Bringing Aquatic Invasive Species Management to Life: An Interactive Exhibit at Raystown Lake

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At Raystown Lake in Pennsylvania, aquatic invasive species (AIS) management is a complex topic that can be difficult to explain to the public, especially when treatments occur underwater and out of sight. Through a recent collaborative project funded by the Mid-Atlantic Panel on Aquatic Invasive Species, staff from USACE's Raystown Lake Project and students and faculty from Juniata College developed an innovative educational tool that makes the invisible visible.

The result is a portable, interactive exhibit that visually demonstrates how AIS is managed in the lake, helping visitors understand the treatment process, the ecological benefits of management, and the role visitors play in preventing the spread of invasive species. Just as importantly, the design and materials were intentionally created so that other natural resource specialists could replicate the concept at their projects.

For over 10 years, natural resource specialists at Raystown Lake have been actively monitoring and managing hydrilla (*Hydrilla verticillata*), one of the most aggressive aquatic invasive plants in North America that poses a growing challenge for lake managers across the country. Once established, hydrilla can grow at a rate of two inches per day, forming dense underwater mats that outcompete native vegetation, alter aquatic habitat, restrict boat navigation, and interfere with recreation and water management operations. Because it spreads easily through small plant fragments transported on boats, trailers, and fishing gear, hydrilla can rapidly move between water bodies if preventative measures are not taken.

To resource managers, the benefits of treating hydrilla are obvious, but helping visitors to understand the "why" behind these treatments has proven more challenging, which prompted the creation of this educational tool.

The exhibit features three aquarium tanks mounted on a mobile cart, each representing a different stage of hydrilla management:

- Pre-Treatment Conditions – illustrating dense hydrilla growth on the lakebed.
- Treatment Phase – demonstrating how slow-release herbicide pellets target hydrilla rather than broad liquid applications.
- Post-Treatment Conditions – showing reduced hydrilla, the return of native aquatic vegetation, and the addition of fish habitat structures.

Inside each tank are 3D-printed models of the lakebed, hydrilla, native aquatic plants, fish habitat structures, and both recreational and treatment boats. Undergraduate students

from Juniata College helped design and print these components, making the project a learning opportunity for both students and visitors. Interpretive signage accompanies each tank, explaining how targeted treatments work and why they are necessary to maintain healthy aquatic ecosystems and recreational opportunities. Because the exhibit is mounted on a mobile cart, it can be transported to community events, visitor centers, classrooms, and boat launches.

During summer 2025, the exhibit was used at six community events and environmental education programs, as well as outreach efforts near boat launches around Raystown Lake. The tanks will also be incorporated into future programming, including a permanent Visitor Center display, K-12 outreach conducted by USACE staff, summer environmental education internship programs, and college-level courses at Juniata College Raystown Field Station. Together, these settings will allow the exhibit to reach broad user groups at Raystown, including boaters, fishermen, students, and local community members-all key audiences for AIS prevention messaging.