

Great Lakes SmackDown!

Terrestrial Terror Introduction

By Alice Rossignol and Rachael Gleason

Last fall, we introduced the Great Lakes SmackDown!, a project that explored invasive species like never before: Through lake fights, discussion and expert and reader input.

The quagga mussel, also known as the “The Quagmeister,” came out victorious against the sea lamprey by filter feeding at extreme velocities, hording toxins and being a general pain in the lake.

Now the terrestrial invasives (and some aquatic wildcards) will step up to the plate.

Will the voracious gypsy moth win it all? Or will the mute swan make a silent comeback? You’ll help us decide. Using sound scientific principles let us know which invader you think is the worst for the Great Lakes region.

Do you have a grudge or a personal vendetta against one of these bad critters? Then let your feelings be known! Winners will be chosen based on reader comments, poll results and expert opinion.

Some of these organisms may be exotic losers but that doesn’t mean they can’t be winners in the SmackDown!

And so can you.

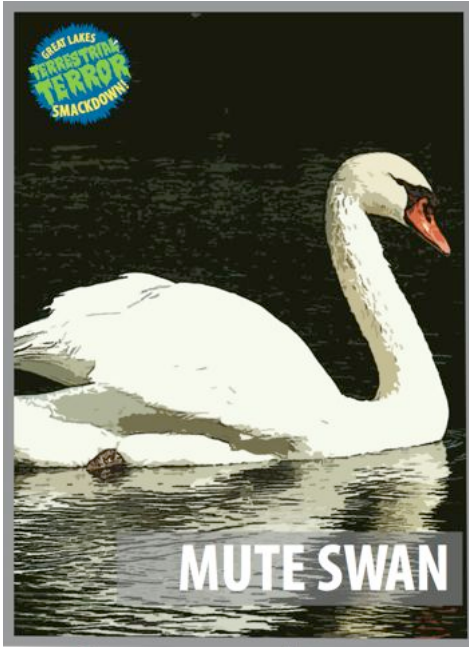
Fill out this packet’s bracket and e-mail it to **greatlakesecho@gmail.com** or drop it off at the Michigan State University Knight Center for Environmental Journalism, 381 Communication Arts and Sciences, by **Friday March 18**.

Readers who call the shots correctly win a prize. But more importantly, they’ll claim intellectual smack down bragging rights.

Matches start the week of March 14 but get to know the contenders now. Check out their fighter profiles in this packet.

Let’s fight!





Alias: The Silent Foul

Legal name: *Cygnus olor*

Home Turf: Europe and Asia

U.S. Fighting Debut: Mid-1800s

Agent: “Fowl” on us! Humans intentionally introduced these birds to the U.S. for ornamental purposes.

Preferred Great Lakes fighting arena: lakes and wetlands of Michigan, Wisconsin, Illinois, Indiana, Ohio, Pennsylvania, New York and Ontario.

Weight/Size class: Wingspan: Up to about 5 feet. Weight: Up to about 30 lbs.

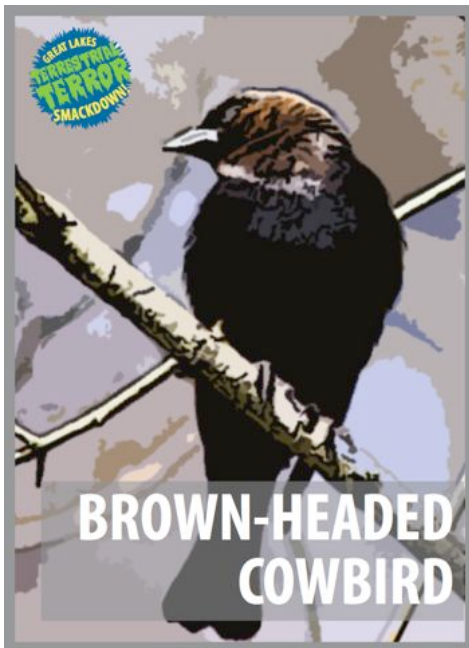
Fighting Skills:

- This waterfowl is extremely aggressive towards native species like the loon and towards humans. Mute swans can break human bones and have been linked to human and waterfowl fatalities.
- Though beautiful, one adult swan can uproot 20 pounds of aquatic plants each day.
- While sucking up all this aquatic vegetation the silent foul kicks up sediments, which reduces water quality.

