

## Student reading

# Tarpon Spawning

The goal for all living things is to create a new generation to carry on their genetic information. For tarpon this is a goal too! Tarpon do not give birth to live babies, instead they broadcast spawn. This means the male fish release sperm in large amounts and the females release large amounts of eggs. They do this in the deep ocean away from land, or "offshore". Large groups of tarpon go offshore to spawn.



Photo by Paul Dabil

Adult tarpon gather in large groups before swimming to deep water to spawn.

These groups are called spawning aggregations. A spawning aggregation can be hundreds of fish. They are usually far offshore in the pelagic ocean. "Pelagic" means that the bottom is very far down, maybe hundreds to thousands of feet deep. In the pelagic ocean there is very little "life" like you might see on a coral reef. It is deep, and the water tends to be very dark past 500 feet since light does not travel through the water deeper than that. At 1,000 feet the ocean is completely dark! The pelagic zone is where many of the large ocean animals you can think of live like whales, large sharks and manta rays. When tarpon move offshore to spawn, they do not stay out there for very long. They spawn and then head back toward shallow areas close to shore such as bays and estuaries. An estuary is an area where fresh and salt water mix, creating a food-rich environment that gives tarpon the energy they need after their journey offshore.



Tarpon larvae do not look like adult tarpon! Instead, they have long, thin bodies that look almost like eels.

Once the fish all meet in a large group to spawn in the pelagic ocean, they release millions of sperm and millions of eggs that start forming tiny baby fish! Where tarpon spawn offshore, there are many fish, sharks, birds, and whales that come to feast on the millions of eggs and sperm that are released. It is a giant buffet for these animals that live near the ocean's surface. Since other fish and other sea animals eat them, many of the sperm and eggs never become baby fish, called larvae.

A fisherman lets a large juvenile tarpon go after catching and tagging it. Tags help scientists see where the tarpon goes after it is let go.



Juvenile tarpon look just like adult tarpon, but are much smaller in size.

The spawning sites are usually in areas of the ocean where water flow, waves and winds are most likely to carry the sperm, eggs and eventually the tiny larvae into habitats that are close to shore. These are safe places that they will need to survive and grow.

In Florida, tarpon are ready to spawn when they reach ages seven to twelve. But it gets more complicated: how big a tarpon can grow; how long a tarpon lives; and the age when a tarpon can spawn changes based on where they live. For example, tarpon in Costa Rica spawn when they are much younger, but these tarpon do not grow to be as large as the tarpon in Florida waters. The size differences in fish appear to be natural and related to what they can find to eat in that area and also how many predators there might be. Scientists do not know whether each mature tarpon spawns every year. We do know that spawning tends to happen in the late spring and through the summer months. But research has shown scientists that tarpon tend to spawn when the moon is at its biggest and brightest or on nights when you can't see a moon.

Fishermen can be a really great help to scientists by recording and tracking fish behavior. Volunteers help scientists' catch, tag, and release tarpon and other species. Scientists sometimes "tag" fish with tracking tags. These tags show scientists the long distance movements of these tarpon without the scientists having to follow the tarpon around. Tags like this also record where tarpon swim and how deep they go. Because of these tags, some scientists have recorded tarpon swimming over 100 miles offshore to spawn. One study of tagged tarpon showed that some fish can even dive as deep as 400 feet right before the full and new moons. Scientists think that this behavior might have to do with the fish getting ready to spawn.

