

>>Rob Diaz de Villegas: One day, Randall and her crew arrived at one of their sites and saw that they had a visitor.

For a project focused on marine predators, this is as close as we get to Shark Week. Predatory snails are more our thing, from the football sized horse conch on down. And along much of north Florida's coast, the crown conch is a key player.

They can decimate a healthy oyster reef. In the salt marshes that Randall uses in her NSF funded biodiversity study, they might be heroes.

>>Randall Hughes: So this is a crown conch. It's one of the main predators of periwinkle snails that we have here in the marsh. Crown conchs can eat the periwinkles or they can scare them.

>>Rob Diaz de Villegas: Periwinkles don't eat Spartina directly.

>>Randall Hughes: They scrape a little scar on the live Spartina and then that can be colonized by fungus and they'll consume that fungus.

>>Rob Diaz de Villegas: Eating and scaring periwinkles can prevent them from shredding habitat forming marsh grass.

>>Randall Hughes: So if the crown conch eats enough snails that there aren't many snails around, the crown conch can indirectly benefit the plant.

>>Rob Diaz de Villegas: Scared periwinkles climb Spartina. And this is where it gets trickier. They could be too scared to eat, or, trapped on the plant, they might eat more.

>>Randall Hughes: And it depends a lot on tidal height and how long the tide is in, how long this crown conchs have to sort of forage around, and how long the snails are forced to stay up on the plant.

>>Rob Diaz de Villegas: David Kimbro conducted an experiment with periwinkle snails and their predators, with different tubs simulating different tidal conditions.

>>David Kimbro: And I actually saw in one set of tides, the tides that sort of mimic west of Apalachicola, they just totally mowed down their tree house. In the tides that mimic the tides east of Apalachicola, they just stayed up on the plant and were completely frozen with fear and did nothing to the plant.

[music]

>>Narrator: In the Grass, On the Reef is funded by the National Science Foundation.