- Loyal mates for life this waterfowl is an extremely productive reproducer. Some experts speculate its population growth between 10 to 20 percent annually in Great Lakes states.

Life Expectancy: The record for a wild mute swan is 19 years.

Offspring: Five to seven eggs per clutch.



Alias: The Warbler’s Woe

Legal name: *Molothrus ater*

Home Turf: Great plains of the central U.S.

Agent: Brown-headed cowbirds moved east from the central plains when forests were removed or fragmented and areas were converted to farm land because they prefer brush, forest edges, pastures, orchards and grasslands.

Preferred Great Lakes fighting arena: All Great Lakes states and provinces.

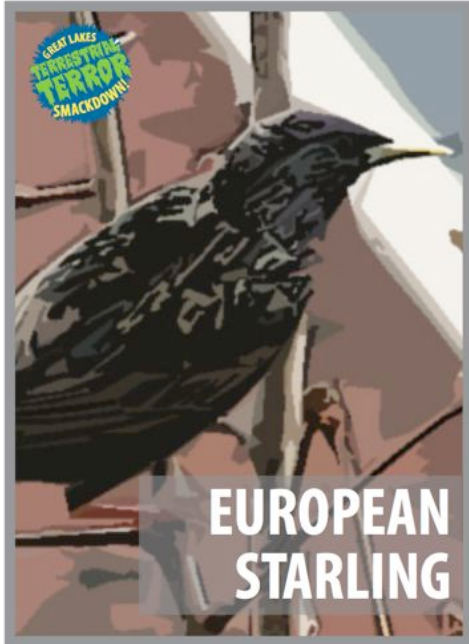
Weight/Size class: Length: 6 to 8 inches. **Weight:** 1.41 to 1.76 oz

Fighting Skills:

- These parasitic birds remove eggs from other bird nests and replace it with its own.
- Recently hatched baby broody parasites out-compete native bird young by aggressively hogging their food.
- Some scientists speculate that this parasitic habit has led to the decline of some songbirds like Michigan’s rare Kirtland’s warbler.

Life Expectancy: The longest recorded cowbird lifespan is nearly 16 years.

Offspring: Females lay up to 40 eggs per breeding season.



Alias: Shakespeare's Darling

Legal name: *Sturnus vulgaris*

Home Turf: Europe, Asia, Africa

U.S. Fighting Debut: 1890

Agent: Embarrassingly enough, this darling starling was introduced intentionally as part of a plan to introduce all birds mentioned in Shakespeare's play to the U.S.

Preferred Great Lakes Fighting Arena: All Great Lakes states and provinces

Weight/Size class: Length: 7.9–9.1 Wingspan: 12.2–15.7 Weight: 2.1–3.4.

Fighting Skills:

- This avian intruder is highly adaptable and is described by Cornell University's The Birds of North America as: "arguably the most successful avian introduction to this continent," and has earned a title on the top "100 of the World's Worst Invasive Alien Species."
- A formidable foe, starlings out-compete native species especially cavity-nesting birds.
- These birds have a knack for damaging fruit and grain crops like blueberries and cherries. A 2000 study estimated that starlings cause \$800 million of damage to U.S. crops per year. Ouch.

- Sick of these frequent fliers? Well, that's because they can make you sick. European starlings have been known to carry diseases like meningitis and salmonellosis that can be passed to livestock and poultry. Some diseases can also be passed to humans.

Life Expectancy: Up to 20 years.

Offspring: 1 to 2 clutches of 4 to 6 eggs per year.



Alias: The Egg-beater

Legal name: *Passer domesticus*

Home Turf: Europe, Africa, Asia.

U.S. Fighting Debut: 1851 Brooklyn, New York

Agent: Purposefully introduced.

Preferred Great Lakes fighting arena: All Great Lakes states and provinces.

