

Fishzilla: Managing the Northern Snakehead in the Potomac River Watershed



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Introduction

The management of aquatic invasive species has always posed a problem for government officials. Aquatic ecosystems are not easily studied or maintained. This leaves officials with solving the problem of how are these invasive species to be controlled if controlled at all? The northern snakehead, *Channa argus*, is one invasive species that has made a splash with the media in recent years. The hype surrounding the northern snakehead has only served to highlight the issue with aquatic invasive species management and has also shown how outside factors, like negative press, have the potential to negatively influence management options. The management of the northern snakehead needs to more accurately reflect the fact that the fish cannot be eradicated from the Potomac River tributaries.

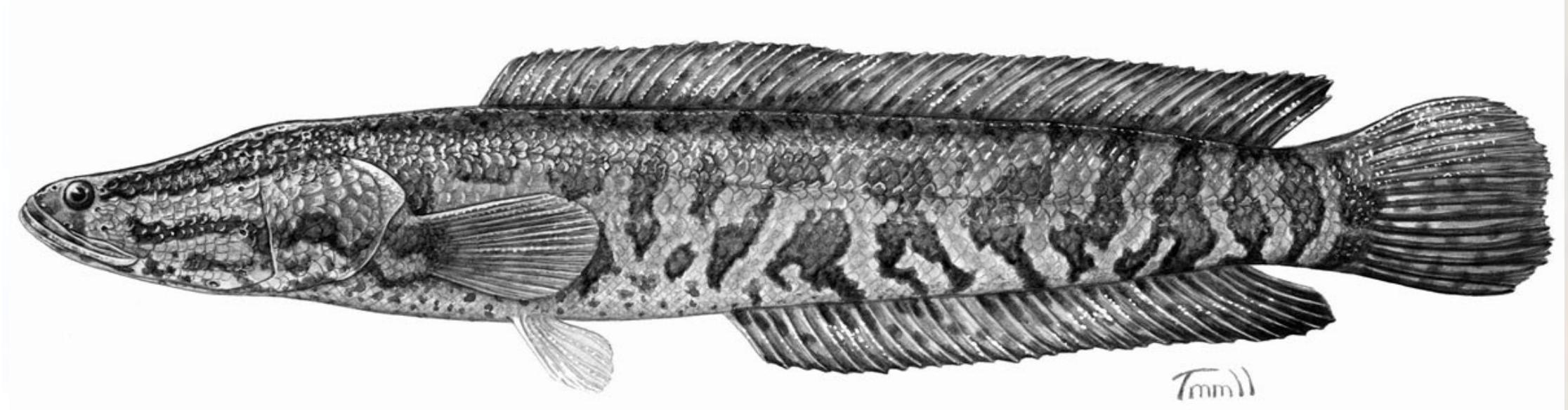


Figure 1. Artist portrayal of the northern snakehead by Susan Trammel.
Artist depiction details notable characteristics of snakehead.



Figure 2. Two photos of the northern snakehead uploaded to the Maryland Department of Natural Resources website as part of a contest. These photos highlight some of the key traits that make the northern snakehead a top level predator. The image on the left displays the fish's teeth and the image on the right portrays the fishes aerodynamic shape and large fins.

References

Dolin, Eric Jay. "Snakehead : A Fish Out of Water." Washington, D.C.: Smithsonian Books, 2003.

U.S. Department of the Interior. "Snakeheads (Pisces, Channidae)—A Biological Synopsis and Risk Assessment", by Walter R. Courtenay, Jr. and James D. Williams. Open-file report, U.S. Geological Survey circular, 1251, 2004.

Methods

Chemical, mechanical, and biological control methods were evaluated based on previous attempts to implement them against other invasive species and how effective they would be in the current habitat occupied by the snakehead. A brief overview of these methods can be found in the Environmental Protection Agency's Invasive Species Rapid Response and Management Plan guide.

- Chemical controls, like poison, kill non-target species.
- Mechanical controls, such as fishing with rod and reel or electrofishing, are more eco-friendly and target species are easily identified and eliminated.
- Biological controls refer to parasites, diseases, or predators of an invasive species that may be introduced to try and eliminate that species. This method usually carries more risks than benefits as the biological control may become an invasive species.

