



AQUATIC NUISANCE SPECIES PROGRAM

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Aquatic nuisance species (ANS) are invasive animals, plants, and disease-causing pathogens that can affect the state's reservoirs, rivers, lakes, streams, and wetlands. These species are introduced accidentally or intentionally outside of their native habitat range. Because these nuisance species are not native to Colorado habitats, they have no natural competitors or predators, which allows them to reproduce rapidly and out-compete the native species. Once introduced into a habitat, most nuisance species are difficult to eradicate, and the cost of managing nuisance species is often high.

Zebra and quagga mussels are ANS that pose a significant threat to aquatic wildlife and water quality in Colorado. Due to their hard shell and ability to rapidly reproduce, these species are capable of clogging water facilities and impairing the operation of dams, water treatment facilities, and power plants. This *issue brief* provides an overview of the ANS program, and offers current data and statistics regarding ANS in Colorado.

Presence of ANS in Colorado

Zebra and quagga mussel larvae were identified in eight reservoirs in Colorado in 2008 as a result of a multi-year statewide sampling effort. Pueblo Reservoir tested positive for zebra or quagga mussel larvae in 2007-09 and 2011, but currently is considered negative for ANS. In August 2017, as a part of the monitoring process of the ANS program, specialists within the U.S. Bureau of Reclamation confirmed the presence of quagga mussel larvae in Green Mountain

Reservoir. However, Colorado has largely prevented the introduction of the species through watercraft inspection and decontamination staff, as well as monitoring, education, and enforcement actions.

Colorado Aquatic Nuisance Species Program

In 2008, the General Assembly passed the State Aquatic Nuisance Species (ANS) Act (Senate Bill 08-226). The act defines aquatic nuisance species as exotic or nonnative aquatic wildlife or any plant species that have been determined to pose a significant threat to the aquatic resources or water infrastructure of the state. The act makes it illegal to possess, import, export, ship, transport, release, plant, place, or cause an aquatic nuisance species to be released into a body of water in the state. Additionally, the act created ANS programs in the former Division of Wildlife and Colorado State Parks, now Colorado Parks and Wildlife (CPW).

The ANS act provides authority to qualified peace officers or authorized CPW agents to inspect and, if necessary, decontaminate or quarantine watercrafts that carry nuisance species. The CPW board passed regulations required by the act in February 2009, and updated them in 2015 and 2016. These rules set the standard for watercraft inspections, decontaminations, impoundments, sampling, monitoring, identification, and reporting for the ANS program.

Watercraft Inspection and Decontamination

Watercraft inspection and decontamination are requirements of the ANS program and are important in preventing the spread of ANS into and within Colorado. Standardized watercraft inspection and decontamination protocols have been implemented at a variety of inspection stations throughout the state to provide opportunities for boaters to comply with the mandatory inspection regulations. Inspection and decontamination station locations include:

- infested lakes and reservoirs;
- state offices convenient for entry into the state;
- private industry locations, such as marine dealers;
- high-risk noninfested waters; and
- mobile watercraft inspection and decontamination units targeting random lakes and reservoirs.

CPW coordinates the network of inspection and decontamination stations, which are operated by CPW, the National Park Service, Larimer County, various municipalities, and private entities. CPW provides site-specific planning; training and certification; law enforcement support; educational materials; and cost-sharing opportunities. In total, the state has collectively performed over 3.7 million inspections and 67,526 decontaminations since the creation of the ANS program in 2008.

Mussel Boat Interceptions

According to CPW, the program has intercepted 136 watercraft with adult zebra or quagga mussels attached since 2008. In 2016, there were 22 watercraft intercepted with zebra or quagga mussels attached, the highest number of watercraft since the program's induction. So far, in 2017, 18 mussel-infested watercraft have been intercepted. The majority of the intercepted vessels are from Arizona and the Great Lakes region, according to data provided by CPW. These boats were found throughout the state, including at Blue Mesa Reservoir, Boulder Marine, Canon Marine, Carter Reservoir,

Chatfield Reservoir, Lake Dillon, Horsetooth Reservoir, Pueblo Reservoir, and Williams Fork Reservoir.

Sampling and Monitoring

CPW staff monitors the state's public waters for numerous ANS, although the focus of sampling is on early detection of zebra and quagga mussels. CPW has sampled 584 "at-risk" waters over the last ten years, and it is through this sampling that ANS were first detected in Colorado.

CPW uses three steps to identify, verify, and confirm identification of zebra or quagga larvae, including visual analysis of plankton tows, DNA verification, and DNA confirmation. In addition to the sampling efforts performed by CPW, the National Park Service and U.S. Bureau of Reclamation contribute to the sampling and monitoring process. CPW utilizes an online ANS sampling and monitoring database. This system allows the tracking of a sample from collection to final identification and enables CPW to communicate with reservoir owners and managers regarding efforts in specific bodies of water.

Operations and Funding

The ANS act created the Division of Wildlife Aquatic Nuisance Species Cash Fund within the state treasury and authorized funding toward the prevention, containment, and eradication of ANS in Colorado waters. The funding was originally a combination of moneys from the Wildlife Cash Fund and the Operational Account of the Severance Tax Fund. However, due to reduced severance tax distributions, the ANS program is no longer receiving the full appropriation as authorized in the act. CPW has used agency funds and federal and local grant funding to maintain the ANS program's operations.