Questions & Answers

Q: What was the purpose of this study?

A: There has been considerable controversy over oil and gas production platforms and whether they actually benefit or diminish marine life in offshore California waters. Decisions regarding the fate of decommissioned platforms and whether they should be fully or partially removed may partly depend on what thrives around these structures.

The study explored various fish assemblages over time and at different depths to determine the ecological impact of these platforms on marine habitats compared to natural outcrops. The study was focused on sites in Southern and Central California where most oil and gas platforms are located.

Q: Who performed the study and why were they chosen?

A: The study was led by Dr. Milton Love and team members Donna Schroeder and Mary Nishimoto of the prestigious Marine Science Institute at the University of California at Santa Barbara.

Dr. Love is a respected marine biologist and fish ecologist. He and his research team studied the artificial undersea world for six years using their *Delta* submersible. They measured the abundance and size of fishes at various platforms in comparison to those found around natural rock outcroppings.

Dr. Love's research stands among the most authoritative and frequently referenced in the scientific literature of rockfish, the most prevalent of fish found in and around the oil platforms.

Q: How was the study funded?

A: The study, which began in 1995, was initially funded by the Biological Resources Division of the U.S. Geological Survey, the Minerals Management Service and most recently by the California Artificial Reef Enhancement Program (CARE). CARE is a nonprofit public benefit corporation seeking to promote awareness and understanding of artificial reef ecosystems in offshore California waters.

Q: How was the study conducted?

A: The study was conducted over a six-year period from 1995-2001. Nine platforms were surveyed in depths between 95 feet to 739 feet from north of Point Arguello in Central California to Long Beach in Southern California. They included Irene, Hildago, Harvest, Hermosa, Holly, Gilda, Grace, Gina and Gail located in the Santa Barbara Channel and Santa Maria Basin.

Scuba surveys were conducted at shallow depths; submersible surveys at deeper depths. Fish counts and size estimates were recorded (fish density was surveyed visually) at three strata: surface, midwater, and platform bottoms, including shellmounds.

Q: Why were these platforms selected in that stretch of coastline?

A: The Santa Barbara Channel and Santa Maria Basin have features generated by irregular topography, local-scale interactions of wind, opposing water, mass. currents and tides. This made for interesting patterns of fish abundance related to the complexity of the study area.

The platforms themselves have a wide range of spatial and temporal patterns of fish assemblages and local processes that could be examined in relation to natural outcrops. All of the platforms surveyed have a web work of crossbeams that support the structure and provide a great deal of habitat for both invertebrates and fishes.

Q: How were natural reefs examined in comparison?

A: Natural outcrops were surveyed in Central and Southern California over a wide range of banks, ridges and carbonate buildups. A central focus of the study was on bottom level habitats that included kelp beds, boulder and cobble fields and bedrock outcrops.

Q: What were the comparisons between the artificial and natural reefs?

A: Platforms and natural outcrops both produce and attract fish, depending on species and site. Overlap exists among species between platforms and outcrops but platforms generally had higher densities of more species. A greater variety of species' assemblages were found on artificial reefs in shallow waters than natural reef assemblages. This was most likely caused by platform habitats having a higher sensitivity to changing oceanographic conditions.

Q: What kind of fish was found on platforms compared to natural outcrops?

A: Around platforms, there were more species of canary, copper, flag, greenblotched, greenspotted, greenstriped, halfbanded, vermilion rockfishes, bocaccio and widow rockfish, YOY, painted greenling and lingcod. On natural outcrops, yellowtail rockfish, dwarf species of pygmy, squarespot and swordsping rockfishes were more abundant.

Q: Were there differences in species among the different strata: surface, midwater, and bottom?

A: Rockfishes, totaling about 35 species, dominated all three fish assemblages and characterized almost all of the platform and hard sea floor habitats. In shallow waters, regional and local processes influenced patterns of reef fish assemblages and reef fish abundance patterns often shifted abruptly as oceanographic patterns changed in both platform and natural reef habitats. Midwater had higher fish densities and served as nursery grounds for rockfishes, cabezon and painted greenling. Around platform bottoms, rockfishes comprised more than 90 percent of all fishes found. Shell mounds supported a rich and diverse fish assemblage with rockfishes being the most abundant.

Q: What is the current status of offshore oil platforms in the area where this study took place?

A: In Southern California alone, 27 offshore platforms support 378,000 square meters of surface dwelling invertebrate habitat, equivalent to 75 football fields. Seven have been decommissioned since 1974 (Harry, Helen, Herman, Hilda, Hazel, Hope, Heidi) and most others are likely to be decommissioned within the next 15 years.

Q: Is Dr. Love and his team in support of keeping these platforms intact given the abundance of fish that they uncovered?

A: Dr. Love and his team conducted the study for research purposes only. Their report, however, provides the most extensive scientific data to date on the proliferation of marine life on artificial reefs. The findings likely will be taken into consideration on any discussions or decisions regarding the platforms.