

Off French Frigate Shoals

Big Coral Discovery Reported

By Helen Altom
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Large reefs dominated by corals previously thought to be rare or absent from Hawaii were discovered by five Hawaii marine biologists on a recent expedition to French Frigate Shoals, 500 miles northwest of Oahu.

"Not only were they there, they were in great abundance and they were huge," said Richard Grigg of the University of Hawaii's Institute of Marine Biology, who led the expedition.

"Because they were so abundant and so large, it underscores how little we know about the Northwestern Hawaiian Islands," he said.

"It's like discovering a frigate bird or a large animal that would be hard to overlook had it been searched out."

He said two types of coral were found, both belonging to a group of corals known as Acropora.

"THE FIND IS of significance because Acropora corals are among the most diverse, abundant and rapidly growing corals in the world," he said.

"The genus Acropora is kind of like what a coconut palm is to a tropical island, and for it not to be present is for the reefs not quite to be considered tropical."

He said Acropora coral "is really beautiful, large and delicately branched" and its discovery in the Hawaiian Islands "elevates our reefs ... scientifically and aesthetically."

Samples of the new coral may be seen by the public in a display at the Waikiki Aquarium.

Grigg said the coral is sold here but is imported from off the Philippines.

It may be possible now to transplant the coral from the reefs off French Frigate Shoals to the major Hawaiian Islands, but it would have to be done under controlled conditions, he said.

"WE WOULD HAVE to test it to see if there are any adverse effects on species here, but it is not likely because it has not upset the balance of other species at French Frigate Shoals."

He said if Acropora coral could become established on the reefs around the major Islands, "it would make them all the more beautiful for observation, photography, education of classes and that type of thing."

Grigg said there had been reports in the past of Acropora at French Frigate Shoals, but they were in question and had been discounted. And only one colony has been found in waters of the major Islands, off Kauai, he said.

"We thought these were outliers or expatriates—that they happened to drift in from some other place," he said.

Then last year, he said, John Naughton of the National Marine Fisheries Service and Leighton Taylor, Waikiki Aquarium director, found several more colonies of Acropora at French Frigate Shoals.

HE SAID THEIR discovery prompted a closer look" and he received Sea Grant funds for a 16-day research cruise on the vessel Easy Rider.

The project is part of a longer plan.

federal-state inventory of marine resources in the Northwestern Islands involved with planning fisheries development and management in the area.

Working with Grigg in the coral investigation were Steve Dollar and Mike Palmgren of the University of Hawaii, Ted Hobson of the National Marine Fisheries Service, and Bill Walsh, a student of Leighton Taylor at the University of Hawaii.

"On our first dive we were surveying a reef just off La Perouse Pinnacle at a depth of 30 feet when suddenly there appeared a patch of three small colonies of Acropora," Grigg said.

He said they were "small, clumpy bush-shaped colonies Directly ahead were about a dozen more. In an area not much larger than a living room we found over 100 colonies. All of us were elated.

"THEN, ON OUR return to the ship Easy Rider we came across an even more incredible find, a huge table-shaped colony belonging to a second species of Acropora which measured 15 feet 10 inches in diameter."

He said more dives at various places around the island showed that both species are well established at French Frigate Shoals. The table-shaped variety covered most of the reef at one site near the southern rim of the atoll.

"It is really a surprise and an important find," Grigg said. "It opens a lot of questions."

He said the Hawaiian Islands have only about 40 species of coral while many Pacific areas have 200 to 300 species.

The cooler water temperature and

isolation of the islands from more tropical areas to the south have long been considered to be major factors limiting corals in Hawaii, he said.

However, he said the Acropora discovery has created a puzzle.

The sea surface temperature is cooler on the average at French Frigate Shoals than it is at the major Hawaiian Islands, so why aren't the corals here?, he asked.

"PERHAPS IT IS a new invasion that will gradually spread south-east," he said. "However, the presence of colonies at least 35 years old at French Frigate Shoals casts doubt on this explanation."

He said the first step toward solving the riddle will be to identify the species and determine if they are endemic, or unique, to Hawaii. He has sent samples of the coral to authorities on the Mainland and in Australia for study.

He said coral research also must be done in Hawaii's other Leeward Island areas.

"After we look at all the other islands, we will have a better idea why it (the Acropora) is up there and not down here."

But he said, "Each system, each island community, is unique and trying to find out why is a herculean task that will take a long time The whole study will raise more questions than answers."