the variety of partnerships allowed by this important law. For the sunfish and other imperiled species where no habitat links are possible, moving them may be the only option.

Build New Partnerships for Conservation

How many partners does it take to conserve 900 species at risk, with the added weight of climate change? The answer? As many as possible. To better share the work and expand habitat restoration across land ownerships will take new resources and partnerships. For example, old mining lands could be reclaimed for habitat that will support loggerhead shrikes, American woodcocks, northern bobwhites, and other species in southwest Virginia.

Southern Tip Ecological Partnership

When agencies and groups came together to conserve migratory bird habitat on the Delmarva Peninsula, they succeeded in saving and maintaining some of the most phenomenal habitats on the Atlantic Coast. This partnership serves as an excellent model for conservation and a foundation for addressing climate change across Virginia's diversity of lands and rivers.

Expand Captive Breeding and Reintroductions

A warming climate can actually spell some good news for wildlife that adapt well to changing conditions. Biologists believe that a host of aquatic species will be able to tolerate warmer waters, from the blackbanded sunfish to the golden darter and the eastern lamp mussel. But many of these species inhabit isolated habitats.



Eastern Lamp Mussel/Brian Watson

The solution? Breed species in captivity and then reintroduce them into now unoccupied habitats suitable for their survival.