



Department of Planning and Natural Resources
Division of Fish and Wildlife
U.S.V.I. Animal Fact Sheet #14
Spiny Lobster
Panulirus argus



Description

The spiny lobster, *Panulirus argus*, could easily be an emblem for the plentifulness of our Virgin Islands nearshore waters. Their large size (averaging 1 to 3 lbs but reaching over 15 lbs) and delectable taste make spiny lobsters a valuable food for locals and tourists alike. For this reason, spiny lobsters support an important local commercial fishery. Recreational fishers also pursue spiny lobsters. And pleasure divers enjoy them too - a close-up encounter with a big spiny lobster can add a memorable thrill to any dive.



True to their name, spiny lobsters are indeed spiny, with many stout spines arising from the hard shell that covers their body (called an exoskeleton). The two largest spines or "horns" project forward over their eyes. Spiny lobsters have five pairs of walking legs, but they lack the large claws of some other lobster species from colder climates. Generally, lobsters use their legs to move about the seafloor. When startled, however, a spiny lobster uses powerful flips of its muscular tail to make a rapid backwards escape. A large pair of antennae also assists with self-defense. Spiny lobsters will wave their antennae at intruders, often maintaining contact so as to keep the enemy at a safe distance. Two smaller forked antennae, called antennules, are used for taste, as are the tips of the legs (imagine tasting food with your feet!). Body coloration is variable, but is usually orange-brown on back fading to tan on the sides. The tail fan has distinct dark bands.

Scientists compare lobsters on the basis of size, typically using a measure called carapace length. The carapace is the fused and hard-shelled back portion of the

lobster that extends from the eyes to the first flexible segment of the tail.

Identification

Although at least seven species of lobsters may be found in waters of the USVI, spiny lobsters grow the largest, and adults are usually easy to recognize. Spiny lobsters have two long antennae, whereas slipper lobsters (*Scyllarides*, *Arctides*, *Parribacus*) and copper lobsters (*Palinurellus gundlachi*) have short antennae. Occasionally, you might encounter one of two closely related species: the spotted spiny lobster (*Panulirus guttatus*) or more rarely, the olive-green colored smoothtail spiny lobster (*Panulirus laevicauda*). Both of these species have many more white spots than *Panulirus argus*, notably with spots extending onto their legs. In contrast, spiny lobsters have only stripes on their legs (no spots), and only a few white spots on their carapace and tail.

Common Names

There is no consensus on the best common name to use for *Panulirus argus*. Some scientists call them Caribbean spiny lobsters; others call them West Atlantic spiny lobsters or Florida spiny lobsters. Here, we call them spiny lobsters. Most locals simply use the name lobster, or in Spanish 'Langosta.'

Classification

Lobsters are invertebrates (animals without backbones) that belong to the subphylum Crustacea. This large and diverse group includes many familiar crabs and shrimps. All lobsters are classified in the order Decapoda (meaning ten legs). Spiny lobsters belong to the family Palinuridae, with about 49 species worldwide.

Distribution

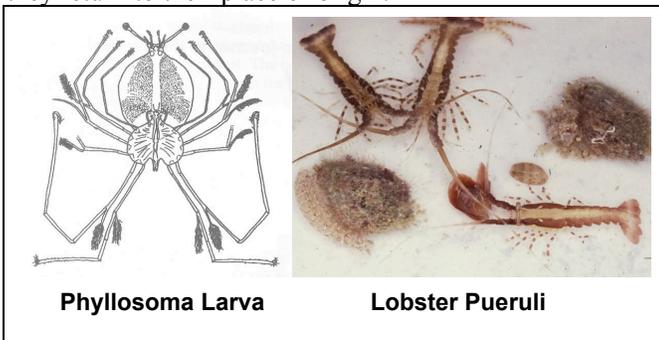
Spiny lobsters occur in nearshore waters throughout the Caribbean Sea, the Bahamas, and Bermuda. They inhabit coastal waters of the Americas, from North Carolina southward to Brazil. Occasionally, spiny lobsters have been caught in the Gulf of Guinea (western Africa), but they don't seem to form stable populations there. In almost every place that spiny lobsters occur, they are harvested by fishers, thereby supporting fisheries and making a contribution to local economies. In Florida, for example, spiny lobsters are perhaps the single most economically important marine species.

