

OCTOPOLIS

and Octlantis

Octopuses

may be amazing creatures—with their suckered tentacles, ink squirting, complex brains, and so on—but they aren't exactly party animals. In fact, they have reputations as serious loners.

"We do tend to think of octopuses as solitary," marine biologist David Scheel says. "If they're going to get together, it's either for mating or the big one's going to eat the little one."

You'd definitely expect that solitary behavior from a species called gloomy octopuses—like they'd be off by themselves sulking all the time (probably about their name). But it turns out, these animals aren't loners at all. In the subtropical waters off eastern Australia, gloomy octopuses live clustered together in places researchers dubbed Octopolis and Octlantis. More than a dozen octopuses have been seen in each place.

"We think that's because this is a little bit of shelter and a big sea of food, and so it's a great place to hang out," David says. "But in order to do so, they have to tolerate each other."

Of course, tolerating each other doesn't necessarily mean they've become best buddies. The male octopuses spend a lot of time chasing each other out of their dens. Sometimes they squirt water, kicking sand into each other's faces, and researchers even saw one throw a shell at another.

But the most amazing thing about the octopuses at Octopolis and Octlantis is that they communicate among themselves—even when they're fighting. Because they can't speak, they use body language, signaling each other by changing shape and even color.

But life isn't always a brawl. Most of the time the octopuses just hang out together.

When researchers found Octopolis in 2009, they wondered if it was just a one-of-a-kind happening. They noticed the octopuses had built dens around a sunken human-made object possibly made of metal. But several years later, they discovered Octlantis not too far away and not near any sunken human object. Both octopus cities are in Jervis Bay, whose floor is pretty flat and featureless—except for the sunken object at Octopolis and a rock outcropping at Octlantis. Both are ideal for building dens.

FUN FACT

Octopuses have awesome defenses. Not only can they jet away, but they also squirt ink to hide their getaway and to confuse their opponent. In fact, you might say they're well armed. (Sorry, couldn't resist.)



FAQ

IS IT TRUE OCTOPUS ARMS CAN LIVE IF THEY'RE CHOPPED OFF?

Not forever! But they do react to things for a while even after they've been severed—for example, jerking away from pain. The reason they can do that is because two-thirds of the octopus's brainy nerve cells are in its arms, not its head. That means (when they're all attached) an individual arm can figure out how to do things, like breaking into a shellfish, while the animal does something else, like looking for the next snack. It's like octopus arms have minds of their own.

HOW SMART ARE OCTOPUSES?

Octopuses are super smart and even have distinct personalities. The cephalopods have brains similar to mammals in terms of their relative size and complexity. Octopuses can solve problems, like how to open a jar to get to the food inside or, in one case, even escape from their aquarium tanks. They also can learn to recognize shapes and navigate mazes. Like brainy mammals, octopuses are curious animals. They need to keep their minds occupied or they'll grow unhappy. They may even enjoy playing. In one aquarium, an octopus pushed a plastic bottle into the stream of water flowing into its tank—over and over and over, like it was dribbling a ball.

IMAGINING OCTOPUSES

IN ANIMATED FEATURES AND CARTOONS, OCTOPUSES HAVE ALMOST AS MANY PERSONALITIES AS ARMS.

- IN *FINDING NEMO*, one of Nemo's classmates is a young pink octopus named Pearl. When startled, she releases her ink—even if she doesn't want to: "Aw, you made me ink!"
- THE SPLASHY SEA WITCH URSULA, who tricks innocent merfolk in *The Little Mermaid*, is a human-octopus hybrid. She actually only has six tentacles, so you'd have to count her humanlike arms to truly call her an octopus.



NERD OF NOTE:
DAVID SCHEEL

YOU MIGHT CALL David Scheel the Dr. Doolittle of octopuses. OK, David doesn't actually "speak octopus," but he's learning their language.

David has found that octopuses have a surprisingly complex social life. They interact and communicate in a variety of wordless ways.

"They're kind of flashy actually," he says. "The octopuses turn dark, stand up very tall, spread their arms and web very wide, and then they raise their mantle—which is sort of the body sack behind the eyes—they raise that up above their eyes. And then sometimes they will even seek out high ground to do that display on top of."

What are they trying to say? "We think it means, 'I'm not going to back down. I'm this big, and I'm here, so watch out.'" If other octopuses don't heed the warning, the big, flashy ones might chase them away.

How does David know all of this? He spends hours studying octopuses. And, yes, that means he has to go swimming in the ocean, scuba diving with exotic sea creatures, and zip-ping around in submersible vessels. Yeah, it's a tough job. But, you know, he puts up with it for the sake of advancing scientific knowledge.



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READ ABOUT JELLYFISH ON PAGE 74 AND SEA ANGELS ON PAGE 126.