



## Connecting the Drops

Transcript: Aquatic Nuisance Species

October 2017

Aquatic Nuisance Species can wreak havoc on ecosystems, outdoor recreation, hydroelectric power equipment and the economy so when dreaded mussel larvae were discovered at Green Mountain Reservoir in August state leaders sent a plea for help all the way to the Whitehouse. As part of the Connecting the Drops series, KGNU's Hannah Leigh Myers joined a Colorado Parks and Wildlife team as they took samples at Green Mountain Reservoir in an effort to ward off the keep Colorado waters safe from threatening species.

Colorado Parks and Wildlife define an aquatic nuisance species as:

“A non-native species that has been introduced to a new location, has no predators and has harmful impacts on our natural resources and the human use of those resources.”

Robert Walters is the Invasive Species Specialist for CPW which tests 6 to 12 reservoirs a day, multiple days a week using between 600 to 700 boat inspectors each year in an attempt to stop the aquatic nuisance species' primary means of transmission...boaters. According to Walters, since 2008 CPW's Invasive Species Department has monitored and worked to ward off many types of ANS but one species is particularly worrisome.

“The zebra and quagga mussel are certainly the most concerning to us. Those are the most costly invasive species in the entire United States.”

Until recently Colorado was 100% negative for those species. But in August, Bureau of Reclamation samples discovered quagga mussel larvae in Green Mountain Reservoir near Silverthorne. If the larvae, also called veligers, are able to reproduce, Walters says it's unlikely CPW will ever be able to get rid of them ... so aggressive investigation is necessary.

“What we don't know at this point is how those veligers ended up in the reservoir. Are they coming from a population we haven't yet detected or did they come in on a boat so that's what we're out here trying to figure out.”

Since then small teams of CPW researches like this one have collected over 100 additional samples looking for the quagga mussel.

On this October morning, a CPW team collected samples across Green Mountain Reservoir with Nathan Anderson leading the team.

“So what Erin is doing right now is she's going to throw in this net, we're going to do this five times. She'll pull it up and re-drop it five times and what this net is doing is filtering the plankton out of the water and we will put the remaining plankton into a bottle and we'll put a label on it and we'll bring it

back down to Denver where we will look at it under a microscope and look for these veligers, the microscopic version of these quagga mussel that were looking for.”

Thus far all the samples have been negative, but Robert Walters says there is a lingering anxiety about the mussel considering their devastating effects on hydroelectric power systems like Lake Powell.

“There's all types of different gates and things that the water has to pass through in those hydroelectric systems and when those get clogged up with the mussels then they basically have to shut down those hydroelectric systems and they have to bring in specialized divers and things to actually come in and clean those systems out before they can get them up and running again.”

And that is incredibly expensive. Between 1993 and 1999 the power industries in the Great Lakes region spent \$3.1 billion trying to manage getting the muscles out of their system.

“And something the public should also think about is do you really think that the power industry just absorbs all those cost. Not a chance! There passing that down to each and every person that's using that power in their house so everybody really does pay for this if it ends up being a problem.”

In addition to the damage caused to hydroelectric power systems, quagga mussel populations filter vital plankton down to the bottom of bodies of water. CU Boulder’s Director of the Natural History Museum and Professor of Ecology and Evolutionary Biology, Pat Kocielek, says that completely changes the ecosystem.

“The fishes that live in the system and the other invertebrates, they evolved to be in this plankton dominated environment. So when it turns to be a benthic environment dominated environment, how did those species adapt? Where do fish get there food? That's the important piece here. It's not that the algae has changed it's that the entire system changes and the organisms that have to respond to those changes might not be able to do that in a conference in a fast time frame.”

In September Representative Jared Polis and nearly every member of Colorado’s congressional delegation signed a letter to Secretary of the Interior Ryan Zinke, that Polis says asked for aid and collaboration to help the state successfully combat the quagga mussel.

“There are areas of our country that have been facing this for well over a decade and we need to take that knowledge and what worked and what hasn't worked and focus those resources on Green Mountain Reservoir in Colorado to prevent further damage to our water ecosystems.”

Overall, CPW’s ANS program costs CPW nearly 4.5 million dollars a year, a miniscule investment when compared to the environmental, recreational and financial damage an ANS infestation can cause. As state lawmakers and agencies launch into the fight against the quagga mussel, it remains true that just one contaminated object that skips the decontamination process can sabotage the entire effort. So, it’s up to Coloradans of all sorts to keep aquatic nuisance species out of the state.