Weight/Size class: Length: 5.9–6.7 inches. Wingspan: 7.5–9.8 inches. Weight: 1 ounce.

Fighting Skills:

- Highly aggressive, this little bird is known to evict native songbirds, like tree swallows, from their nests or nest boxes. They kill nestlings, females incubating eggs and destroy eggs.
- Avid eaters, house sparrows can damage crops like grains, flowers and fruits. They also contaminate crops with their fecal matter.
- They carry gnarly diseases and parasites, some of which can be transmitted to humans and other animals.

Life Expectancy: The oldest house sparrow recorded was nearly 16 years old.

Offspring: 1 to 8 eggs in each clutch. They have up to four clutches per season.



Alias: Green Menace

Legal name: *Agrilus planipennis*

Home Turf: Eastern Russia, northern China, Japan and Korea

U.S. Fighting Debut: June 2002 (Michigan)

Agent: Ash trees; affects woodlots and landscaped areas. Spreads when people move ash firewood and logs out of a quarantined area.

Preferred Great Lakes fighting arena: All eight Great Lakes states and two Canadian provinces.

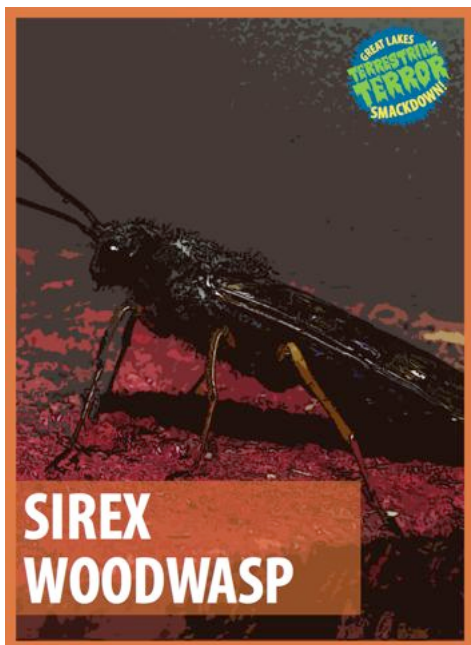
Weight/Size class: 1/2 inch-long and 1/8 inch wide

Fighting Skills:

- Ash trees better watch their behinds with this nasty invader. This tiny green beetle bores into ash trees, disrupting the transport of water and nutrients throughout the tree.
- Borer infestations cause foliage to wilt, branches to die; heavy infestations thin out urban tree canopy and kill off mature ash trees, which can lead to temperature changes and increased air pollution.
- The emerald ash borer is a money suck. Infestations economically burden homeowners, who must remove and replace dead ash trees.

Life Expectancy: About one year.

Offspring: Roughly 60 to 90 eggs per female.



Alias: Miley Cyrex

Legal name: *Sirex noctilio*

Home Turf: Europe, Asia & Northern Africa

U.S. Fighting Debut: 2004

Agent: Accidentally introduced through wood imports.

Preferred Great Lakes fighting arena: Indiana, Michigan, New York, Pennsylvania, Ontario

Weight/Size class: 1 to 1.5 inches in length.

Fighting Skills:

- This creepy flier pines for a variety of pine trees and can bore through bark. They've also been known to feed on various larch and fir trees.
- Once a hole is drilled this wasp injects toxic mucus, a fungus called *Amylostereum areolatum* and her eggs.
- Once wounded, trees show signs such as reddening needles and resin beads pouring out of the bored wounds. Eventually they die.

Life Expectancy: About 1 year

Offspring: Each female wasp lays between 25 and 450 eggs.



Alias: The Extreme Defoliator

Legal name: *Lymantria dispar*

Home Turf: Europe and Asia

U.S. Fighting Debut: 1860s

Agent: An agent named E.L. Trouvelot brought the moths from France to conduct silkworm research. The moths escaped and the invasion began.

Preferred Great Lakes fighting arena: Minnesota, Wisconsin, Michigan, Indiana, Illinois, Ohio, Pennsylvania, New York, Ontario, Quebec.

Weight/Size class: Adult form: Males: 1.5 inch wingspan. Females: 2-inch wingspan. Caterpillar form: 1.5 to 2 inches long.

