

# major starfish invasion feared here

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The moderate-sized herd of coral-eating "crown of thorns" starfish that was spotted in broad daylight a mile off the Molokai coast could signal a major invasion of the Islands, in the view of one marine biologist.

He is Dr. Peter Wilson, a fishery management biologist with the U.S. Trust Territory and the U.S. Department of Interior's field project coordinator in its massive effort to control the catastrophic invasion of starfish in the South Pacific.

**YESTERDAY WILSON** talked about Dr. Thomas H. Richert's reported discovery of the Molokai starfish.

"If he saw them in the day, then undoubtedly there is a major infestation. In daylight, if they are in small numbers, they hide in crevices and under rocks.

"When they become dense, they come out and start feeding 24 hours a day and competing with each other for food," Wilson said in an interview at the Outrigger Canoe Club.

He said a general rule developed by scientists combating the animals in the South Pacific is that if you can see one in the day, you can see four at night.

**THEY CAN BE** detected during daylight hours, however, because of the white coral "skeleton" they leave behind. When this is spotted, divers go down and root them out.

Richert told The Advertiser he made his finding in the Kalohi Channel, five miles east of Kaunakakai, at 2 p.m. Saturday.

As Wilson spoke, yet another heavy concentration of the 16-limbed starfish was reported off Fleming's Beach, 15 miles west of Lahaina.

**DR. ALBERT H. BANNER**, professor of zoology at the University of Hawaii and in charge of a scientific survey of the starfish status here, said the new concentration was spotted two weeks ago by Bob Dian, who operates glass bottom boats along the Maui coast.

Dian said he saw hundreds of the starfish three to four inches long in about 15 feet of water.

"Their size would indicate that it is a new supply of very



Tom Goreau Photo

In clear waters off Truk, a diver-scientist warily probes through a cluster of the starfish.

young ones," Banner speculated. "We have not checked this out."

**BANNER SAID** he is trying to organize a scientific party to investigate on Sept. 6 and 7 the concentrations reported by both Richert and Dian.

If their findings indicate the starfish constitute a serious threat to the Islands, the State will take action, Michio Takata, director of the State Department of Land and Natural Resources, told The Advertiser.

"It is entirely premature for me to say anything without the findings of Dr. Banner and his group," Takata said. "After we receive information that supports the reports, then we will decide on a course of action.

**"IF THE SITUATION** warrants action, we will take action. We are fully aware of the danger the starfish pose and are fully aware of the problem in other areas," he said.

Traveling in herds of 10,000 to 20,000, the starfish, scientifically called *acanthaster planci*, have devastated expansive areas of reef in Australia, Guam and Truk.

John Harding, an Australian who worked as a photo journalist with scientists in the South Pacific, said here that about 250 miles of Australia's Great Barrier Reef has been 99 per cent stripped of its coral.

**ABOUT 20 MILES** of Guam's leeward coast has met a similar fate, and Wilson said the problem is about as bad on Truk where coral reefs jutting out of its famous lagoon have been devastated.

Wilson said that 36 top scientists are now completing their work in the South Pacific and a report on their findings will be issued soon by the Department of Interior.

The study, which covered 3 million square miles, was a cooperative effort by the Department of Interior, the Navy, Coast Guard and Air Force, and the University of Guam, where small teams of diver-scientists were briefed and organized, Wilson said.

**DR. RICHARD CHESHER**, professor at the University of Guam, is director of the program, supported by a \$225,000 grant from the Department of Interior and the National Science Foundation.

Wilson said scientists there, which included Dr. Banner and others from Hawaii, had termed the sudden catastrophic explosion of the starfish a natural disaster.

"It is one of the greatest natural disasters ever observed," Wilson said, "and it should be treated in the same manner as a typhoon, plague or similar disaster."

He said the scientists are not certain of the possible adverse effects of the voracious starfish, but they are assuming the worst could happen.

**WILSON SAID** BY eating the coral, the starfish kill the reef. A green, slimy algae then forms, and the reef possibly can be broken into smaller particles by winds and waves.

If reefs are destroyed in this way, then entire islands conceivably would be vulnerable to erosion and other effects of the elements. Another adverse effect is that the starfish are depriving other fish, a source of protein for the islands, of their food and thus upsetting the food chain.

But one theory has it that the problem was originally caused as man interrupted the balance to begin with, Wilson indicated.

**HE EXPLAINED THAT** a prevailing view is that by pol-

luting, destroying or otherwise killing coral, man had guaranteed that more starfish larvae, normally consumed by coral, would grow into adult starfish.

Wilson said that a starfish can lay between 1 million and 2 million eggs. Normally, fewer ever become adults because they are eaten by coral. Now, possibly, a greater proportion are making it into adulthood.

He said that coral had been the largest controlling factor of starfish propagation.

**SCIENTISTS HAVE** seen tens of thousands of the starfish moving in herds into live coral, leaving a trail of white skeletal material behind.

By tagging techniques, the starfish, whose poisonous, razor sharp spines can cause nausea, have been known to move about a half mile in one month.

Injection with formaldehyde appears to be the best way of controlling them for the present, Wilson indicated. One diver can kill 350 in an hour in this way. A team of two can kill about 2,000 a day, Wilson said.

Scientists estimate that the starfish problem in the South Pacific can be brought under control in about two years, if sufficient funds are made available.

**WILSON SAID THE** Trust Territory was considering making a request for \$300,000 in Federal funds for a control program.

The program under consideration would have two phases, Wilson said. First, teams of divers need to be trained, and equipped and sent out into the field to do the killing.

Just as important, he said, would be an education program for the local people to make them aware of the problem so they will report and help control the starfish.