A newspaper article analysis was also conducted to convey a sense of the negative press associated with the snakehead invasion to determine whether or not public opinion affected how the species was managed. The articles were selected from papers on the East Coast as well as several from Canada. Each article was rated on the number of false facts, gross exaggerations, and words associated with the northern snakehead that are usually reserved for creatures from horror films.

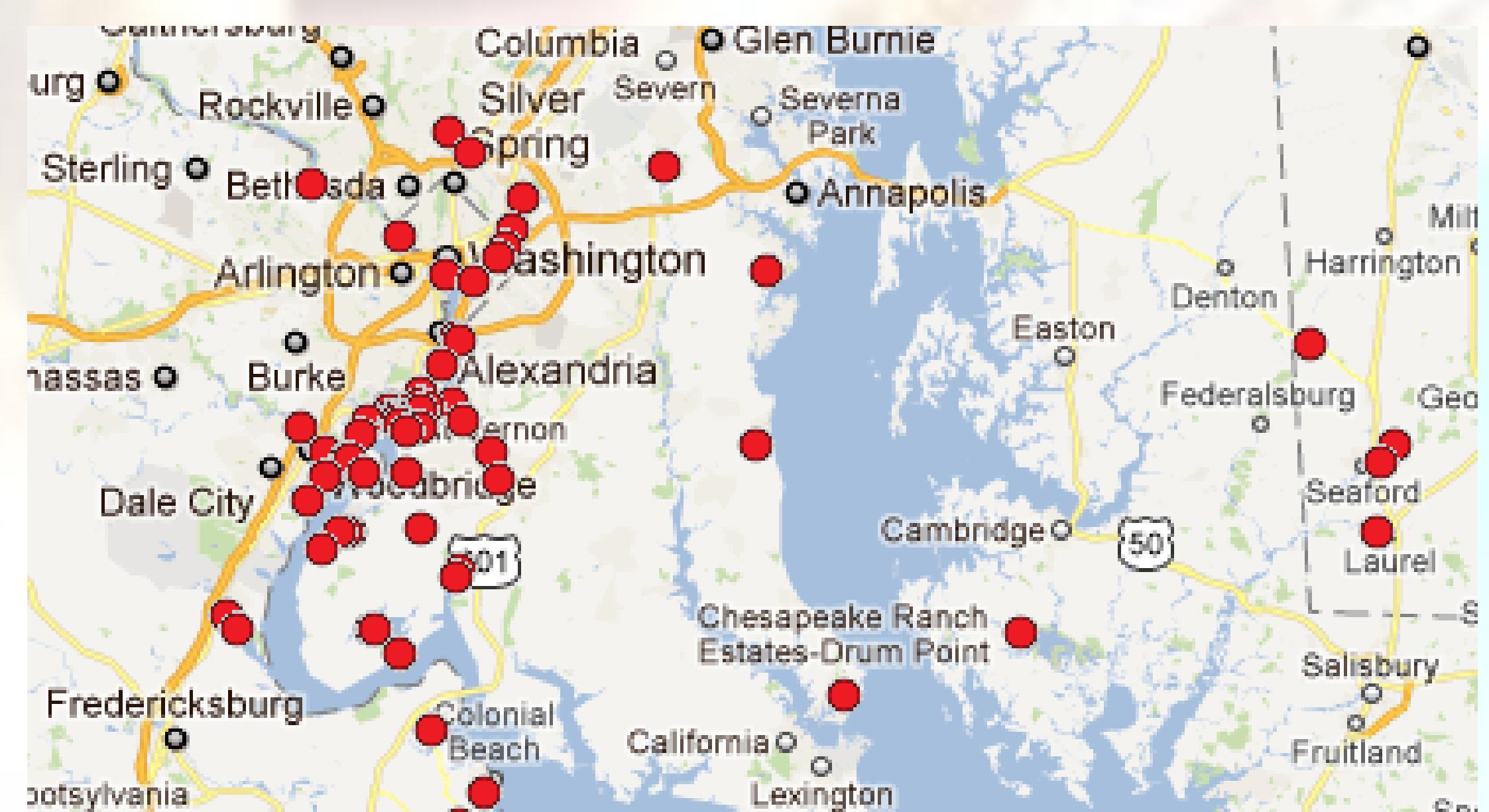


Figure 3. Established northern snakehead populations in the Potomac River Watershed.

A. J. Benson 2011. Northern snakehead sightings distribution. <http://nas.er.usgs.gov/taxgroup/fish/northern-snakehead-distribution.aspx>. (retrieved April 1, 2012).