Fighting Skills:

- This insect is most lethal in its voracious caterpillar form. It feeds on the foliage of hundreds of types of trees, with a preference for oak.
- This feeding habit can lead to complete defoliation of trees and combined with other factors can cause DEATH.

Life Expectancy: About 1 year

Offspring: A female lays 50 to 1,000 eggs in each year. Eggs can be spread by “hitchhiking” where eggs are laid on moving objects like vehicles.



Alias: The Stale Wind

Legal name: *Halyomorpha halys*

Home Turf: Eastern Asia

U.S. Fighting Debut: First documented in Pennsylvania in 1998.

Agent: Most likely an accidental arrival in shipping crates of Asian imports.

Preferred Great Lakes fighting arena: Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio Pennsylvania and New York.

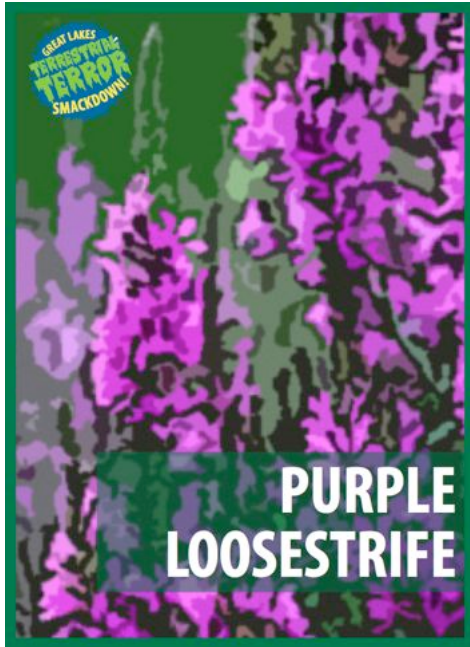
Weight/Size class: This one’s adults are about 1 inch long.

Fighting Skills:

- This stinky insect is known to putt-putt around and damage host plants like: ornamental plants, fruit trees and vegetables. Damage includes forming wart-like growths on beans and puckering or pitting of fruit.
- These guys like to hang out together in the fall and may form large congregations on buildings or invade your home!
- As its name implies, it releases a foul, stale wind-like odor when it feels threatened.

Life Expectancy: Usually one generation per year.

Offspring: Each female lays up to 250 eggs after mating, which hatch in 4 to 5 days.



Alias: The Purple Plague

Legal name: *Lythrum salicaria*

Home Turf: Eurasia, from Great Britain to Central Russia, and Asia, including Japan, Korea, Southeast Asia, northern India and the northern Himalayan region

U.S. Fighting Debut: Early 1800s in the United States; 1869 in Lake Ontario (Great Lakes)

Agent: Ballast water and canals. Also spread by wind, mud adhering to wildlife, livestock, vehicle tires, boats and people.

Preferred Great Lakes fighting arena: All eight Great Lakes states

Weight/Size class: Can grow up to 8 feet tall. Forms social cliques of 5-foot-tall plants

Fighting Skills:

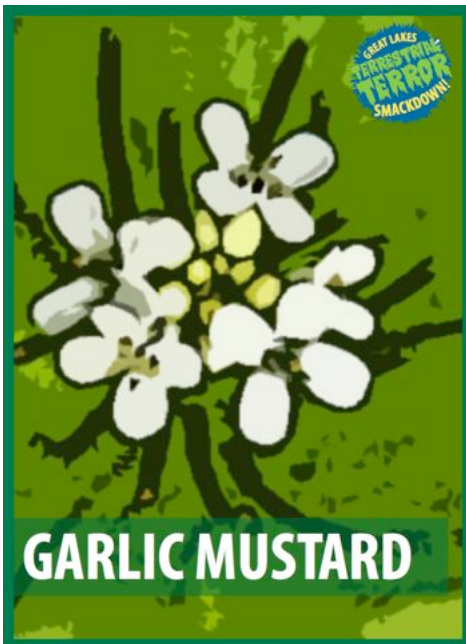
- This tall and striking purple plant uses its beauty as a deadly tool. It entices unsuspecting horticulturists to use it for landscape and bee-keeping projects.
- The aggressive and competitive purple loosestrife forms a dense

net that choke out native grasses and flowering plants and destroy habitat for waterfowl and other wildlife at impressive speeds.

