

by John Schmerfeld

Reversing a Textbook Tragedy



Jess James/USFWS

Tan riffleshell

A recent sunny morning along the Clinch River was the setting for a homecoming years in the making. Local children, media, Fish and Wildlife Service staff, and conservation officials from Virginia Tech University and the Virginia Department of Game and Inland Fisheries (VDGIF) donned hip boots and waders as they released artificially propagated freshwater mussels into a crystal-clear section of river at Cedar Bluff, Virginia. Amid supportive smiles from observers on the riverbank, the group was on the latest leg of a journey that began one day seven years earlier.

On August 27, 1998, the Clinch River turned milky white from the release of over 1,600 gallons (6,060 liters) of a chemical used in foam rubber manufacture. A tanker truck had overturned on U.S. Route 460 and spilled its load into the river, ultimately killing an estimated 18,000 freshwater mussels as well as fish, snails, and other aquatic species. Among the dead were 750 individuals of three

endangered mussel species: the tan riffleshell (*Epioblasma florentina walkeri*), purple bean (*Villosa perpurpurea*), and rough rabbitsfoot (*Quadrula cylindrica strigillata*). One of the most significant kills of endangered species since passage of the Endangered Species Act, this incident was so tragic that it is now often referred to in textbooks. One of the three mussel species, the tan riffleshell, is so rare that it is now believed to exist only near the mouth of Indian Creek, a tributary of the Clinch River. The current total population for the species is estimated at about 400 individuals.

Under the authority of the Comprehensive Response, Compensation, and Liability Act of 1980 (Superfund) and the Clean Water Act, the Service may “assess injury to natural resources resulting from a discharge of a hazardous substance . . . and may seek to recover those damages.” Natural resource damage assessments (NRDA) are separate from the cleanup actions undertaken at a hazardous waste or spill site, and they provide a process whereby the natural resource trustees can determine the

These tanks hold the host fish needed by the endangered mussels during their parasitic larval stage.



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proper compensation to the public for injury to natural resources. The NRDA process seeks to: 1) determine whether injury to, or loss of, trust resources has occurred, 2) ascertain the magnitude of the injury or loss, 3) calculate the appropriate compensation for the injury, including the cost of restoration, and 4) develop a plan that will restore, rehabilitate, replace, and/or acquire equivalent resources for those resources that were injured or lost.

The Service's Gloucester, Virginia, Field Office Cooperative conducted studies of the resource damage between 1999 and 2002 under an informal funding and participation agreement with Certus Trucking, Inc., and with financial support from the Department of Interior. Disagreements that arose during the damage quantification phase forced the Department of Justice to file a complaint against the company in federal court in the fall of 2002. Working with Interior Department lawyers and Service staff, the company eventually agreed to a \$3.8 million settlement. The consent decree reached with Certus stipulates that the settlement funds are to be "...managed by the DOI for the joint benefit and use of the Federal and State Trustees to plan, perform, monitor and oversee native, freshwater mussel restoration projects within the Clinch River watershed..." According to the "The Final Restoration Plan and Environmental Assessment for the Certus Chemical Spill Natural Resource Damage Assessment," the settlement will be devoted to a 12-year program to help restore native freshwater mussels in the Clinch River.

The injury assessment and damage determination focused on sediment toxicity testing and analytical chemistry within the spill area. Based on data from these studies, Virginia Field Office staff determined in 2003 that river sediments had sufficiently returned to background levels through natural attenuation and were once again able to support freshwater mussels. These data gave the green light to the mussel release program, which kicked off in the fall of 2005.

Landowners York and LaRhonda Lindsay watched last fall's release as officials credited them and many town residents with supporting the efforts of the DGIF, the Service, Virginia Tech, Cedar Bluff town officials, The Nature Conservancy, the Clinch River Headwaters Association, the Tazewell County Soil and Water Conservation District, and other groups in pressing for the settlement and its use in restoring the Clinch River's natural resources.

Cedar Bluff's Town Manager, Jim McGlothlin, said the DGIF and the Service have worked in a low-key manner to reach a point where repopulating the mussels is possible. "I've been impressed with how well they've worked with property owners," McGlothlin said. "Cedar Bluff's citizens have been very pro-environment. This is a very historic town, and we don't have a lot of large business and industrial development, so our cultural, historic, and environmental heritage is very important to us."

The key to this and other mussel restoration projects in Virginia has been the development of mussel-breeding techniques over the past two decades by Dr. Richard Neves of the U.S. Geological Survey's Cooperative Research Unit at Virginia Tech in Blacksburg, Virginia. His work, and that of several other researchers around the country, has been supported through Endangered Species Act section 6 grants and Service funding from Regions 4 and 5.

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"They've been great to work with," LaRhonda Lindsey said of the habitat restoration partners at the release event. "We've only been here since April, but we're trying to learn and help keep the habitat as it should be. I thought today was very interesting."