

BONEFISH BIOLOGY, LIFECYCLE, AND SPAWNING



The Bonefish

Bonefish are fast, silver fish known for their speed and ability to blend in with their surroundings. Most common to the Bahamian flats fishery is the bonefish species *Albula vulpes*, which means 'white fox'. Two other bonefish species found in The Bahamas are *Albula goreensis* and *Albula conorinchus*, but these species live in much deeper water and are not part of the flats fishery.



Lifecycle:

Spawning: Bonefish spawn offshore during full and new moon cycles, typically between October and April. They gather in large groups in sheltered areas called pre-spawning aggregations with access to deep-water drop-offs. At night, the bonefish make their way to the deep water offshore to spawn.

Larval Stage: After spawning, fertilized eggs hatch into larvae that drift in ocean currents for 41–71 days. During this time, they are vulnerable to predators and environmental changes.

Juvenile Stage: Once larvae reach shallow, sandy, or muddy bays, they transform into juveniles. These young bonefish rely on mangroves and seagrass beds for shelter and food. These juvenile bonefish can be seen schooling with Mottled Mojarra (locally known as 'shad') as a way to hide from predators, which is called social mimicry.

Adult Stage: Mature bonefish spend their time in shallow flats, where they feed on crabs, shrimp, clams, worms, and small fish. They can live up to 20 years and grow to over 30 inches in length. Adult bonefish spend most of their time in a small home range of less than one square mile, except when they migrate to spawn.

Spawning Behaviour

Migration: Adults travel long distances from their home flats to reach spawning sites.

Porpoising: In the pre-spawning aggregations, females can be seen swimming to the surface gulping air to fill their stomachs.

Deep Dives: At night, bonefish dive hundreds of feet into deep ocean waters to spawn. The extreme pressure changes as they quickly ascend expands the air in their stomachs, which causes the eggs and sperm to be released.

Egg Release: Females release eggs while males release sperm, allowing fertilization to occur in open water. After the eggs hatch, the larvae begin their journey in the ocean currents.

Ecological Importance

Bonefish play a vital role in marine ecosystems. They are a key food source for larger predators like sharks and barracudas. The presence of bonefish indicates healthy flats ecosystems, which include mangroves and seagrass beds. Understanding and protecting the lifecycle of bonefish is essential for sustaining the flats fishery and preserving The Bahamas' marine biodiversity. Conservation efforts ensure that these remarkable fish continue to thrive for future generations.