- While it prefers the rich, highly organic soils, it can settle anywhere and withstand up to 50 percent shade and shallow flooding.

Life Expectancy: The plant dies quickly each fall; decomposing leaves can negatively impact natural wetland function and animal populations that feed on decaying plant matter.

Offspring: Flowers 8-10 weeks after spring growth; seeds can mature even if submerged for two to three years.



Alias: Colonel Mustard

Legal name: *Alliaria petiolata*

Home Turf: Europe

U.S. Fighting Debut: 1800s

Agent: Originally used in the U.S. for food and medical uses.

Preferred Great Lakes fighting arena: All Great Lakes states and provinces.

Weight/Size class: 3 to 4 feet high.

Fighting Skills:

- Takes advantage of disturbed areas where trees have been removed such as trails and roadsides.
- A rapid sprawler, in some areas in Illinois its recorded spreading up to 120 feet per year.
- One the Colonel decides to put down roots, its committed, and becomes a permanent resident of that plant community.
- Displaces native plants and causes lower plant diversity, while hogging the ground layer of the ecosystem.
- The presence of garlic mustard can change the composition of habitats like growing taller than native plants and butterflies mistaken lay their larvae on.

Life Expectancy: Two years.

Offspring: One plant produces between 50 and 7,900 seeds. Seeds remain viable in soil for up to 5 years.



Alias: The Knapster

Legal name: *Centaurea stoebe*

Home Turf: Europe

U.S. Fighting Debut: Late 1800s

Agent: Accidentally either through contaminated seeds or ballast water.

Preferred Great Lakes fighting arena: All Great Lakes states and provinces.

Weight/Size class: 3 to 4 feet tall.

Fighting Skills:

- This plant has a toxic personality because it's phototoxic — toxic to other plants.
- Don't let this plant get under (or on) your skin because it can cause skin irritation in humans.
- With no sense of personal space, this weed crowds out other plants like those that livestock eat.
- Home is where it sets its roots. This plant takes advantage of various habitats like Great Lakes dunes, road ditches, railroad beds, prairie sites, and oak and pine barrens.
- Knapweed infestations can increase surface run-off and sedimentation in some areas.

Life Expectancy: About two years. But seeds in the ground remain capable of germinating for up to 7 years.

Offspring: An average plant creates 1,000 seeds a year.



Alias: The Bark Butcher

Legal name: *Cryptococcus fagisuga*

Home Turf: Europe

U.S. Fighting Debut: Michigan in 2000 and Wisconsin in September 2009

Agent: Accidental introduction by an unknown agent.

Preferred Great Lakes fighting arena: Michigan, Wisconsin and Ontario

Weight/Size class: 1 mm long

Fighting Skills:

- The Beech scale isn't a "fun-guy" at all. The invasive critter feeds on tree sap, which paves the way for destructive fungi to invade unsuspecting trees. The resulting condition is referred to as the "Beech Bark Disease," a growing problem in Great Lakes states.
- Dead trees ravished by the disease are a threat to campers. Although necessary, it's difficult and costly to remove infested trees and branches.
- As Beech scales are feeding on tree sap, their legs become stuck to the surface. They spent their last moments tragically trapped by their own gluttony.



Alias: The Beast

Legal name: *Sus scrofa*

Home Turf: Europe and Asia

U.S. Fighting Debut: 1500s

Agent: In 1492 Columbus sailed the ocean blue, probably with domestic swine too.

They got away or were released, and now Great Lakes folks must deal with “the beast.”

(Other explorers probably brought some too.)

Preferred Great Lakes fighting arena: Mostly in Michigan with populations in Ohio, Indiana, New York, Pennsylvania and Wisconsin.

Weight/Size class: Males: 100-440 lbs. Females: 80-330 lbs.