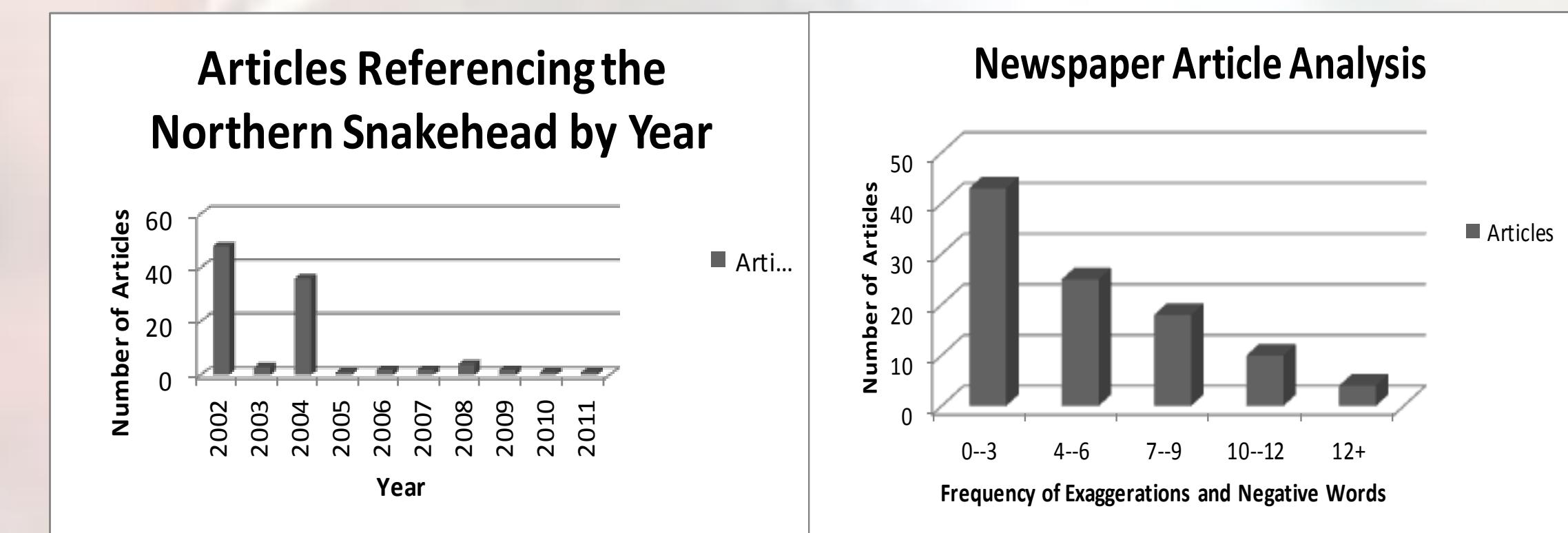


Figure 4. Results of the newspaper article analysis. The large spikes in 2002 and 2004 represent the discovery of the northern snakehead in Crofton, Maryland and the Potomac River respectively. The large volume of low occurrences of negativity in the graph on the right fails to represent the high rate of misprinted facts about the snakehead.

Results

After reviewing the control methods for managing invasive species it was determined that mechanical control is the only safe, effective option. Chemicals have a bad track record in open systems like the Potomac River and would cause more harm than the snakehead would. Most aquatic biological controls that have been attempted have ended in failure or the biological control ends up becoming an invasive species that was worse than the species trying to be controlled. Mechanical control is limited in scope, but it is safe for the Potomac ecosystem.

Conclusion

The only viable control method for the northern snakehead in an open system like the Potomac River is mechanical removal. Promoting the northern snakehead as a sport fish with no regulations placed on it will be one of the best methods of control. Virginia and Maryland can continue to electro fish, but the heavy vegetation that the northern snakehead prefers reduces the effectiveness of the electrical charges. Angling is now the most effective means of control and both states would do well to capitalize on that fact. The newspaper analysis showed that most articles displayed a decent amount of negative and false information regarding the northern snakehead. Even as recently as April 2012 newspapers and magazines are still printing articles detailing the snakehead's ability to walk on land, eat species into extinction, and survive out of water for four days. Newspaper articles need to focus more on the hard facts instead of selling papers via propaganda.