

MARYLAND'S AQUATIC OUTLAWS

NOT WANTED



FLATHEAD CATFISH

Alias: *Pylodictis olivaris*

Native: Lower Great Lakes, Mississippi River, and Gulf Coast drainages
 Size: Up to 39 inches (TL); 100 pounds
 Impacts to Aquatic Ecosystems: Competes with native fishes for food; consumes native fishes and eggs
 Means of Introduction: Hitchhiked into Maryland via accidental or intentional release
 Status in Maryland: Last seen in the Susquehanna Flats, Sassafras River, and Potomac River south of Washington, D.C.

NOT WANTED



ZEBRA AND QUAGGA MUSSELS

Alias: *Dreissena polymorpha*
Dreissena bugensis

Native: Eurasia
 Size: Less than 2 inches
 Impacts to Aquatic Ecosystems: Both species compete with larval fishes and zooplankton for food; alter aquatic habitat and water quality; out-compete native mussels and clams; notorious for biofouling of man-made structures
 Means of Introduction: May hitchhike into Maryland in ballast water, or on boats, trailers, anchors, SCUBA gear, or in live wells, bait buckets, and coolers
 Status in Maryland: Not yet here

NOT WANTED



PURPLE LOOSESTRIFE

Alias: *Lythrum salicaria*

Native: Eurasia
 Size: 4 to 8 feet tall
 Impacts to Aquatic Ecosystems: Competes with native wetland plants for space and nutrients; alters wetland structure and function; reduces habitat for marsh-dwelling animals
 Means of Introduction: Hitchhiked into Maryland in ballast water
 Status in Maryland: Last seen in portions of the Potomac, Patuxent, Susquehanna, and Choptank rivers

NOT WANTED



MUTE SWAN

Alias: *Cygnus olor*

Native: Europe and Asia
 Size: Up to 25 pounds
 Impacts to Aquatic Ecosystems: Competes with native tundra swan; consumes large quantity of submerged aquatic vegetation; reduces habitat available to other aquatic species; disrupts breeding of other wildlife
 Means of Introduction: Hitchhiked into Maryland as escaped pets
 Status in Maryland: Last seen in most major tributaries to Chesapeake Bay



BLACK CARP

Alias: *Mylopharyngodon piceus*

Native: China, eastern Russia, and northern Vietnam
 Size: Up to 3 feet (TL) and 70 pounds
 Impacts to Aquatic Ecosystems: Threatens native freshwater mussel and snail populations through predation; competes with native fishes for food
 Means of Introduction: May hitchhike into Maryland via aquaculture
 Status in Maryland: Not yet here



SILVER CARP

Alias: *Hypophthalmichthys molitrix*

Native: Eastern China
 Size: Up to 3 feet (TL) and 77 pounds
 Impacts to Aquatic Ecosystems: Competes with larval and juvenile fishes, planktivorous fishes, clams, and mussels for food
 Means of Introduction: May hitchhike into Maryland in live wells or bait buckets; aquaculture
 Status in Maryland: Not yet here

NOT WANTED

The Asian Carp Gang



BIGHEAD CARP

Alias: *Hypophthalmichthys nobilis*

Native: Eastern China
 Size: Up to 3 feet (TL) and 50 pounds
 Impacts to Aquatic Ecosystems: Competes with larval and juvenile fishes, planktivorous fishes, clams, and mussels for food
 Means of Introduction: May hitchhike into Maryland via the live food industry; aquaculture
 Status in Maryland: Not yet here



GRASS CARP

Alias: *Ctenopharyngodon idella*

Native: China, Russia, and Thailand
 Size: Up to 3 feet (TL) and 65 pounds
 Impacts to Aquatic Ecosystems: Consumes native aquatic vegetation; competes with native invertebrates and fishes for food; degrades fish habitat; interferes with native fish reproduction
 Means of Introduction: Hitchhiked into Maryland via aquaculture and intentional release
 Status in Maryland: Last seen in small ponds in the Potomac, Patuxent, Choptank, and Nanticoke basins

NOT WANTED

The Mud Bug Mob



RUSTY CRAYFISH

Alias: *Orconectes rusticus*

Native: Ohio River in Ohio, Kentucky, Tennessee, Indiana, and Illinois
 Size: Up to 4 inches (TL)
 Impacts to Aquatic Ecosystems: Competes and displaces native crayfish species; reduces abundance and diversity of aquatic plants; consumes native fish eggs
 Means of Introduction: Hitchhiked into Maryland in bait buckets
 Status in Maryland: Last seen in the Monocacy River



RED SWAMP CRAYFISH

Alias: *Procambarus clarkii*

Native: Lower Mississippi River and Gulf Coast drainages
 Size: Up to 5 inches (TL)
 Impacts to Aquatic Ecosystems: Competes and displaces native crayfish species; reduces abundance and diversity of aquatic plants; consumes native fish eggs; alters stream insect communities
 Means of Introduction: Hitchhiked into Maryland via aquaculture
 Status in Maryland: Last seen in the Potomac, Patuxent, Chester, and Nanticoke rivers; also known from tributaries to Chincoteague Bay



