

Tennessee Freshwater Mollusk Strategic Plan

Draft Vision Statement and Statement of goals, plan elements, and tasks

Background

The state of Tennessee has historically supported 129 of the nation's 300 native freshwater mussel species (Order: Unionoida; Parmalee and Bogan, 1998), making it the second-most species-rich mussel fauna of any state (Williams *et al.*, 2008). Unionoid mussels are proportionally the most imperiled group of animals (fauna) in the state of Tennessee and in the United States. The dramatic demise of this fauna nation-wide has occurred since industrial development and modification of rivers during the last century, resulting in the extinction or significant decline of over 70% of these species (Williams *et al.*, 1993). Within Tennessee, the U.S. Fish and Wildlife Service has listed 40 mussel species as endangered under provisions of the Endangered Species Act of 1973 (USFWS Environmental Conservation Online System accessed 04 Nov 2009).

Recognizing the plight of mussels and their habitat, a consortium of expert biologists from government agencies, academia, and private and public sectors formed the National Native Mussel Conservation Committee and published a National Strategy for the Conservation of Native Freshwater Mussels in 1998 (= National Strategy [NNMCC, 1998]). The purpose of the National Strategy is "to conserve our nation's freshwater mussel fauna and ensure that the ecological and economic values to society are maintained at a sustainable level." Its primary goals are to 1) identify necessary conservation actions, 2) increase education, support, and funding, and 3) foster partnerships to facilitate the restoration of the nation's mussel fauna and environmental quality of its rivers. As recovery and conservation efforts for mussels evolve on a national scale, the state of Tennessee must manage a particularly diverse mussel resource that is subject to many of the same environmental pressures contributing to the mussel declines nationwide (*e.g.*, dams, stream channelization, mining runoff, agricultural runoff, and various sources of water quality degradation).

The Tennessee Wildlife Resources Agency (TWRA) and the USFWS are the regulatory bodies primarily responsible for conservation and management of Tennessee's mussels and other biological resources. These agencies must collaborate with other agencies, and the public to implement, fund, and ensure effective resource stewardship. These cooperative efforts have resulted in the development of various tools and publications available to help guide recovery and conservation efforts of mussels, including the Tennessee State Wildlife Action Plan (TWRA, 2005), a Plan for the Controlled Propagation, Augmentation, and Reintroduction of Freshwater Mollusks of the Cumberlandian Region (Cumberlandian Region Mollusk Restoration Committee, June 2009 draft), and natural heritage databases (Tennessee Department of Conservation, Tennessee Valley Authority, USFWS). However, none of these references provides a comprehensive and cohesive plan that focuses on all aspects of mussel recovery and conservation, like that framed by the National Strategy, with the goal of guiding overall conservation efforts for native freshwater mussels in Tennessee. The Tennessee

Freshwater Mollusk Strategic Plan (Strategic Plan) will utilize the products of previous and current planning efforts and cooperative input from regional mussel experts and the public to produce a comprehensive, adaptive, and effective strategy for the recovery and conservation of Tennessee's native freshwater mussels.

Vision Statement

The vision of the Tennessee Freshwater Mollusk Strategic Plan is to conserve Tennessee's freshwater mussel fauna and ensure its ecological function in perpetuity. The specific goals of the Strategic Plan follow.

1. Identify and protect high quality freshwater mussel and snail habitat.
2. Identify and prioritize historic mussel and snail habitats in need of restoration.
3. Facilitate responsible and coordinated reintroduction, augmentation and propagation efforts and support the state and regional facilities needed to achieve these activities.
4. Maximize efficiency of and increase capacity for freshwater mollusk recovery and restoration.
5. Foster partnerships that support the conservation and stewardship of native mollusks in Tennessee among State agencies, Federal agencies, and the public

Identification of goals, plan elements and tasks

Goal 1:

Identify and protect high quality freshwater mollusk habitat.

Plan Element 1.1:

Develop a process to identify the highest quality habitat and work towards protection of that habitat.

Task 1.1:

Develop a watershed level prioritization of freshwater mollusk resources and habitats. This will also include any needed stress abatement strategies.

Goal 2:

Identify and prioritize historic mollusk habitats in need of restoration.

Plan Element 2.1:

Develop a process to identify historical habitats most suitable for restoration efforts.

Task 2.1:

Watershed level prioritization of habitat restoration efforts. This will include site selection criteria, stress abatement strategies and identification of potential stakeholders willing to support such efforts.

Goal 3:

Facilitate responsible and coordinated reintroduction, augmentation and propagation efforts and support the facilities needed to achieve these activities.

Plan Element 3.1:

Develop a process to identify the areas most suitable for reintroduction, augmentation, and propagation. (Note-this is already done in the Cumberlandian plan).

Task 3.1:

Watershed level prioritization of reintroduction, augmentation and propagation efforts (rearrangement of information found in Cumberlandian plan).

Goal 4:

Maximize efficiency of and increase capacity for freshwater mollusk recovery and restoration.

Plan Element 4.1:

Increase capacity for freshwater mollusk recovery work in Tennessee by providing a platform for coordinated efforts.

Task 4.1:

List strategies for increasing available funding and awareness of the need of freshwater mollusk recovery in Tennessee.

Goal 5:

Foster partnerships that support the conservation and stewardship of native mollusks in Tennessee among State agencies, Federal agencies, and the public.

Plan Element 5.1:

Develop implementation strategies that encourage multi-party collaboration at the project level

Task 5.1:

List of strategies with appropriate coordinating agencies and NGO's.

Task 5.2:

Prepare and sign an MOU/MOA among all interested parties