

West Virginia's Natural Heritage is endangered and **needs help to survive...**



Sleepy Creek

Harperella, the Wood Turtle, and Eastern Lampmussel have their own specific niches in the world and unique relationships to other plants and animals. They are part of the natural

heritage of Morgan County that attracts residents and visitors alike. As with all species, they possess a unique genetic and chemical makeup potentially valuable as a source of medicines and other beneficial uses.

Their rarity is a warning for us to protect what we have left of the natural diversity we all enjoy. Their extinction would eliminate forever their supporting roles in a healthy, diverse environment and their potential for providing unrealized benefits.

THREATS TO SURVIVAL

Habitat destruction and large-scale changes to streams like dams, sedimentation, and water pollution, impact Harperella, the Wood Turtle, Eastern Lampmussel and other plants and animals that depend on the creek.

Certain small-scale land management practices also threaten them, - off-road vehicle use, weed-whacking, and landscaping the riparian buffer.

HARPERELLA

Harperella (*Ptilimnium nodosum*) is a wildflower so rare it is found in only 10 places in the world. In West Virginia it is only found along Sleepy Creek and some sections of Cacapon River and Back Creek. Currently Sleepy Creek has the largest Harperella population in the country! It was placed on the US Endangered Species List in 1988. However, since it does not occur on any federal land it receives no direct



Harperella
(*Ptilimnium nodosum*)



Close up of Harperella

protection from federal management, and little to none from state management.

Harperella is a member of the carrot family resembling a grass until it flowers. It may have

medicinal properties as many other species in the same plant family do (e.g., hemlock, dill, horseradish). Harperella is an annual, herbaceous plant that looks like a small Queen Anne's lace with small white flowers and quill-like leaves that grow up to 16 inches long. The leaves get shorter as they get higher on the stem. It blooms in June and July and then dies back each year. Other plants growing in association with Harperella include azalea, mountain laurel, and holly.

Sleepy Creek's Harperella typically grows in rocky or gravel shoals and margins of clear, swift-flowing stream sections. Harperella is adapted to the annual rise and fall of stream waters. Seeds germinate, or broken pieces of the plant take root, during low summer flows. High winter and spring waters cover young plants, protecting them from cold and ice, and uprooting competitors. This plant is a relatively prolific annual, and large numbers may occur within each population.

Harperella survival appears to hinge on its adaptation to moderate, seasonal changes in the water level. This specific adaptation makes the plant very sensitive to environmental disturbances. Extremely high water level or prolonged flooding from increased runoff may wash away Harperella and its substrate. Low water level resulting from water diversions exposes Harperella to competition with plant species that thrive on drier ground. Harperella completes a full life cycle each year. In

Harperella grows where people enjoy summer activities that can cause unintentional damage to the plant.

the spring new plants grow from the seeds and vegetative buds dispersed the previous season. The ever-changing substrate of the stream bottom complicates new growth for Harperella. When the stream is flooded from heavy rains and melting snow, the gravel shoals and banks on which Harperella grows may be submerged, destroyed, or re-created in a different area of the stream. Harperella populations are rarely able to grow in the same location through many consecutive years; as its habitat shifts, so too does Harperella. This is also why transplanting Harperella to encourage new populations has met with very little success. The shifting of populations over time **necessitates protection of the entire stream and its watershed**, not just of Harperella's current habitat. Disturbances in and to the watershed directly impacts Harperella.

When the stream contains excessive silt or algae from nutrients, these pollutants are deposited on the Harperella during high water. As the water recedes, the plants are encased in dried mud or algae restricting photosynthesis and the plants die.

WOOD TURTLE

The medium-sized Wood Turtle (*Glyptemys insculpta*) is most easily recognized by the sculptured growth rings on each section of its carapace (shell). The carapace is usually a medium brown and occasionally has black flecks and faint yellow rays. The head is dark brown to blackish and unpatterned, and the skin on the neck and forelegs varies from pale yellow to orangish-red.



WOOD TURTLE (*Glyptemys insculpta*)

Wood Turtles are a semi-aquatic species that prefer moderate to fast-flowing clear water. The Wood Turtle is one of the most terrestrial turtles in the United States. They feed on insects, berries, greens, night crawlers, worms, and other invertebrates. They frequently bask on land and are less observable than other riverine turtles. Females often nest communally, and their eggs are heavily predated by other riverine dwellers such as muskrats and mink. Wood Turtles frequently bask on land and are less observable than other riverine turtles. Females often nest communally, and their eggs are often heavily predated.

Hatchlings are olive green to light brown with tails slightly longer than the carapace.

Turtles Are NOT Good Pets!
Turtles and other reptiles can be sources of Salmonella bacteria, especially in infants and younger children. Sale of baby turtles has been banned in the United States since 1975, but they are increasingly being sold again in recent years.

Researchers have observed Wood Turtles "stomping" for worms! This involves an individual stomping with one front foot several times and then stomping with the other front foot. Researchers speculate that the vibrations created by the turtle "stomping" the ground may mimic the vibrations produced by raindrops...worms surface during rainfall events. Once a worm surfaces, the Wood Turtle quickly gobbles it up.