VIRILE CRAYFISH

Alias: *Orconectes virilis*

Native: Upper Mississippi River, Great Lakes, and Hudson River drainages
 Size: Up to 5 inches (TL)
 Impacts to Aquatic Ecosystems: Competes and displaces native crayfish species; reduces abundance and diversity of aquatic plants, mussels, insect larvae, snails, frogs, and turtles
 Means of Introduction: Hitchhiked into Maryland via the live food industry and in bait buckets
 Status in Maryland: Last seen in the Susquehanna, Gunpowder, Patapsco, Patuxent, and Potomac rivers; also established in Deep Creek Lake

NOT WANTED



NUTRIA

Alias: *Myocastor coypu*

Native: South America
 Size: Up to 20 pounds
 Impacts to Aquatic Ecosystems: Feeds primarily on marsh plants; reduces habitat and food resources for migrating waterfowl; displaces the native muskrat
 Means of Introduction: Hitchhiked into Maryland via the fur farming industry
 Status in Maryland: Last seen in all river basins on the Delmarva Peninsula; reported but not established in tidal rivers on the western shore of Chesapeake Bay

NOT WANTED



SNAKEHEAD

Alias: *Channa argus* and other species of the genera: *Channa* and *Parachanna*

Native: Asia and Africa
 Size: Some species up to 4 feet (TL)
 Impacts to Aquatic Ecosystems: Consumes native fishes, crustaceans, and frogs; disrupts the ecological balance of streams and rivers
 Means of Introduction: Hitchhiked into Maryland via the aquarium and live food industries
 Status in Maryland: Last seen in the Potomac River

NOT WANTED



WATER CHESTNUT

Alias: *Trapa natans*

Native: Eurasia
 Size: Leaves form rosettes up to 6 inches long
 Impacts to Aquatic Ecosystems: Competes with native aquatic vegetation for space and nutrients; blocks sunlight to submerged grasses; reduces aquatic habitat; impedes navigation in waterways
 Means of Introduction: Hitchhiked into Maryland via the horticulture and aquatic garden industries
 Status in Maryland: Last seen in the Bird and Sassafras rivers and a few non-tidal ponds in Kent County

NOT WANTED



CHINESE MITTEN CRAB

Alias: *Eriocheir sinensis*

Native: East Asia
 Size: Up to 3 inches (carapace width)
 Impacts to Aquatic Ecosystems: Consumes eggs of native fishes; burrowing behavior increases erosion and damages infrastructure
 Means of Introduction: Hitchhiked into Maryland in ballast water, or via live food industry
 Status in Maryland: Last seen in the Patapsco River and in Chesapeake Bay off of Kent Island and near Chesapeake Beach

HOW CAN YOU HELP PROTECT MARYLAND WATERS?

Aquatic non-native invasive species are plants and animals that are able to aggressively colonize and spread into areas outside of their natural ranges. Lacking natural predators and other external population controls, these species have the ability to alter ecosystems often to the detriment of native species. Aquatic non-native invasive species cause alterations to habitat, food webs, commercial and recreational fisheries, shorelines, water supplies, industrial infrastructure, and can damage aesthetics and recreational opportunity (e.g. boating, swimming) in affected areas. The species pictured here pose a significant threat to Maryland's native species and aquatic ecosystems. Some of these species have already invaded Maryland waters. Efforts are now underway to eradicate these populations and prevent any further spread into other watersheds. Many of these species are prohibited from being imported, transported, purchased, possessed, propagated, sold, or released into State waters under the Maryland Aquatic Nuisance Species Regulations (COMAR 08.02.19).

YOU CAN TAKE THESE ACTIONS TO HELP PROTECT MARYLAND WATERS:

- 1) Remove all visible plants, animals, mud, and debris from your boat hull, propeller, anchor, and trailer before launching into Maryland waters
- 2) Drain and rinse all live wells, bilge areas, and coolers
- 3) Rinse all fishing equipment, boats, trailers, and SCUBA gear with hard spray from a garden hose
- 4) Dispose of unused bait in a trash can; Do not release unused bait in or near any water body
- 5) Never release unwanted aquarium pets in or near Maryland waters; Find a new owner or destroy them in a humane manner
- 6) Spread the word! Inform others about the threat of aquatic non-native invasive species to Maryland streams, rivers, lakes, and Chesapeake Bay
- 7) If you catch any of these species, KEEP IT and FREEZE IT! Call MDNR at 1-877-620-8DNR to let us know.

For more information on these and other aquatic outlaws, visit: <http://www.dnr.state.md.us/invasives> and <http://www.mdsg.umd.edu>



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