



Photo credit: M. Potenski

Feeding effects studied

A two-year study found that supplemental feeding changes the activity patterns, feeding habits and reproduction of stingrays.

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A Nova Southeastern University graduate student has just completed what is believed to be the first direct study of the effects of human feeding on marine wildlife.

Mark Corcoran, 29, successfully defended his master's thesis last month in Dania Beach on the Cayman Islands' most popular tourist attraction, Stingray City and the Sandbar, where as many as 3,000 people per day interact with Southern stingrays.

The two-year study, funded by the Guy Harvey Research Institute, found that supplemental feeding changes the activity patterns, feeding habits and even reproduction of stingrays.

"Now they are fed mostly frozen squid from California," Corcoran said.

``They wouldn't eat a squid in their natural environment -- mainly blue crabs and shrimp."

Corcoran and colleagues tagged and tracked more than 150 stingrays, comparing those that frequented the knee-deep Sandbar and the 15-foot deep Stingray City dive site in North Sound with unfed wild rays from South Sound and other habitats.

They found that the fed rays remained at the Sandbar during the day, ranged around a bit at night and then returned to the Sandbar the next morning. The wild rays headed out to deeper water during the day and returned to South Sound at night, moving around farther and more frequently than their human-habituated counterparts.

"The supplemental feeding reversed the activity pattern," Corcoran said. ``It changed from resting during the day and foraging at night to reversal of that pattern."

The researchers concluded that tidal phase had no effect on the animals' activity space.

The scientists also noted that the fed animals were much fatter than their wild cousins and tended to reproduce all year long on the Sandbar instead of in cycles.

The study has wide-ranging implications for watersports operators, marine resources managers and lawmakers. Currently, supplemental feeding tourist attractions are conducted at more than 300 sites in nearly 40 countries worldwide. Stingrays are fed in the Bahamas, Caribbean, South Pacific, Indian Ocean and South America.

Florida prohibits underwater feeding of marine life in its waters. The Cayman Islands have banned shark feeding and are considering regulating stingray encounters.

Gina Ebanks-Petrie, director of the Cayman Islands Department of the Environment, says establishing voluntary guidelines for stingray encounters has not worked.

"We're hopeful that, not too long from now, we'll have regulations that address what operators can and can't do that will allow us to control the type and amount of food and stop other stingray interaction sites from being set up around the island," Ebanks-Petrie said.

Some of the proposed regulations include: licensing boat tour operators, designating anchorages and no-boat-entry zones around Stingray City and the Sandbar, limiting the number and duration of simultaneous boat tours at the Sandbar, prohibiting hook-and-line fishing in the feeding zones, prohibiting shoes or fins at the Sandbar and regulating the types and amount of food dispensed.

If adopted, penalties for violators would be stiff -- fines of up to \$600,000 (U.S.), prison for up to a year and seizure of vessel and equipment. Ebanks-Petrie says the government has appropriated funds for a law-enforcement officer and boat to patrol the feeding sites.

There are no plans to shut down either Stingray City or the Sandbar, she said.
