NUISANCE SPECIES - Updates to Listings

What was proposed?

The Department proposed updates to the nuisance species list to reflect changing understandings of which species may present a danger to Maryland's native species and ecosystems. These changes are based on risk assessments conducted by the Department to determine the potential for certain species to have significant negative impacts.

The proposed action:

1. Removes candiru from the list of species that a person may not import, transport, purchase, possess, propagate, sell, or release into State waters;
2. Expands the listing of swamp eels to apply to an entire family of fish rather than a specific species;
3. Adds both Chinese pond mussel and waterwheel as species which a person may not import, transport, purchase, possess, propagate, sell, or release into State waters; and
4. Makes a number of technical updates based on information that has developed since the last update to these lists.

Why are these changes necessary?

Candiru

The Department performed a risk assessment for candiru and determined that it is a lower risk invasive species than originally feared. Candiru is native to the Amazon and Orinoco River Basins in South America and is not currently found in the United States. Because it is a tropical species, it is not likely to be able to survive winters in Maryland, or establish a population, in the event that it were to be accidentally released into State waters. It is also not a common fish in the aquarium trade as it is a blood parasite.

Chinese Pond Mussel

It is necessary to list the Chinese pond mussel as a species which a person may not import, transport, purchase, possess, propagate, sell, or release into State waters based on the results of the Department's risk assessment. The Chinese pond mussel is a large freshwater unionid mussel native to eastern Asia. It is currently found throughout Europe, as well as in Indonesia, Central America, and North America. It is a filter-feeder with a larval stage (glochidia) that parasitizes fishes. As a result, it competes with native unionid mussels for space, nutrients, and host fish. It has been observed to be a successful competitor that may compose up to 90 percent of the total unionid biomass in systems where it has been established, completely replacing some native species. The Department's risk assessment indicated that the species had a high climate match score with Maryland. That score combined with the species' high fecundity and generally high tolerance of disturbance and pollution indicate that Chinese pond mussel could establish in Maryland if it were introduced. Its success as a competitor would be detrimental to stocks of native Maryland unionid mussels, many of which are already imperiled. Listing this species in the most restrictive category of nuisance species will hopefully deter this outcome.

Swamp Eels

It is necessary to expand the list of swamp eels to apply to the entire family of Synbranchidae, rather than the specific Asian swamp eel currently listed, because there are several species that

are sold for human consumption in live food markets and circulated in the aquarium trade all of the same family. Swamp eels are primarily freshwater fishes distributed in tropical and subtropical regions of Asia, Australia, Africa, and Central and South America. There are no swamp eel species native to North America. Swamp eels are considered tropical to sub-tropical species that inhabit mostly freshwater slow-moving systems including ponds, swamps, and ephemeral wetlands. These eels are environmentally tolerant as a group. The two most commonly-traded species are known to tolerate low dissolved oxygen concentrations (as they are air breathers), a wide range of salinity (up to 16 ppt) and can survive freezing temperatures and ice cover, meaning that it is likely they would be able to survive a Maryland winter and expand throughout the Chesapeake Bay watershed if given the opportunity. On the human health side, swamp eels are a common source of human gnathostomiasis (a parasitic infection) and have been observed to contain a high parasite load including nematodes, acanthocephalans, and digenean parasites. Although impacts to invaded areas outside of Maryland have been relatively minimal, swamp eels can attain large size (up to 1 meter in length) and prey on a variety of organisms, and it is possible that impacts have been underreported. The risk analysis that was run on the entire family determined that there is a high risk of invasiveness due to environmental and climate matching, indicating most of Maryland is suitable for establishment by these species.

