

## Northern Snakehead Discussion With Allison Colden

### **Dr. Allison Colden**

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### **Background Information:**

Throughout this interview we will discuss information regarding the Northern Snakehead and other invasive species in Maryland waters. Questions surround educational opportunities, government actions, effects of climate change, consumption, and environmental impacts. Our aim is to educate on the prevention of invasive species, and what the impact of the Northern Snakehead are in Maryland.

### **Interview:**

**Q:** Are there any educational programs/opportunities for youth to learn more about the impact of invasive species? If so, are there any surrounding the Northern Snakehead?

**Dr. Colden:** There are many resources for students to learn about invasives, however I haven't personally heard of many relating to snakeheads. The Maryland department of Natural Resources has an aquatic invasive species education kit which covers grades K-12. The species included in these lessons are green crabs, hydrilla, didimo, asain tiger mosquitoes.

**Q:** What should be done with a caught snakehead?

**Dr. Colden:** If you catch a snakehead and you do not intend to harvest, you must release it into the same body of water that you caught it from. If you intend to keep it, you must kill it. This is because snakeheads can survive out of water for several days, so we want to prevent snakeheads from spreading among water bodies.

**Q:** Does climate change and a rise of water levels in the bay area impact the northern snakehead or other invasive species either positively or negatively?

**Dr. Colden:** Specific to the snakehead and also relevant for catfish, one of the climate impacts is the increase and intensity of rain events and precipitation. 2018 was the wettest year on record. This increased rainfall reduces the salinity in the Maryland portion of the bay, and because both snakeheads and catfish are freshwater species, the decreased salinity allows these invasive species to explore and invade new areas. Also as water warms, it holds less oxygen than cold water, so it can be expected that native fish species could struggle and get outcompeted by the snakehead,

who are adapted to lower oxygen conditions. Overall, climate change is likely to allow for the expansion of snakeheads and other invasive fish species in the bay.

**Q:** Are there any opportunities to experience population surveying or tagging events of invasive species around the area?

**Dr. Colden:** I'm not sure if there are surveying opportunities, but there are some efforts related to citizen science, they are looking for members of the public to collect data and get that data to management agencies who track and manage snakeheads. A couple of resources are the Maryland Department of Natural Resources provides a volunteer angler's survey, which is an online google form which you can use to fill data about the kind of species, size of fish and where you caught it. There's also a snakehead tagging program that's run by the US Fish and Wildlife service, so if you find a snakehead with a blue or red plastic tag, there's a reward associated with that, and there's a phone number on the tag which you should call if you find that tagged fish. It helps those researchers better understand where the fish are located, and what they're eating, and the size of the fish. The last one I'll mention is a fun one, the great chesapeake invasives count, which is a citizen science initiative run by coastal conservation association Maryland, which is a recreational fishing organization. If you upload your catch of invasive fish to their tournament website, you can win some really cool prizes.

**Q:** Are there other species of invasive fish which pose a greater threat to the bay and its rivers than the Northern snakehead? (Potomac River, Anacostia River)

**Dr. Colden:** An equivalent threat, maybe even a greater threat might be the invasive catfish species such as blue catfish. Blue catfish in particular was introduced into the bay in the 1970's in virginia to try and establish a recreational fishery for those species. Since then they have expanded into basically every tributary of the chesapeake bay including the potomac. Catfish are very similar in their impact (to snakeheads). They feed a lot on larvae and juvenile fishes of important species along the chesapeake bay. They feed on blue crab, river herring, chad, juvenile catfish.

**Q:** Are there any informative signs about handling and identifying invasive species around local waterways?

**Dr. Colden:** Not aware of any specific locations with signage but I do have a link to a couple of infographics and fact sheets that I can share with you that have good information that would probably make a good sign if that was one of the recommendations you needed to make.

**Q:** What existing incentives are in place to help keep the population of Snakehead/other invasive fish in check?

**Dr. Colden:** For one, Snakeheads taste very good and people like to eat them, which should incentivize fishing. To try and incentivize professional anglers, snakeheads have no catch limit, there's no minimum size, and you can catch them year round. Unlike some native species where we try to maintain the population, with snakeheads we're trying to get as many of these fish out of the bay as possible.

**Q:** Are any primary food sources for humans affected by the over-predation of native species?

**Dr. Colden:** They've been found to eat light perch, striped bass, blue crabs, small clams and oysters. Decreasing numbers of this type of prey isn't only worrying for people who like to consume them, but for other predatory native species who need this type of prey to survive.

**Q:** What's the most important thing an average person can do to prevent the spread of the northern snakehead?

**Dr. Colden:** The most important thing is to not transport an invasive species. People shouldn't exacerbate the spread in an at risk area. When you put your boat in a certain place, there are some invasive species that can attach to it, traveling with you from each body of water you go to. Make sure to rinse boats down to reduce the risk of this. Also, don't dump unwanted aquatic pets into the water. We think that's how snakeheads came to be in the Chesapeake Bay watershed.

**Q:** Do you recommend any other resources that we should look into in terms of the Northern Snakehead or any other prominent invasive fish?

Mid Atlantic panel on aquatic invasive species, they've funded research and could be very helpful.