Life History & Habitat

To appreciate the biology of spiny lobsters, one should first realize that their life history is a complex cycle with five distinct phases: adult, egg, phyllosome larva, puerulus larva, and juvenile. Each phase occurs in a different habitat.

A female lobster becomes mature at 2-3 years of age (carapace length of ~3-1/4 inches). She mates with a mature male, who deposits two sticky gray patches of sperm (known as "tar spots" or tar patches") on her belly. Eggs are fertilized as the female lays them, but she doesn't release them. Rather, she holds the bright orange-red eggs in a bundle on the underside of her tail. After 2-4 weeks of development, the eggs, now brownish colored, are ready to hatch.

Females usually move to deeper waters for releasing their young. Tiny lobster larvae called phyllosome larvae (which means leaf-shaped body) hatch from the eggs. The phyllosome phase is pelagic - larvae drift in the open ocean at the mercy of currents. The phase may last from 6 months to over a year. Obviously, spending so much time adrift can result in larvae being carried a very long way - perhaps thousands of miles. This raises some serious questions about where our lobsters come from. Scientists are still trying to determine how far the larvae drift, and how often they return to their place of origin.



Phyllosoma Larva

Lobster Pueruli

At some point during their pelagic phase, lobster larvae change into a postlarval form known as a puerulus. Although still tiny (~ 1/4-inch carapace length) and mostly transparent, the puerulus phase actively swims towards shore, seeking out habitats that are heavily vegetated with algae or seagrass. They prefer one particular species of red algae called *Laurencia*. Because such vegetated areas occur in mangrove lagoons, estuaries, seagrass beds, and protected shallow water bays, these areas are critical nursery grounds for young spiny lobsters.

Shortly after settling into suitable habitat, the puerulus changes into a juvenile, now resembling an adult lobster in miniature form. As juveniles grow and mature, they move from shallow nursery habitats to hardbottom habitats in progressively deeper waters where they will live as adults.

During the spawning season, adult spiny lobsters are known to move towards deeper waters, such as shelf-edge reefs. In Florida and the Bahamas, spiny lobsters also make spectacular seasonal migrations (usually in the Fall), where hundreds of lobsters line up head-to-tail. With the antennae of the one behind touching tail of the one ahead, they move *en masse* towards deeper waters. Although reported in the USVI, such mass migrations appear to be only rarely

observed here.

Ecology & Behavior

Adult spiny lobsters are nocturnal and gregarious. By daylight, they generally remain hidden in dens that are formed by caves, crevices, ledges, coral heads or large sponges. Lobster dens are shelters from predators, and spiny lobsters seem to prefer sharing their dens with others. At around sunset, they emerge from shelters to forage (feed) alone away from their dens. Sometimes, they can cover large distances (over 200 yards) in search of prey, their wanderings often taking them into nearby areas of reef, sand and seagrass habitats.

Ecologically, adult spiny lobsters are important "keystone" predators. That is, their feeding controls the populations of the many different species that they eat. Spiny lobsters feed primarily on snails, clams, small crabs and urchins, using their strong jaws to crush and open the shells of their prey. Sometimes spiny lobsters will also scavenge meals (such as a dead fish) but they generally prefer live prey.

Juvenile lobsters suffer from high predation, falling victim to many different fish species, octopus, and crabs. However as they get larger, fewer predators can handle such a spiny meal. The most important predators on adult spiny lobsters are large groupers, like the goliath grouper (jewfish), sharks, moray eels, and loggerhead sea turtles.

Conservation

Federal and territorial regulations protect spiny lobsters. In the USVI, it is illegal to harvest spiny lobsters that measure less than 3-1/2 inch carapace length (89 mm). Divers may catch lobsters by hand or with a snare only - spearing or gigging is never allowed. Commercial fishers may catch lobsters in traps. Poisons (such as bleach) cannot be used to catch lobsters or any other marine species. Additionally, female lobsters bearing eggs cannot be harvested. Put "berried" females back so that they can hatch their eggs.

References for this article are available upon request from DFW. For more information on this or other animals in the USVI please visit our web site at:

www.vifishandwildlife.com

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