Waterwheel

It is necessary to list waterwheel as a species which a person may not import, transport, purchase, possess, propagate, sell, or release into State waters based on the results of the Department's risk assessment. Waterwheel is a carnivorous, perennial, free-floating, rootless aquatic herbaceous plant, with a simple or sparsely branched stem possessing successive whorls of bristled, prey-catching leaves. It is native to Eurasia, Africa, and Australia, has been grown by carnivorous plant enthusiasts in outdoor ponds since the 1980s and was introduced/reported from the wild in the U.S. as early as 1999. Waterwheel has been found in Virginia and has shown highly invasive tendencies there. This species' primary method of reproduction is vegetative, with individual plants growing continuously in the right conditions and doubling in mass in as little as 12 days. It forms dormant buds called "turions" that sink to the bottom of the waterbody to overwinter, with new plants growing from these structures in the spring. Whole plants, plant fragments, or turions may be transported by birds, flowing water, or boats and other contaminated recreation equipment. If it becomes established, it may have a significant impact on invertebrate and zooplankton communities, with individual plants containing as many as 200 traps that have a capture efficiency of up to 40%. As such, waterwheel may compete with native aquatic carnivorous plants and could reduce populations of rare aquatic invertebrates through predation, especially in sensitive aquatic habitats. Additionally, thick growth of waterwheel could shade out native aquatic macrophytes and may even clog waterways used for fishing, boating, and irrigation. If this species expands beyond its currently limited U.S. populations and continues to find the same levels of success, then it could prove itself to be a damaging aquatic invader. Listing it in the most restrictive category of nuisance species will hopefully deter this outcome.

Other Housekeeping Changes

It is necessary to make technical changes based on updated science on currently-listed species. The proposed changes reflect corrected spelling and update how these species are categorized. Specifically, the proposal:

1. Updates the scientific name of Alabama bass from “Micropterus hensalli” to “Micropterus henshalli”;
2. Removes the scientific name “Notropis lutrensis” from the listing for red shiner;
3. Updates the scientific name of rusty crayfish from “Orconectes rusticus” to “Faxonius rusticus”;
4. Updates the scientific name of virile crayfish from “Orconectes virilis” to “Faxonius virilis”; and
5. Includes “Trapa bispinosa” as a species of water chestnut.

Who will this affect?
These changes apply to anyone who intended to obtain a previously unlisted species of swamp eel, Chinese pond mussel, or waterwheel.

Additional Information
- Maryland Aquatic Nuisance Species Management Plan
- Ecological Risk Screening Summary for Maryland: Swamp Eels
- Ecological Risk Screening Summary for Maryland: Chinese Pond Mussel
- Weed Risk Assessment for Waterwheel

What is the specific regulatory action?
Amend Regulation .04 under COMAR 08.02.19 Nuisance and Prohibited Species.

Was this change discussed with advisory bodies or other interested or impacted individuals?
- These changes were recommended by the Department of Natural Resources Invasive Species Matrix Team after a review of the most up-to-date scientific literature on the species.
- The changes being considered were scoped with:
    - The Sport Fisheries Advisory Commission (SFAC) and Tidal Fisheries Advisory Commission (TFAC) at their October 2025 meetings.
    - The general public from October 20, 2025, through November 4, 2025.

Regulatory Process
Fishing rules in Maryland may be created by either the General Assembly or the Department. When the Department creates a fishing rule, it is called a regulation. When the General Assembly creates a rule, it is called a statute. The Department often has to create a regulation to implement a statute. The regulatory process begins with scoping and the Department follows normal procedures as concepts move forward.

During the scoping process, the Department gathers suggestions and ideas from stakeholders and others about how to solve a fishery problem or address a need. The goal of scoping is to identify issues, potential impacts, and reasonable alternatives associated with the issues so that management actions can be developed. After the public has had an opportunity to comment on possible management actions during the scoping process, the Department considers these comments and develops an appropriate management strategy.

At the conclusion of the scoping process, the Department determined that the action is necessary and appropriate. The rules are being promulgated following the Administrative Procedures Act described in Title 10, Subtitle 1 of the State Government Article Annotated Code of Maryland.

- The General Assembly's Administrative, Executive, and Legislative Review Committee reviews the regulatory proposal for fiscal and legal analysis.
- The proposal was printed by the Division of State Documents in the Maryland Register on October 30, 2026.
- A 30-day public comment period began on the day of publication. The comment period ends November 30, 2026.
- After reviewing the comments, the Department may adopt the changes.
- If the Department adopts the changes, they become effective after a notice is published in the Maryland Register that announces the adoption and effective date.

When could this be effective?

The Department projects that this change could be effective in early 2027. However, the exact date cannot be determined at this time.