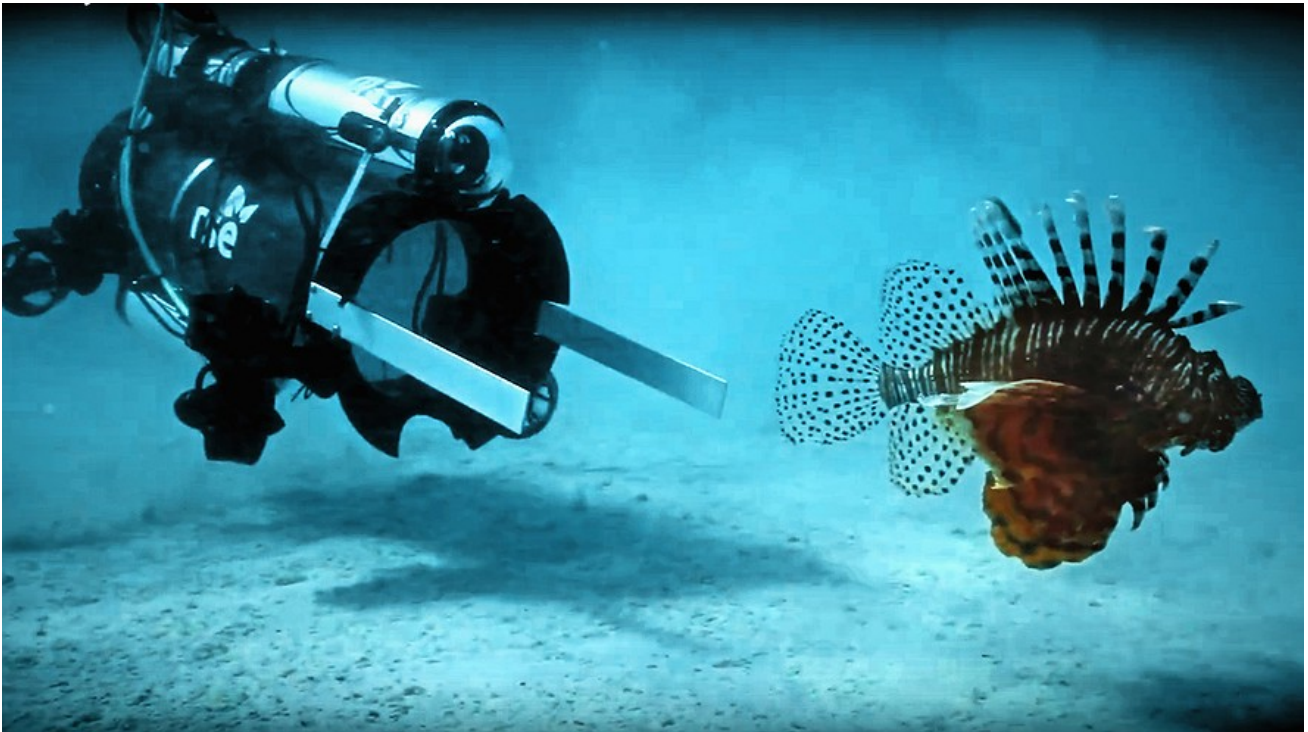


New technology used to get rid of unwanted creatures

By Associated Press, adapted by Newsela staff on 05.04.17

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This photo provided by Robots in Service of the Environment, taken April 18, 2017, shows the first day a new robot was used to hunt dangerous and invasive lionfish in Bermuda. It stuns a lionfish with an electric current and then the fish is vacuumed into a container alive and it can later be sold for food. AP Photo

WASHINGTON, D.C. — Throughout Earth's oceans, forests and grasslands, there are invaders: animals from distant lands.

Invasive species are plants and animals that thrive in areas where they don't naturally live. They are usually brought to new areas by humans, either accidentally or intentionally.

No Natural Predators

Sometimes, these invasive species have no natural predators. That means they can simply multiply and take over their new land, crowding out and, at times, killing native species.

"Critters are smart — they survive," said biologist Rob "Goose" Gosnell, head of U.S. Department of Agriculture's wildlife services in the U.S. territory of Guam. "Trying to outsmart them is hard to do."

Now, invasive species may have a new enemy: robots.

New technology is being combined with the old methods to root out unwanted creatures.

This is an important development, as invasive species are costly. They cause about \$314 billion per year in damages in just the United States, United Kingdom, Australia, South Africa, India and Brazil. They cause animals to go extinct.

Piero Genovesi is an Italian scientist who helps fight invasive species for an international organization.

"We have totally new tools that were just unthinkable a few years ago," Genovesi said.

The Beautiful And Dangerous Lionfish

A new underwater robot is targeting the beautiful but dangerous lionfish. The fish has spread all over the Caribbean, the Gulf of Mexico and up the U.S. East Coast as far north as New York's Long Island, with its venomous spines that are dangerous to touch.

Lionfish have no natural predator in the Atlantic. That allows it to devour large amounts of other fish, including popular fish that humans eat, such as snapper and grouper.

The lionfish-fighting robot is the creation of Colin Angle, chief executive officer of IRobot, which makes the Roomba vacuum cleaner. Along with a team, he created a new nonprofit organization that turns robots into environmental tools.

The robot is called Guardian LF1. It uses what Angle says is a gentle shock to stun the lionfish before they are sucked into a tube.

During two days of testing in Bermuda recently, the robot caught 15 lionfish. Afterward, the lionfish were handed over to top chefs, who competed to see who could make the best lionfish dish.

Angle is hoping to make the robot more affordable so anyone can use it.

"What's next?" Angle said. "Our ambition is much larger than lionfish."

Brown Tree Snakes Eat Native Birds

A few decades ago, native birds started disappearing from the Pacific island of Guam, baffling scientists. Then they found the culprit: brown tree snakes. The non-native serpents were eating all the birds and their eggs.

The snakes, which live in the trees, had no natural enemies, and just trapping them wasn't working, Gosnell said.

However, the snakes did have one enemy: acetaminophen, the painkiller drug used in Tylenol.

So biologists came up with a plan: Use dead mice as bait. Glue a painkiller pill to the mice.

The mice are put in tubes, and 3,000 of them are dropped by a helicopter. The mice pop out, and the whole contraption dangles in the trees. It's still experimental but it will soon go to more regular use.

Asian Carp

The Asian carp is a fish that's taken over rivers and lakes in the Midwest. To fight them, U.S. Fish and Wildlife officials are using a specialized boat, nicknamed the Magna Carpa. It has giant winglike nets that use electric currents as an underwater stun gun to shock the fish, said biologist Emily Pherigo.

With more powerful shocks, the fish are killed and float to the surface. In just five minutes, around 500 fish are collected and later turned into fertilizer. This "electro-fishing" was written about as a possible conservation technique back in 1933, said biologist Wyatt Doyle.

Wiping Out Wild Goats

On the Galapagos islands, wild goats were a major problem. In less than five years, scientists wiped out tens of thousands with a special method.

Biologist Karl Campbell of the organization Island Conservation introduced specialized female goats. They were constantly ready for breeding to lure the male goats into mating with them. However, these female goats were sterile — that is, they were unable to have baby goats.

Santiago Island, once home to 80,000 goats, is now goat-free and larger Isabella Island is getting close, he said.

And now, Campbell and others are going one step further: tinkering with the genes of mosquitoes and mice to either make them sterile or only have male offspring. Too many males would eventually cause a species to die off on an island because there are no females to mate with. Campbell cautions that this technology would be difficult to control and use, so it is years away, he says.