Unlocking Nature's Secrets


Tim Dellinger

Wood thrush with transmitter

By Kathy Leo

There is so much about the natural world that scientists, even in this brave new 21st century, have not yet discovered. The DNR Wildlife Diversity Program has, for the past several years, provided funding for perhaps some of the keys to unlock these mysteries.

Since the early 1990s, the Wildlife Diversity Program has solicited proposals from independent scientific researchers to gather information on the lesser known animal and plant species, and natural communities of the state. This annual competitive program, called the Research Grants Program, was designed to enhance our knowledge about the population status or natural history of animal and plant species. It also is meant to increase our understanding of the status of ecological communities that have been determined as in greatest need of conservation. The information gleaned from this research will aid DNR biologists in making informed conservation decisions to maintain these unique and valuable creatures and communities in the Mountain State for future generations to enjoy.

Highlighted below are just three of the dozens of research projects that have received DNR funds throughout the years.


Joe Greathouse

Dr. Michael Miller of Oglebay Institute inserts a transmitter into a hellbender.

How To Apply

If you are interested in submitting proposals for 2008, check the Wildlife Diversity Program announcements this fall on the DNR's Web site www.wvdnr.gov/ResCoopGrant.shtm for a list of priority projects. Deadline is December 1, 2007. A list of the 2007 projects is also listed.

Eastern Hellbender

In 2005 and 2006, a study of the habitat preference and winter ecology of the eastern hellbender was conducted at Buffalo Creek in Bethany, West Virginia, by Joe Greathouse, Curator of Animals for The Good Zoo at Oglebay. The eastern hellbender is the largest salamander species in North America; one specimen in this study measured 23 inches in length! This entirely aquatic salamander inhabits clean stream and river systems with large rocks from New York south to Alabama and west to Missouri. Although fearsome looking, especially when caught by an unsuspecting angler, they are harmless. Unfortunately, these creatures have suffered a severe decline all over the East, as well as in West Virginia, attributed mainly in this state to siltation, illegal collecting, predation from non-native trout, impoundment of streams and rivers, acid mine drainage, and coal mining.

During the course of this study, 70 individuals were captured, and five were implanted with tiny radio transmitters to monitor their movements in the stream. It was found that females move about the stream more than males, and that hellbenders remain fairly inactive in temperatures under 35 degrees. It was found that the home range (area where they breed, feed and reproduce) of females was greater than that of males (6,651 square yards to 385 square yards). The most notable of the many implications of this finding is that whole reaches of streams should be protected from pollution.

Result: This study found the first documented wild hellbender larvae in a West Virginia stream. Some of the females captured for the telemetry studies laid eggs which were later hatched at the Good Zoo, allowing for captive rearing studies. And finally, information cards on hellbenders were distributed to local anglers to educate them and ask them to report sightings of these unique amphibians.

If you encounter a hellbender, contact Joe Greathouse 304-243-4029 or email jgreathouse@oglebay-resort.com.

Crayfish

More than 350 species of crayfish inhabit North America, and West Virginia is home to 22 of those species. Studies have documented, however, that our native crayfish are declining, and scientists suspect the introduction of non-native crayfish is a major factor. Casey Swecker, a graduate student at Marshall University, undertook a study to sample crayfish at two locations -- one in the eastern panhandle in streams of Berkeley and Jefferson counties, and the other in the Kanawha River from Kanawha Falls to Point Pleasant. By comparing results of past surveys, Casey found that of the 460 crayfish collected in the Eastern Panhandle, 78 percent were the non-native northern crayfish, and that native crayfish species were much diminished. Similarly, of the 111 crayfish collected in the Kanawha River, an astounding 87 percent were the non-native northern and rusty crayfishes, again with much diminished populations of our native crayfishes. So how has this happened? It appears that the introduction of the non-natives were unintentional "bait bucket introductions." This means that anglers are discarding their live, unused crayfish they use for bait into the streams and rivers.

Casey Swecker

The rare Elk River crayfish is found only in the Elk River drainage of West Virginia.

RESULT: The researcher hopes that this study can be repeated to continue to track the advance of the non-native species and to educate anglers about the importance of not releasing live bait at the end of the day.

Joe Greathouse

Hellbenders are being monitored to check their movements in streams.

Wood Thrushes

The term succession is used for habitats and refers to the gradual replacement of one plant community by another. Early successional habitats are those that are relatively open, such as those caused by disturbances such as timber harvesting. These habitats are decreasing in the eastern United States as farmlands revert to forests or are developed. Wildlife species dependent upon this habitat, including many bird species, are also decreasing.

Tim Dellinger, a graduate student of West Virginia University, wished to study recently fledged wood thrushes. Wood thrushes are known to nest in mature forests. During three summers, Tim put tiny radio transmitters on 62 young wood thrushes two to three days before they left the nest. Then he monitored those birds to see where they went after leaving the nest. He also studied the habitat characteristics of the areas they frequented, and compared these to their survival. He found that while the young thrushes were still dependent on their parents for food, they preferred mature forests. Once they became independent, however, they migrated to early successional habitats, particularly large, older clearcuts. Survival didn't vary between forests and open lands, but the young birds did prefer dense cover. It was found that the open areas provided important food sources such as soft mast (berries).

RESULT: This study tells land managers that areas of early regeneration should be maintained as well as mature forests for wood thrushes, so that we may continue to hear their beautiful, ethereal flute-like song for years to come.

Kathy Leo is the Wildlife Diversity Program project leader stationed in Elkins.

Tim Dellinger

Tiny transmitters were also put on the backs of wood thrushes.