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A Single Woman's Saga for SAVING THE CORAL REEFS

Look but don't touch the coral reefs," graduate student Helen Talge cautions divers. After a three-month study at scenic Looe Key National Marine Sanctuary near the lower keys, Talge is convinced that divers' love for the reefs may cause its demise.

For her 1989 study, Talge watched the underwater activities of 206 divers and snorkelers and kept a tally of how often a single diver would come into contact with the coral to better determine how much touching a reef can withstand before it begins to deteriorate.

For years marine biologists have known that boat anchors, water pollution and turbidity damage coral polyps; but Talge's study is the first to link recreational diving to reef deterioration. To gather her evidence, Talge spent 67 hours submerged underwater and marked a slate every time she saw someone touch, kick or scrape the reef.

She found that scuba divers touched the living coral an average of seven times during a half hour dive. Snorkelers touched the reef an average of once per half hour dive, but the snorkelers were more likely to stand on the living reef, which she defines as abuse to the coral.

When the coral is touched, brushed or stood upon, the mucus layer that protects the coral polyp is removed, leaving the coral more prone to infectious bacteria and a stagnation of growth. Too much contact kills the coral.

"A simple touch or scratch can trigger what is called a 'Shut Down Reaction' in corals that can kill a coral head in a matter of hours," Talge wrote in a report presented in 1990 to the American Academy of Underwater Sciences. "This reaction is very contagious and can pass to other corals, possibly killing an entire reef."

The graduate student said most of the divers whom she observed touched or contacted the coral inadvertently and only about seven percent of the 206 scuba divers deliberately touched or broke the coral.

In a further breakdown, Talge's study showed: Scuba divers were more likely to damage the coral than snorkelers;



At an age when some women begin to think about grandchildren, Helen Talge began to think about graduate school.

men were more likely to touch the reef than women; and divers with gloves had more contact than divers without.

Talge said the figures do not bode well for the coral reefs. She noted that since the reefs attract more than one million people every year, it's logical to believe that the high rate of diving activity won't give the reef sufficient time to recuperate from its human contact.

The influx of divers, boat grounding and water quality are all factors affecting the reef. And Talge allows that something people don't even want to think about, but that has a profound effect on the coral, is its coming into contact with



Graduate student Helen Talge's study of coral was the first to link recreational diving with reef deterioration.

human urine. She said that because waters around reefs generally lack nutrients, 300 divers urinating in the water could increase nitrogen concentration of the water by 25 to 50 percent, hindering the reef's growth and stimulating harmful algae. Also, when divers were treading water, they created sediment clouds stressful for the corals.

Biologists agree that the reefs in the Florida Keys have been degrading in recent years. "It's just not the way it (coral) was 30 years ago," Talge said.

"The reef organisms are slow growing and slow to respond to environmental changes, so we need to act now while the reefs are still alive," she continued. Talge also added that the conservation groups and water sanctuary management are very concerned about the status of the reefs. And charter captains in the Keys are also concerned about them. "They know that a healthy reef is their bread and butter."

Talge conducted her research project with assistance from the Nature Conservancy, the state Department of Natural Resources (DNR) and officials at Looe Key National Marine Sanctuary. **USF**

By Larry Keough

I walked into the Marine Science Laboratory at USF's St. Petersburg campus—it used to be called "A" Building—and it seemed as if I were underwater already. The walls were painted a pale, watery blue and there was a constant hum overhead, like a boat engine idling on the surface.

Prowling around the second floor, I found Helen Talge in a big, sunny laboratory. She was finishing a late breakfast doughnut. Her desk faced a wall, but on the east side, there was a wide window looking out to Bayboro Harbor. Talge is a spare woman with closely cropped white hair. She wears big black-rimmed glasses, safely anchored with a strap around the back, as if she thought they might float away.

At 55, Talge is a graduate student in marine biology at USF, studying problems of coral. Recently she presented a paper on her work to the American Academy of Underwater Science. Her study reveals that coral reefs off the continental United States suffer from a "stress-related syndrome," for which divers may share much of the blame. Talge spends a lot of time underwater in scuba gear as well as here at her desk.

But, like a lot of "fifty-something" women, this is not what she has always done, or even what she ever planned to do.

"From the age of 8 to 18, I studied ballet and classical music," she said in her soft but clear voice. After high school she became a professional dancer in a chorus line, traveling around the country and performing in night clubs.

"That's where I met my husband," she said.

After 18 years of marriage, her husband, who had been a manufacturer in Kansas City, died. Talge was 40 years old. She has no children.

"His death left me in a tremendous void," she said. "I was in a great deal of pain. I was a very dependent person; my husband made all the decisions. I had never even paid a bill. When my attorney asked me how much I needed to live on, I couldn't tell him.

"I set out on a course of self-discovery. I had to find a better way of living. I started meditating." After five years and a lot of introspection, she thought, "I never had a chance to go to college before." By that time, she had enough self-confidence to tackle it. She and her husband had spent a lot of time in Key West, so she decided to live there. She

entered junior college.

"I had never taken biology in high school, so I took some marine biology courses and thoroughly loved them. Then I wanted to know why everybody was talking about chemistry, so I took a chemistry course. So that's the way I decided my courses—out of curiosity. I just put one foot in front of the other and followed the path of least resistance until, finally, one of the counselors said, "You just need a couple things here and there, and you'll have enough to graduate."

For her junior and senior years, she went to stay with her sister in New Jersey and attended Fairleigh Dickinson, a small private university. Her fellow students were 18-to-20 year-olds. She was fifty-something.

"I was called a non-traditional student, and that label has stuck with me," she said laughing. Talge does not laugh often but has a ready smile and a calm, sure way of speaking. She is friendly and comfortable to talk with and shows no lack of self confidence at all at this time in her life.

She went with other students for a semester of marine study at St. Croix, Virgin Islands. "We lived in dormitories on a remote part of the island. Nobody had cars. Bicycles and walking were the only forms of transportation. We had a lot of work and were very busy. Much to my surprise, I was able to keep up with (the younger students) and it was marvelous." It was during this time that she became interested in coral, which has developed into the current work on her master's degree at USF.

Talge rides her bike to school, and she conducts a yoga class on campus. Her husband, who was older than she, did not like to travel, so this fifty-something adventurer has learned to travel on her own: Israel, Rome, Australia. She has also learned to camp out. She and a friend made a bird-watching trek to Texas last December.

I asked her if she ever wondered at the change she has made in her later years. She said, "No, it just comes as naturally as breathing. But now that you mention it, yes, I guess I have come a long way—a complete 180-degree turn."

By Niela Eliason

Editor's Note: Niela Eliason, a 1980 graduate of USF St. Petersburg, writes "Fifty-something," a weekly column in The St. Petersburg Times, where this story first appeared.