Fighting Skills:

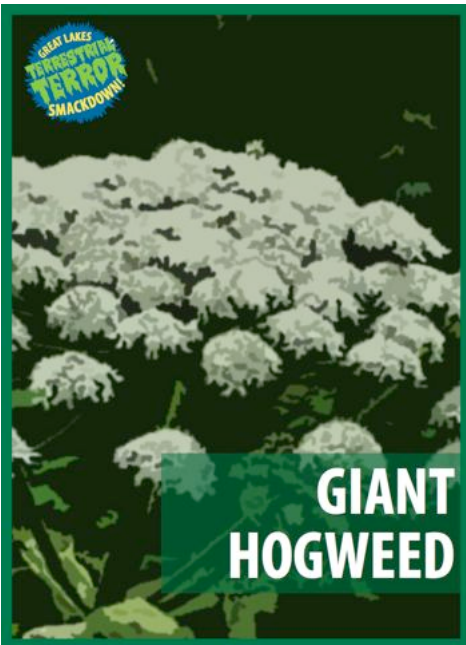
- Ever the athletes, these pigs are swift and multi-talented – They can run up to 30 miles per hour and are excellent swimmers.
- Well-known as big bullies, these swine eat whatever plant or animals are in their path.
- These bad boys and girls can give you diseases and parasites like: brucellosis,

balantidiasis, leptospirosis, salmonellosis, toxoplasmosis, trichinosis, trichostrongylosis, sarcoptic mange, tuberculosis, tularemia, anthrax, rabies and the plague – Just to name a few.

- Trampling is a feral swine strong suit. They’ve been known to damage crops, plant communities, vehicles, turf, soil and even archaeological sites.

Life Expectancy: 15 to 25 years.

Offspring: Females can start breeding at 6 months of age and can produce 4 litters a year of 4 to 12 piglets.



Alias: The Hulk

Legal name: *Heracleum mantegazzianum*

Home Turf: Caucasus Mountain region - between the Black and Caspian seas.

U.S. Fighting Debut: 1917

Agent: Introduced as an ornamental plant.

Preferred Great Lakes fighting arena: Moist places in Ontario, Quebec, Michigan, New York, Pennsylvania, Illinois

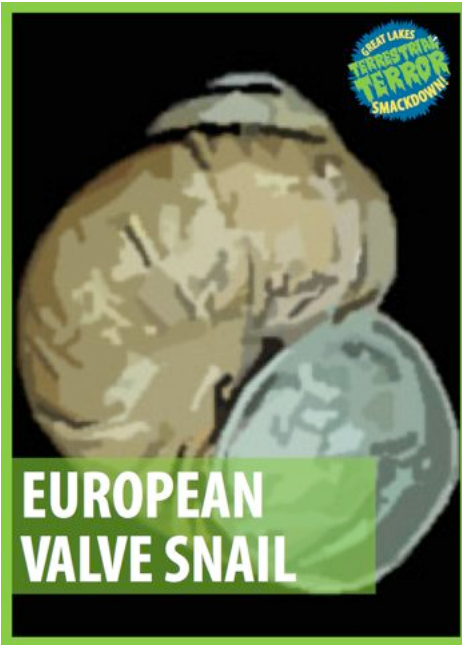
Weight/Size class: 15 to 20 feet high with leaves up to 5 feet across and flowers up to 2.5 feet across.

Fighting Skills:

- This gigantic plant out-competes native plants.
- During winter months, it dies back which can lead to erosion on stream banks where it prefers to grow.
- It’s considered a public health concern because its sap can cause severe skin reaction in humans called, “photo-dermatitis” or “photo-sensitivity,” where skin blisters in the sunlight. Contact with the eyes can lead to temporary or permanent blindness.
- This big guy is so obnoxious that is listed under the “Federal Noxious List.”

Life Expectancy: About two years.

Offspring: Large hogweed colonies can form from a single plant because seeds combined with shoots from its roots create lots of hogweed babies.



Alias: Spiral of Doom

Legal name: *Valvata piscinalis*

Home Turf: Europe, the Caucasus, western Siberia and Central Asia

U.S. Fighting Debut: Introduced to Lake Ontario at the mouth of the Genesee River in 1897 and spread to Lake Erie, St. Lawrence River, Hudson River and Champlain Lake.

