

# Eating an Alien

Kristan Uhlenbrock

begin to panic. As I stare into an open Styrofoam container of frozen fillets of lionfish wrapped plastic and tucked in between blocks of dry ice, I wonder if the \$120 I shelled out for this package will be worth it. Eight friends are coming over for dinner the next afternoon and here sit only three pounds of frozen fish. Torrents of doubt stream through my mind. Are lionfish safe to eat? Am I really going to serve frozen fish? Do I even have enough? Will the beautiful crimson and ink-striped skin look the same after singed by the hot flames of a grill?

After a few minutes, the inner turmoil subsides and the excitement starts to rise. My friends will not care if the lionfish fillets were originally frozen because they know it is for a good cause – three fewer alien species roaming the Caribbean reefs – I tell myself.

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Native to the Pacific region, lionfish range from Australia to Japan. Though in the 1980s, lionfish made their way to the Atlantic Ocean and were first spotted off the coast of southeast Florida. How lionfish were introduced to these waters is unknown, but speculation points to the aquarium trade. Regardless if whether it was accidental or intentional, the alien is taking over.

Without any natural predators, lionfish populations are exploding throughout the Atlantic Ocean, the Caribbean, and the Gulf of Mexico, and can be found from South America to the eastern shore of North Carolina, with occasional sightings as far north as Maine. They are considered one of the most invasive species in these warm, tropical waters that so many enjoy on vacation, including myself.

Over the past ten years, I have scuba dived the waters of the Caribbean and Gulf of Mexico and witnessed the increase in lionfish firsthand. For me, diving creates both a calming effect and a curiosity for life submerged. Cruising around a coral reef with my life source strapped to my back, I frequently creep over the edge and stick my head into small crevices to see what fascinating creatures I can spot. More and more often, a flashy lionfish waits for me - often mere inches in front of my face. And like any good diver who knows their environment, I slowly back away or veer to the side – leaving the venomous creature to rule the roost.

What makes lionfish dangerous to Caribbean and Atlantic waters are their venomous spines, voracious appetite, and fast reproductive capacity. Lionfish can eat the volume of their stomach thirty times over and give birth to miniature predators every four days. Small or juvenile reef fish don't stand a chance if lionfish are nearby. Masters at competition, they often dethrone native species of food and refuge. A study by scientists from Oregon State University found that lionfish could outcompete Nassau grouper for shelter, thereby making Nassau grouper more susceptible to be eaten by bigger predators. The study also found that Nassau grouper did not devour lionfish that

crossed their path. This finding undermines one proposed lionfish control mechanism – training grouper to eat them.

In February 2015, a video popped up on the web showing a grouper corralling a lionfish away from the reef, eating it, and then dashing off. In the Caymans, among other places, dive instructors have been feeding docile groupers bits of lionfish meat with a net. After getting them accustomed to this method of feeding, they moved on to serving them live lionfish in the same nets. Now it seems the



Grouper/ Invasive Lionfish

“The training of predators to eat a lionfish is really training the predators to associate a diver with a handout. Which is unsafe, along many lines, and actually backfires,” says Lad Akins, a lionfish expert at Reef Environmental Education Foundation in Key Largo, Florida, and co-author of *The Lionfish Cookbook*.

Recently, I went diving in the Grand Caymans. On every single dive, I spied lionfish canvassing and hiding in the reefs; ready to ambush their next meal. Dive shop operators, particularly in popular destinations like the Caymans, know the lionfish outbreak is bad for their business, so many take action into their own hands and offer spearfishing trips on a weekly basis to cull lionfish. In addition, large derbies are cropping up all over the region, which creates a sense of sport out of hunting lionfish. Both of these culling techniques can weaken the lionfish explosion, but ultimately are only pinpricks in the vast waters of the Caribbean. Furthermore, on reefs where lionfish hunts take place on a regular basis, the behavior of lionfish changes so that they keep a greater distance from divers and hide deeper in the reefs. This change in behavior could reduce the efficacy of future hunting efforts.

Scientists and environmentalists are beginning to think that eradication of lionfish is not realistic. Thus they are trying to determine what number of lionfish an area can tolerate without causing harm to the rest of the ecosystem. Akins says, “Where we have those regular removal efforts, lionfish populations are being reduced significantly and native fish populations are recovering. The problem is the areas where those regular removals take place are a small part of the total area.”

The control measure that holds the most promise is creating a market for the fish. Restaurants from the Lower East Side of New York to the strip in Las Vegas are vying for lionfish meat – a white, flakey fish that appeals to customers both for taste and the lure of eating something exotic. Yet fulfilling the demand for this delectable invasive species is a challenge. There is no consistent supply chain. Environmentalists and business entrepreneurs see this as an opportunity - fewer lionfish in the

ocean wreaking havoc on the ecosystem and the development of a lucrative new market. However, actually collecting the fish is the difficult part. Net fishing does not work because lionfish often live in the nooks and crannies of coral reefs. Derbies – where divers and snorkelers set out to collect the venomous predator by hand and spears – are sporadic.

Traps are one technique where all parties involved remain optimistic. Current trap prototypes catch the invaders, but still harvest too much bycatch- the unintended catch of other marine species. To solve this, scientists are testing out pheromones to entice the lionfish into traps. If this works, it could be a viable mechanism for harvesting lionfish on a regular basis. Set a trap. Collect the fish. Reset the trap. Sell the lionfish. Repeat.

But placing a price tag on the lionfish invasion has yet to happen. Scientists are still struggling to get their hands around the scope of the problem - range, survival, ecosystem impact, and potential economic threat. For example, submersibles detect lionfish living as deep as 1000 feet, out of reach of divers and the ability of scientists to estimate their numbers. Scientists also worry that lionfish are causing a cascading impact on the food web - jeopardizing the health of coral reefs and the viability of certain commercial fisheries - and adding stress to an already threatened environment. In short, the lionfish invasion is complex, like the flavors of a well-made fish taco.

**Submersibles  
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I read that lionfish tastes like grouper. So I make fish tacos for the main course with a garnish of flavors from the Caribbean – a nod to where the invasive lionfish populations are swelling beyond control. As my guests arrive, I turn on the grill. With the flames turned up to a medium-high heat, the backyard fills with the distinct sweet smell of gas. I scrupulously oil the grates and evenly space out the alien. Skin side up to start. Three minutes, then I flip.

I have to say, eating an alien is delicious. Mild and flakey, the sweet, firm meat held up well on a taco. As numerous hands go for second helpings, they bypass the tortilla and garnishes.

Getting lionfish out of Caribbean reefs and into seafood markets will take more than a few friends cooking the fish on a backyard grill. But it's a start.

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