

## Can we contain the Aquatic Outlaws?

Have you heard about the 23 foot long, 200 pound Burmese python that was caught in Florida? Now that's a big snake. Unfortunately, the snake isn't native to Florida and is causing a huge environmental and economic impact on the Florida Everglades Ecosystem. This snake will eat anything from birds, to alligators to people's pets and is a top predator.

Sadly, the Florida Everglades is not the only place that you will find exotic invasive species. The Chesapeake Bay watershed is also home to over 200 species that aren't native. Because the Bay is a great place to visit and it is the hub of many economical products, our waters have been affected by a growing trend of nonnative species. These species are taking over our bay and have had a huge impact on our aquatic habitats as well as our native species such as crabs, rockfish, menhaden, shad, oysters and mussels.

The Maryland Scientific community has identified 12 aquatic plants and animals as the primary threat to the Chesapeake Bay. They have called them the Maryland Aquatic Outlaws. These "outlaws" include Flathead catfish, Zebra and Quagga Mussels, Purple Loosestrife, Mute Swan, Nutria, Snakehead, Water Chestnut, Chinese Mitten Crab, The Asian Carp Gang (Black, Silver, Grass, and Bighead Carp) and the Mud Bug Mob (Rusty, Red Swamp and Virile Crayfish). Many of these have been found around the state in various bodies of water. Some haven't been found as of this time but are a threat based on how they are known to spread.

Grant money has become available to work on the education, control and eradication of aquatic invasive species within the bay. Unfortunately, there is only enough money to target two species. Your team has been assigned to sit on the scientific committee to identify which of the Maryland Aquatic Outlaws will receive the money. You will report to the Maryland Department of Natural Resources aquatic research team who will be heading the grant application. In your report to the MDNR you must include the following information:

1. Background knowledge about your two targeted species – including names, origin of species, and how long it has been in Maryland
2. Identify the reasons for your choices
3. Identify the effects that they are having on the local economy, the ecosystem and the local society – include stakeholders or interests groups and ties to soils, wildlife, aquatics, and forestry
4. Potential methods of eradication or methods to slow the spread of the species
5. How will you educate the community about the organisms and your project
6. What sort of laws would you propose or are in affect to control these species

# MARYLAND'S AQUATIC OUTLAWS

**NOT WANTED**

**FLATHEAD CATFISH**  
 Also: *Pseudorasbora parva*



This species is native to southern Asia and is highly adaptable to various environments. It is a voracious feeder and can grow to a length of 30 inches. It is known to consume a wide variety of aquatic organisms, including native fish, insects, and plants. Its presence can significantly alter the ecosystem and reduce the abundance of native species.

**NOT WANTED**

**ZEBRA AND QUAGGA MUSSELS**  
 Also: *Dreissena polymorpha*



These mussels are highly invasive and can form dense colonies that clog waterways, disrupt the food chain, and reduce oxygen levels. They are also known to filter out phytoplankton, which can lead to a decline in water quality and the health of native aquatic life.

**NOT WANTED**

**PERILT EDDENSTRIE**  
 Also: *Echinochloa polystachya*



This plant is highly invasive and can form dense stands that crowd out native vegetation. It is also known to be a host for several species of insects, including the pestiferous European spruce sawfly.

**NOT WANTED**

**MITE SWAN**  
 Also: *Oxyechus*



This swan is highly invasive and can displace native waterfowl. It is also known to be a vector for several species of parasites and diseases that can harm native birds.

**NOT WANTED**

**BLACK CARP**  
 Also: *Megalocystus orientalis*



This carp is highly invasive and can cause significant damage to aquatic ecosystems. It is a voracious feeder and can grow to a length of 30 inches. It is known to consume a wide variety of aquatic organisms, including native fish, insects, and plants.

**NOT WANTED**

**THE ASIAN CARP GANG**

**SHOULDER CARP**  
 Also: *Hypoclinemus*



This carp is highly invasive and can cause significant damage to aquatic ecosystems. It is a voracious feeder and can grow to a length of 30 inches. It is known to consume a wide variety of aquatic organisms, including native fish, insects, and plants.

**NOT WANTED**

**RICKEY CRAYFISH**  
 Also: *Decapoda sp.*



This crayfish is highly invasive and can displace native crayfish species. It is also known to be a vector for several species of parasites and diseases that can harm native crustaceans.

**NOT WANTED**

**THE Mud Bug Mob**

**RED SWAMP CRAYFISH**  
 Also: *Decapoda sp.*



This crayfish is highly invasive and can displace native crayfish species. It is also known to be a vector for several species of parasites and diseases that can harm native crustaceans.

**NOT WANTED**

**VIBRILE CRAYFISH**  
 Also: *Decapoda sp.*



This crayfish is highly invasive and can displace native crayfish species. It is also known to be a vector for several species of parasites and diseases that can harm native crustaceans.

**NOT WANTED**

**NITELIA**  
 Also: *Alismaceae*



This plant is highly invasive and can form dense stands that crowd out native vegetation. It is also known to be a host for several species of insects, including the pestiferous European spruce sawfly.

**NOT WANTED**

**SNAKEHEAD**  
 Also: *Channa argus*



This fish is highly invasive and can displace native fish species. It is a voracious feeder and can grow to a length of 30 inches. It is known to consume a wide variety of aquatic organisms, including native fish, insects, and plants.

**NOT WANTED**

**CHINESE MITTEN CRAB**  
 Also: *Decapoda*



This crab is highly invasive and can displace native crab species. It is also known to be a vector for several species of parasites and diseases that can harm native crustaceans.

**HOW CAN YOU HELP PROTECT MARYLAND WATERS?**

There are many ways you can help protect Maryland's waters from invasive species. One of the most important things you can do is to be a responsible boater. This means cleaning your boat, trailer, and gear before launching them in the water. You should also avoid dumping anything overboard, including food, trash, and oil. Another important thing you can do is to report any sightings of invasive species to the appropriate authorities. This can help them take action to control the species and prevent them from spreading further.

**100 CLEAN BOAT ACTIVITY TO HELP PROTECT MARYLAND WATERS:**

- 1) Remove all plants, animals, and debris from your boat, trailer, and gear.
- 2) Drain all water from your boat, trailer, and gear.
- 3) Clean your boat, trailer, and gear with a brush and water.
- 4) Dry your boat, trailer, and gear for at least 48 hours.
- 5) Report any sightings of invasive species to the appropriate authorities.
- 6) Avoid dumping anything overboard, including food, trash, and oil.
- 7) Use proper disposal methods for any waste you generate while boating.
- 8) Be a responsible boater and follow all applicable laws and regulations.
- 9) Educate others about the importance of protecting Maryland's waters.
- 10) Participate in local clean-up events and other conservation activities.

**NOT WANTED**

**WATER CHINQUAPIN**  
 Also: *Typha*



This plant is highly invasive and can form dense stands that crowd out native vegetation. It is also known to be a host for several species of insects, including the pestiferous European spruce sawfly.