Agent: Most likely in packing materials from Europe made of straw and marsh materials. Humans later spread snails by ship through canals.

Preferred Great Lakes fighting arena: All the Great Lakes except for the St. Clair River and Lake Huron.

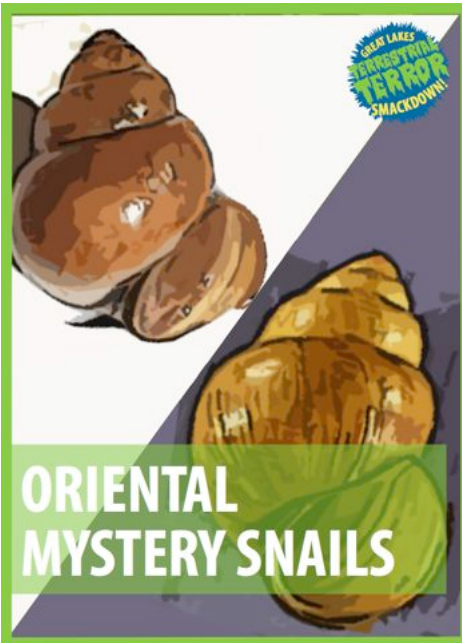
Weight/Size class: 7 mm in length

Fighting Skills:

- This guy might be little and slow, but he's grows rapidly and has an aggressive appetite for algae and organic matter. The snail also reproduces often and quickly.
- Using its keen chemosensory perception, it can detect and shield itself from nearby threats.
- The snail can host evil parasites that spread to other species.

Life Expectancy: 13 to 21 months

Offspring: Lays 150 eggs two to three times a year



Alias: Oriental Tag Team (Japanese Mystery Snail | Chinese Mystery Snail)

Legal name: *Cipangopaludina chinensis malleata* | *Cipangopaludina japonica*

Home Turf: Southeast Asia to Japan and eastern Russia | Japan, Taiwan, and Korea

U.S. Fighting Debut: From 1931 to 1942 in the Great Lakes via the Niagara River, which flows into Lake Ontario. | Lake Erie in the 1940s.

Agent: Likely released from an aquarium into the Niagara River | Deliberately released to the Great Lakes; intentionally stocked as food for the channel catfish

Preferred Great Lakes fighting arena: Lake Erie, Lake Ontario and Lake Michigan, Michigan, Indiana, Ohio, Wisconsin and New York. | Lake Michigan, Lake Erie, Wisconsin

Weight/Size class: Can reach 65 mm | Can reach 50 mm; up to 65 mm in Lake Erie

Fighting Skills:

- The Chinese mystery snail is more widespread, but the Japanese mystery snail is more of a nuisance. They might not stand a chance alone, but together, they are the ultimate water cloggers.

- The Japanese mystery snails are a scourge to Lake Erie fisherman, who have caught up to two tons in one haul in the past.
- The sludge-eaters often clog filter screens of water intake, another nuisance to fisherman.
- The snails threaten native gastropods and serve as vectors for the transmission of parasites and disease. The Japanese snail is a host to *Angiostrongylus cantonensis* larvae in Taiwan, a species associated with eosinophilic meningitis.

Life Expectancy: Females: 5 years, Males: 3 years | Females: 8 years

Offspring: 70 to 100 in a lifetime | 10 to 120 young

Photo and Information Sources:

- **All About Birds** | allaboutbirds.com
- **Birds of North America** | bna.birds.cornell.edu
- **Emerald Ash Borer** | emeraldashborer.info
- **eNature** | enature.com
- **Flickr** | Trisha Shears (Itshears), Keith (pheonix), Liz West (Muffet), Frank Mayfield (gmayfield10), (pawpaw67)
- **Global Invasive Species Database** | issg.org
- **Great Lakes Echo** | greatlakesecho.org
- **International Union for Conservation of Nature Red List** | ucnredlist.org
- **Invasive Species Info** | invasivespeciesinfo.gov
- **Michigan Department of Natural Resources** | michigan.gov/dnr
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