



Encyclopedia of Life

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## Red swamp Crawfish

*Procambarus clarkii*

For centuries, human commerce has played a role in distributing plant and animal species around the globe. But not every species can claim the title of circumnavigator. Ari Daniel Shapiro journeys to the Gulf Coast of the U.S. to meet a tiny Magellan, the star of an unlikely story that has come full circle.

### Transcript

**Ari:** From the Encyclopedia of Life, this is One Species at a Time. I'm Ari Daniel Shapiro.

Sometimes it's the smallest travelers who end up on the biggest journeys. And in this story, that journey is nothing less than a circumnavigation powered by biology, and by business. We start with *Procambarus clarkii* – the red swamp crawfish. Michael Robertson scissors off the top of a mesh bag stuffed with crawfish.....and pours them onto a sorting table. There are hundreds of them.

**Robertson:** A nice sack here – all very lively crawfish.

**Ari:** Robertson works here, at Big Fisherman Seafood – a well-known crawfish shop in New Orleans. He acts quickly to separate the live, crawling crawfish from the occasional dead ones. Then he boils them in a large pot, along with some garlic. Robertson fishes out a couple of the cooked ones.

**Robertson:** You just peel 'em and eat 'em there. These are done, ready to come out.

**Ari:** Rusty Gaude, with Louisiana Sea Grant, looks on. He's been studying and selling crawfish – in one form or another – for the last 30 years. He says that Louisianans have their French ancestors to thank for crawfish cuisine.

**Gaude:** In France, they had a long tradition of eating crawfish. And so when those French people came over here, they saw an animal – not quite the same, it's actually a different genus.

But it's still a crawfish and they knew exactly what to do with it. And they said, "You're gonna look good in a pot."

**Ari:** Over time, the Louisiana crawfish industry grew. And out of the 37 species of native crawfish here, only two – the red swamp crawfish and the white river crawfish, or *Procambarus zonangulus* – were able to be scaled up for widespread production and consumption.

Now, our journey gets set in motion when in the 1800s, a couple hundred years after France first stepped foot in Louisiana, the French needed help – with their crawfish.

**Gaude:** The population of the native French crawfish has been decimated.

**Ari:** And it wasn't just France. From Spain to Scandinavia, native European crawfish populations were on the decline. Rusty Gaude says the reason behind that decline – was yet another kind of crawfish – a North American variety of the genus *Orconectes*. *Orconectes* was brought to Europe, uninvited. And it carried a North American fungal disease across the Atlantic.

**Gaude:** The European crawfish – once they got exposed to these North American diseases, it pulled the population down, and virtually stopped the possibility of them developing a commercial industry.

**Ari:** The solution was to introduce Louisiana's red swamp crawfish into Europe. And by the way, this is just the first stop in this business-driven journey for these animals. I should say that the last leg of this trip and the most surprising one is happening right now. But at this point we're in the 1900's, and it took Spain years to implement the introduction – to verify and then re-verify this was the right course of action. And people are still divided, decades after the introduction.

**Gaude:** To the families that are involved in the industry, it has been a godsend.

**Ari:** It helped bring back a crawfish festival. And it's become food not just for people in Europe, but also for a number of birds and mammals. But then there are the problems. Like when the crawfish burrow into dikes, riddling them with holes so that the water held inside just flows out. In addition –

**Gaude:** They will go into a partially vegetated area and they will strip it clean. It'll look like the asphalt street that's next to us.

**Ari:** So it's not a simple...

**Gaude:** It's not black and white. It's a full spectrum of gray.

**Ari:** Louisiana's red swamp crawfish has also been introduced into Costa Rica, Kenya, and Nigeria – with business motivating the move every time.

But perhaps its most troublesome introduction – the irony of which I'll get to in a minute – has been in Asia.

**Gaude:** In the case of Japan, they actually brought the Louisiana crawfish not to eat, but to feed to bullfrogs.

**Ari:** Sidenote – the bullfrogs also came from Louisiana. But anyway... the point is that the red swamp crawfish escaped.

**Gaude:** When that happened, nobody will say – nobody really knows. But those crawfish found their way over to China.

**Ari:** They spread through the Chinese rice fields in a flash. And it wasn't long before China turned this new invasive pest into an export. And here's where the loop closes. Rusty Gaude walks me across the street from the seafood shop, into Breau Mart – a New Orleans grocery store. He opens a freezer, and holds up two packages of crawfish – one from Louisiana and one from China.

**Ari:** They look identical.

**Gaude:** Identical – it's from the same animal.

**Ari:** The China's \$8.69.

**Gaude:** And the American is \$17.99.

**Ari:** It's the same amount of crawfish, but that cost is to get the crawfish...

**Gaude:** Process it, peel it out, freeze it, transport it, go through distribution over here, and it still comes in at half the price of ours. It has literally changed the industry. Because now, the only thing that we have a unique handle on is the live animal.

**Ari:** And so... the Louisiana red swamp crawfish has taken up residence across 4 continents – a move fueled by the demands of crawfish eaters the world over. And it remains a vital part of culinary and cultural life, right here in New Orleans... where its global journey began.

**Ari:** Check out some pictures of those fresh Louisiana crawfish at [eol.org](http://eol.org).

Our series, One Species at a Time, is produced by Atlantic Public Media in Woods Hole, Massachusetts. I'm Ari Daniel Shapiro.

## Meet the Scientist

Meet Rusty Gaudé, the scientist featured in the Red Swamp Crawfish podcast:



Rusty Gaudé, Image Credit: Louisiana Sea Grant

### ***Where do you work?***

I am the Louisiana Sea Grant field extension fishery agent for the Mississippi River delta parishes, utilizing a mixed experience base including both private fishery sector and academia. Sharing my NOAA Sea Grant joint appointment as a faculty member of the Louisiana State University (LSU) AgCenter, I am able to draw from the combined resources of both organizations based on the LSU campus located inland at Baton Rouge.

### ***What do you study?***

My research is focused on the commercial quantities of Louisiana quahog clams, I am engaged in developing a new State industry from an underutilized fishery resource.

### ***What are three titles you would give yourself?***

Systemic naturalist, fishery realist, aquacultural optimist (and a native New Orleanian!).

### ***What do you like to do when you are not working?***

Landscape horticulture, working for the advancement of human sensitivity.

### ***What do you like most about science?***

Discovering what is blatant but unrecognized.

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