

**Our Ocean Backyard — *Santa Cruz Sentinel* columns by Gary Griggs, Distinguished Professor of Earth and Planetary Sciences, UC Santa Cruz.**

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**Recovering a Sunken Submarine**



*The Hughes Glomar Explorer, Licensed to Creative Commons*

Extracting minerals from the ocean appeared to take a giant step towards reality in 1973 when a plan was announced to recover manganese nodules from the deep-sea floor. The plan by the reclusive billionaire Howard Hughes to harvest manganese nodules from the deep sea floor turned out to be more of a scam than a plan, however.

The specially designed ship, the *Hughes Glomar Explorer*, captured a lot of media interest because of the eccentric Howard Hughes himself, and also because it was the first announced effort to mine the ocean floor.

While Hughes let his name be attached to the project after being asked by the Central Intelligence Agency, the ship's actual purpose had nothing to do with going after minerals, but rather retrieving a sunken Soviet submarine. The code name for the gamble was Project Azorian, even though the operation was in a completely different ocean than The Azores.

The submarine (named K-129) sunk in water 16,500 feet deep, 1,560 miles northwest of Hawaii. In 1974, despite this remote location and very deep water, the *Glomar Explorer* was able to locate the wreck, attach a mechanical recovery system, and actually began to raise the submarine to the surface. This was no trivial accomplishment- the Russians weren't even able to find their lost vessel.

A failure in the lifting system, however, led to the loss of a major portion of the submarine - the part that was said to have held the most valuable components- the codebook and nuclear missiles. Later reports indicated that some code machines and two nuclear-tipped torpedoes were recovered, along with the bodies of six Soviet submariners. It's never clear when the CIA is involved, however, what really happened, and there seems to be some disagreement on this.

The life of the *Glomar Explorer* continued for decades thereafter, however. The General Services Administration (GSA) invited bids for leasing the ship in 1976 and received some interesting offers, but none of these panned out due in part to the expenses involved in operating the unique vessel.

Finally in January 1977, with no contract in sight, the GSA transferred the ship to the U.S. Navy for storage and it became part of the Navy's Suisun Bay Reserve

Fleet. On occasional drives over the Carquinez Straits Bridge during the 1970s and 1980s, I recall looking across at what was known for years as the Mothball Fleet and seeing the *Glomar Explorer*, which was quite distinct from all the other ships in the fleet.

In 1978, a consortium of companies (including two major oil companies and Lockheed Minerals and Space Company) formed the Ocean Minerals Company and announced it had leased the ship and planned on testing a prototype system for mining the deep-sea floor.

Although this effort never apparently materialized, the ship still had some more life left. Nineteen years later in 1997, the unique vessel was taken to a shipyard in Mobile, Alabama, for a \$280 million retrofit (in 2017 dollars) that converted it to a deep-sea drilling ship. When completed and with some modifications, the *Glomar Challenger* could drill for oil and gas in waters 11,500 feet deep, 2000 feet deeper than any other drillship at that time.

This conversion from 1997-98 began a 30-year lease from the Navy to Global Marine Drilling. A subsequent merger in 2001 produced Global Santa Fe Corporation, which merged with Transocean in 2007 and operated the vessel as *GSF Explorer*.

Transocean then acquired the vessel for \$15 million. In November 2015, however, the ship arrived at the Chinese port of Zhoushan to be scrapped. This ended the saga of the first effort to commercially extract minerals from the seafloor, with no manganese ever recovered but instead, part of a Soviet submarine.