

# Offshore seismic testing will impact fishing near Diablo Canyon

*But long-term effects unknown*

**David Sneed, San Luis Obispo Tribune, 10-7-12**

High-energy ocean seismic surveys scheduled to begin in November offshore of Diablo Canyon nuclear power plant will scatter fish and make them initially harder to catch, but the long-term effect of the loud sonic blasts on fish stocks is less well understood.

A recent environmental impact report by the State Lands Commission concluded that plans by PG&E to emit extremely loud sounds into the ocean to map earthquake faults could have a significant impact on commercial fishing.

Previous studies have shown that the continuous series of 250-decibel sonic blasts can cut fish catches by half, at least immediately following the testing. Additionally, fishermen will not be able to work in the areas when the seismic surveys are being conducted.

“The disruption would occur at a time that the local fishing industry is in transition toward establishing a sustainable fishery,” the report stated. “Cumulative effects are potentially significant because the local commercial fishing industry has been weakened by other factors, and the proposed seismic surveys may contribute to multiple disruptions over consecutive seasons.”

The testing is being undertaken so geologists, federal nuclear regulators and PG&E can better understand earthquake faults near Diablo Canyon and the risk they pose. Such information became more critical in light of the tsunami and Fukushima Dai-ichi nuclear plant disaster in Japan last year.

Starting in the middle of November, PG&E will map the Hosgri, Los Osos and Shoreline fault zones in the Estero Bay for nine to 12 days. The utility plans to map two other areas in November and December of next year.

PG&E will use the interval between the two testing periods to confirm that the technology being used is appropriate and ensure that marine life monitoring and protective measures are effective.

One of the monitoring programs will measure the long-term effects of the seismic surveys on fish populations, something that has never been done before. For the past six years, marine scientists at Cal Poly and Moss Landing Marine Laboratories have been using volunteer fishermen to inventory rockfish numbers from San Luis Obispo to San Mateo County.

“There really are no existing studies that have looked at the long-term impacts to an area of seismic testing,” said Dean Wendt, marine sciences professor at Cal Poly. “Previous studies have looked at short-term impacts only.”

PG&E has agreed to fund Wendt’s fish monitoring for at least three and possibly five more years. This will allow researchers to compare how fish in the survey areas respond to the testing with the baseline information already gathered as well as what is happening away from the testing areas.

For example, if the sonic blasts kill large numbers of fish larvae or juvenile fish, it could take several years for

“That could cause a hole in the population, and it could take three or four years for the impacted fish to become adults,” Wendt said. “Our monitoring will be able to detect that.”

Although the long-term effects of seismic testing are unclear, several studies — including one done locally — have shed light on the short-term impacts. The studies show that emitting loud sounds into the ocean significantly disrupts fish populations but does not result in large-scale mortality of adult fish.

“If there were a complete annihilation, I expect that we would have seen that somewhere else because they are doing that all over the world,” Wendt said.

In 1986, Morro Bay commercial fisherman Mark Tognazzini participated in a \$500,000 study conducted by the Minerals Management Service that looked at the effects of sonic blasts on rockfish. In that study, 190 decibels of sound were emitted from a single air gun. That resulted in a 52 percent reduction in catch in hook-and-line rock cod fishing. The study showed that the fish had a startled response and scattered, which reduced their likelihood of taking the bait.

Tognazzini said he expects the effects of PG&E’s surveys to be more pronounced. The utility’s research vessel will emit a much louder sound — 250 decibels — from an array of 18 air guns, rather than one.

“This is not new; the intensity is what’s new,” Tognazzini said. “It’s pretty cut and dried, at least in behavioral changes, what these tests will do.”

Other studies have looked at the effects of seismic testing on fish eggs and larvae. This is because they congregate at the surface of the ocean where sunlight and nutrients are located. It also puts them in close proximity to the air guns. According to the state’s environmental impact report, larvae would have to absorb sounds as loud as 220 decibels to be harmed.

“A massive amount of zooplankton will be whacked,” Tognazzini said.

However, the state report concluded that injury caused by the air guns would be small relative to natural mortality and predation.

“Based on the information available, the effect on fish eggs and larvae are expected to be limited (only at high noise levels and close proximity to the air guns),” the report concluded. “Combined with survey timing that would likely avoid peak larval seasons, the overall effect on plankton resources, including juvenile fishes, would be less than significant.”

PG&E contends that there is no evidence that seismic testing hurts fish populations in the long run. The sonic blasts do startle and scatter fish, but they recover within a couple of days, said Jearl Strickland, PG&E’s director of nuclear projects.

“Twenty-four high-energy surveys are taking place in coastal waters of the U.S. as we speak, and more than 100 are being performed around the world,” he said. “In the Gulf of Mexico, seismic testing goes on year-round, and the fisheries there are not hurt.”

In an effort to make up for the commercial fishermen’s losses, PG&E offered them \$1.2 million in compensation. That offer was rejected, and PG&E is hoping to appoint a mediator to work out a deal.

“We would really like to get this moved forward to mediation to get some accord,” Strickland said.

testing can file a claim with the utility, and a mediator will be used if individual fishermen are not satisfied with the amount paid.