

Research vessel studies San Andreas off Fort Bragg

Frank Hartzell, Fort Bragg Advocate-Dispatch, 10-1-10

The San Andreas Fault, probably the subject of more disaster movies than scientific studies so far, has yielded an answer to one controversy with more discoveries being made off Mendocino daily.

"It's surprising but the offshore area of the San Andreas Fault has never been mapped and there has been very little study of it," said Chris Goldfinger, the Oregon State University professor now leading a mapping and study of the fault out of Noyo Harbor.

On land, the San Andreas Fault extends from the Salton Sea to Point Arena. The famed fault that caused the 1906 San Francisco earthquake is found about 8 miles off Fort Bragg in about 400 feet of water. Goldfinger's expedition is mapping a remarkably straight line along the sea bottom.

Goldfinger said the expedition has put to rest a controversy about where the fault returned to land and hopes to learn more about how it interacts with the other major faults at the California Triple Junction, located off the tip of Cape Mendocino.

The San Andreas Fault makes a visible landing on a beach at Point Delgado near Shelter Cove, then disappears into the King Range.

"There were some scientists who believed that that wasn't the fault that came to land there, but a slide or something else. We've pretty much resolved that question," Goldfinger said

Goldfinger points to a computer screen aboard the research vessel Derek Baylis that shows the fault as if a razor blade carved a straight line from the top to bottom of the monitor.

On the screen the fault line clearly pulls the mouth of a dramatic offshore formation called Noyo Canyon, like an open-mouthed fish on a string. The canyon once may have been associated with the Noyo River but seismic forces have stretched and twisted the gigantic undersea canyon.

"Hundreds of earthquakes like the 1906 earthquake had to be responsible for doing that," Goldfinger said.

The tiny line of the San Andreas Fault, as seen on the computer screen is actually a 30-foot tall straight cliff edge. That cliff is the dividing line between the western edge of the North American Plate, which is slowly moving south, and the eastern edge of the Pacific Plate, which is moving north.

Offshore, the fault is distinct and ideal for study, not being altered by land-based erosion and development, Goldfinger said.

"It's all right there and very clear. And nobody has built a WalMart on top of it," he said.

Arriving this week was a special robot vessel, which Goldfinger describes as a submarine and helicopter hybrid. Biologists from the National Oceanic Atmospheric Administration will use the video to study the rich life the fault creates on and around the sea bottom.

The cliff becomes something like a reef, supporting all levels of the food chain.

"Many of the richest areas for life offshore California are created by faults," Goldfinger said.

The roughly 6-by-6-foot robot hovers a few feet above the bottom, providing live images of the San Andreas to the crew of the Baylis, an equally unusual piece of research equipment.