

Reproduction in a Bamboo Shark Unexplained

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The Belle Isle Aquarium in Detroit has announced the birth of two new White-Spotted Bamboo Sharks. The shark births aroused curiosity due to the fact that the mother is housed with only one other adult bamboo shark, which is also a female. The mother laid its eggs almost fifteen weeks prior to the hatching. This is the first time in the Belle Isle Aquarium's history that this type of birth has occurred and only the second time such a phenomenon has occurred at an accredited zoo or aquarium.

Late last year, a similar event occurred at the Henry Doorly Zoo, in Omaha, NE. There, a Bonnethead Shark gave birth to a baby shark with no male present. The Bonnethead Shark occurrence was the first reported instance that raised suspicions that sharks may be able to reproduce in an unusual way.

The female bamboo sharks have laid eggs in the past. This is not unexpected, as many animals, such as chickens, will lay infertile eggs even if there is not a male to mate with. Normally, the eggs are assumed to be infertile and are discarded. The female Bamboo Shark at the Belle Isle Aquarium laid her eggs in late winter. The eggs were left in the tank after Doug Sweet, Curator of Fishes at the Aquarium, heard of the Bonnethead Shark at the Henry Doorly Zoo. Two eggs hatched in July, and the third egg hatched in September. Sweet expects more baby sharks will be born in the next several weeks.

Doug Sweet states, "We are very excited about these births and eager to learn why this happened. We hope our research will provide new information on the White-Spotted Bamboo Shark's reproduction process."

Genetic testing will soon begin on the newly hatched sharks to determine what mode of reproduction may have occurred:

- The shark may have reproduced through a process called 'parthenogenesis.' Parthenogenesis is a form of reproduction in which the egg develops into a new individual without fertilization by sperm. Parthenogenesis has been observed in many lower animals, including some snails and insects. All offspring produced through parthenogenesis are identical in all inherited respects to the mother.
- The female shark was fertilized by a male at a young age and has retained the live sperm for years until she was mature enough to conceive.
- The shark female could be a hermaphrodite, having both male and female reproductive characteristics and be able to self-fertilize. This is common in invertebrates, such as snails, and some lower vertebrates, such as the Mangrove Killifish and the Goby fish.

White-Spotted Bamboo Sharks live in crevices among coral reefs in the south Pacific Ocean. Normally nocturnal, Bamboo Sharks hide during the day and come out at night to search the reef for small fish, crabs, squid, and octopus to feed on. The shark can live up to 25 years in captivity.

Though they are true sharks, Bamboo Sharks are not shaped like the more familiar sharks, such as the Great White, Hammerhead, and Tiger Sharks. Their average size falls in a range between two to three feet, and their narrow body and flattened heads are adapted to wiggling under and into coral heads and crevices to catch their prey.

The young sharks are doing well and can now be seen on exhibit daily at the Belle Isle Aquarium.