The Wood Turtle is a generally long-lived species, reaching more than 33 years in the wild. Under natural circumstances the longevity of the Wood Turtle offsets the high nest and hatchling mortality and delayed sexual maturity (Wood Turtles do not reach sexual maturity until they are between 14 and 18 years). In recent times this balance has been upset because of habitat loss, highway mortality, and collection for the pet trade industry causing declines in adult Wood Turtle numbers. Additional pressures have also been placed on Wood Turtle nesting sites. Wood Turtles nest on sandy river banks. Which are also used quite heavily by



Wood Turtle retracting into shell

recreationists. Increased activity, particularly during the nesting season, may negatively influence

Get Assistance & More Info

Sleepy Creek Watershed Association
P.O. Box 991
Berkeley Springs, WV 25411
www.sleepycreekwatershedassociation.org

**Sleepy Creek Project Team,
Eastern Panhandle Conservation
District** 304-263-4376 Ext. 117
151 Aikens Center, Suite 1
Martinsburg, WV 25404
www.wvca.us

The Nature Conservancy
4245 N. Fairfax Dr., Ste 100 703- 841-5300
Arlington, VA 22203-1606
www.nature.org

**WV Division of Natural Resources
(WVDNR)**
1900 Kanawha Blvd, East 304-558-3315
Capitol Complex, Building 3, Room 663
Charleston, WV 25305-0660
www.wvdnr.gov

US Fish & Wildlife Service
1849 C Street, NW 1-800-344-WILD
Washington, DC 20240
www.fws.gov

Visit the SCWA web site for more resources
www.sleepycreekwatershedassociation.org

Membership and Renewal Form

Membership year is from January-December.
Dues should be paid by the first of the year.

Name _____

Address _____

City/State/Zip _____

Phone _____ Email _____

Individual — \$10 Group/Org — \$25

Family — \$15 Sponsor — \$100

Mail to: SCWA, Treasurer
P.O. Box 991, Berkeley Springs, WV 25411



Woody, the Wood Turtle

normal nesting behavior, as well as disturb nest sites.

Turtles and other reptiles can be sources of Salmonella bacteria, especially in infants and younger children. Sale of

baby turtles has been banned in the United States since 1975, but they are increasingly being sold again in recent years.

EASTERN LAMPMUSSEL

Lampmussels (*Lampsilis radiata radiata*) help filter both good and bad substances from the water. They are also food for river otters and other small mammals, as well as fish.

They are found worldwide, but the highest diversity occurs in North America. Of the 300 North American species, 12% (35) are thought to be extinct. Most of the remaining species are listed as *endangered* or *threatened*; about 25% of the North American species are thought to have stable populations across their entire range.

Freshwater mussels often have very specific habitat requirements, and thus are sensitive to habitat changes such as river damming and siltation. They also have a complex life cycle, as they rely on the availability of 'host' fish to complete their reproductive cycle. Thus, changes in fish populations can also affect mussel populations. In addition, a relatively new and unique threat has recently emerged for North America's freshwater mussels: the accidental introduction of a species from Europe called the Zebra Mussel. This species was first detected in the Great Lakes in the 1980s, and has since spread throughout much of central North America where it has caused dramatic declines in native freshwater mussel populations.



Open Eastern Lampmussel



Eastern Lampmussel (*Lampsilis radiata radiata*)

HOW YOU CAN HELP

Volunteer monitors survey various reaches of Sleepy Creek, Cacapon River, and Back Creek. Landowners, fishermen, canoeists, hikers, and many others help evaluate the health of these species.

Organizations involved in protecting these endangered species are the *Sleepy Creek Watershed Association*, Friends of the Cacapon River, and the Blue Heron Environmental Network. You can *become involved* by contacting these organizations.

Four Easy Ways to Protect Sleepy Creek Endangered Species

1. **Avoid weeding or mowing close to the streambank.** Maintain at least 3 feet, better still 10 feet, of buffer between your lawn and the water's edge.
2. **Do not permit use of all-terrain vehicles (ATVs) near streams or streambeds.**
3. **Avoid known habitats** of Harperella, the Wood Turtle, Eastern Lampmussel and other important species if you build, play, or swim in or near the stream.
4. **Establish Conservation Easements on your property** to create a legally enforceable land preservation agreement between you, the landowner and a qualified land protection organization (often called a "*land trust*"), for the purposes of conservation. It restricts real estate development, commercial and industrial uses, and certain other activities on a property to a mutually agreed upon level, but allows for continued agricultural use of the property as well as forest management and a single residence.



*Sleepy Creek
Watershed Association*
Protecting and Preserving Sleepy
Creek in Morgan County, WV

How to Protect Endangered Species in the Sleepy Creek Watershed

Harperella, Wood Turtles, & Eastern Lampmussels



A watershed is all the land area that drains to a given body of water.

We all live in a watershed!

This brochure was made possible through the generosity of the West Virginia Stream Partners Program (WV SPP). The WV SPP is a cooperative effort of DEP, DNR, the Division of Forestry, and the WV Conservation Agency.

P.O. Box 991
Berkeley Springs, WV 25411
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