

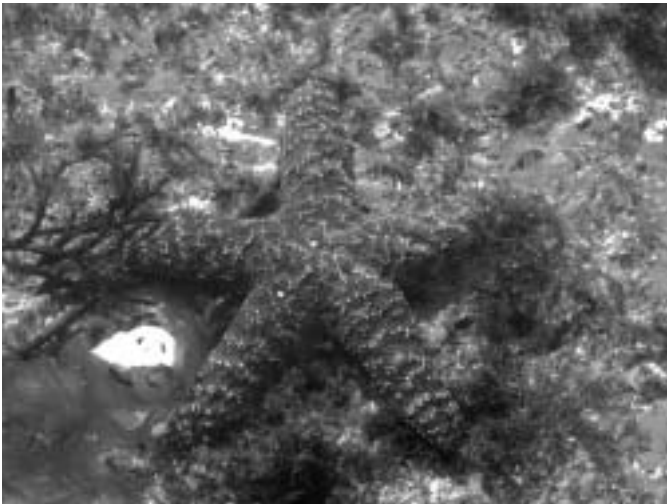
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Exploring Our Little Corner of the World with the Galiano Naturalists

by Sabina Iseli-Otto

Nine Answers About Seastars

It seems that every time people come to visit me on Galiano, we end up walking on the beach and the questions about seastars begin. Perhaps this will be an article that you, too, will be able to hand off to your curious guests. For the most part, these questions are about the ochre seastar – the lovely orange and purple creatures you see in the intertidal zone. There are quite a few other species, too, but they often do things a little bit differently from the ochres (your guests might not have to know that, though). If you're like me, you'll have more questions at the end of this article than you had when you started.



Seastar on Galiano
Photo by the author

Why aren't seastars called starfish?

Well, because they're not fish. While it's true that they're not stars either, it's

more acceptable to think of them as astronomical bodies than as creatures of the sea.

Do seastars have muscles?

Instead of muscles in the rays (arms/legs), they control all of their movement with water pressure. That's one of the reasons they just aren't very edible: they don't have many tasty muscles to eat. The tube feet are muscular, but they're pretty small. Each seastar contains a network of water channels that are used to control the tube feet and their suction-cup tips. Please do not squeeze seastars to see how much water comes out. They don't like it and it doesn't work.

Do seastars have brains?

Like other echinoderms (sand dollars and sea urchins included), seastars don't have a brain. They do have a nervous system, though -- it lies just under the skin and gives them their sense of direction, balance, and food-sense. They don't have ears, eyes, or any other sensory systems like ours, but they are sensitive to chemicals, light, temperature, and orientation.

What's that white spot on top of the seastar?

That white spot is called a *madreporite*. The seastar uses it to pull water into its water vascular system. "Madreporite" is a good word to know: pulling that one out of your hat gives you lots of credit with visitors so you can make up answers to their other questions if you need to.

Is it true that if a seastar loses a leg, the leg can grow into a new seastar?

Yes, it is. Most seastars can grow new ones if a few are nibbled off by seagulls or

cruel children. You can often see these odd creatures on the beach: they might have 3 longer rays and two nubbins just growing into place. In general, the central ring has to be intact for a seastar to grow a new limb, but some species can actually grow a whole new body from just one ray!

How do seastars mate?

They really take their chances at reproducing. The males and females (yes, males and females are different though you can't tell by looking at their outsides), release their gametes (sperm and eggs) directly into the water and hope that a few of them meet and make some young 'uns. It's risky. And because it's so risky, they try to be simultaneous about their releases. They take their cue from the length of the days, the time of day (dawn or dusk), and seem to have a chemical signal that indicates that it's time for action. The spawn usually takes places in the springtime when there is an increase in the sea's temperature.

Why do seastars like to hang out together?

When you see them in clusters, it may be that they're ready to spawn. Because they release their gametes directly into the water, there's a better chance of the male and female gametes getting together if the seastars are close together.

Is it true that seastars can stick their stomachs out to eat?

It's true. They like to eat limpets, chitons, barnacles, mussels, and other munchables. They use the first of their two stomachs to either cover their prey or to get into one of the cracks of the shells. Once they've got the stomach in place, they push their digestive juices into the animals they're eating, then suck out the soupy partly-digested goodies and deal with them in the second stomach.

They eat the most food in the springtime and the amount they consume seems to be tied to the water temperature. In the winter, when the water is coldest, a group of 100 seastars might consume a total of 3g of food in a tidal cycle. On the other hand, in the summer when the water heats up, they can increase that amount tenfold. Climate change might cause seastar feeding patterns to alter drastically as ocean temperatures change just a few degrees.

Do seastars migrate?

Nope. Studies that track their movement show that they're homebodies. They don't like to travel very far.

I see barnacles growing on oysters and clams and chitons. Why don't barnacles grow on seastars?

On top of the seastar, mixed in with the white spines, are little pincers that discourage other organisms from settling in. If you let your arm rest on top of a seastar for about 30 seconds and then pull it away slowly, you might be able to feel that these little pincers doing their teeny-tiny best to hold onto you. Don't worry, they're neither strong nor painful. Just small enough to prevent barnacle babies from finding a home.

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Natural Mysteries

Last month's mystery was: *I have often heard a loud screech following the familiar call of the Barred Owl. Do they shriek when they attack their prey?* Barred Owls make a number of different calls, most of them being variations on the familiar "who cooks for you, who cooks for you all". Sometimes the last note is the only note called, and it's a descending and drawn out note so that it sounds something like a cry, especially

when made by the female whose voice is higher pitched than the male's. There's also another sound, more like an ascending whistle or shriek, that the female makes in response to the male when she's receptive to breeding. This whistle-shriek sound is similar to the call of juveniles begging for food, so the "screech" mentioned in the question could have been a juvenile rather than an adult. In any case, Barred Owls don't shriek when they attack their prey. Like other owls they are totally silent (not even wing sounds) when they swoop down to make a kill.

This month's Natural Mystery: When beavers need to poop, do they go up on land or just do it in the water, or do they do it in the water? In other words, are they more like water mammals or land mammals that way? (We wonder if this naturalist might have spent too much time at the Spring Wingding's "Poo Corner" last month.)

Have an answer? Send your thoughts to galianonaturalists@gulfislands.com. Have a Natural Mystery of your own? Let us know, and we'll try to answer it.

THE GALIANO NATURALISTS are a group of curious explorers who enjoy observing, marveling, and sharing information about the natural world around us. Come join us. How? Just send us an email at galianonaturalists@gulfislands.com. Visit our website at <http://gulfnet.sd64.bc.ca/GalianoNaturalists.html>.