

**National Science Foundation
Geosciences Directorate
Division of Ocean Sciences
Arlington, Virginia**

Record of NEPA Compliance

Marine Seismic Survey in the Northeast Pacific, July 2009

OCE #0550402

Principal Investigator: Anne Trehu

Institution: OSU

Project Title: Monitoring microseismicity associated with a possible asperity on the Cascadia megathrust

An environmental assessment (EA) was prepared on behalf of the National Science Foundation (NSF) for a marine seismic survey conducted on board the research vessel (R/V) *Wecoma* in the Northeast Pacific Ocean during September 2007. The EA entitled, "Environmental Assessment of a Planned Low-Energy Marine Seismic Survey by the Scripps Institution of Oceanography in the Northeast Pacific Ocean, September 2007" (Report #TA4470-1) (Attachment 1) was prepared on behalf of NSF by LGL Ltd. environmental research associates (LGL). The conclusions from the LGL report were used to inform the Division of Ocean Sciences (OCE) management of potential environmental impacts of the cruise. OCE reviewed and concurred with the report's findings. A determination was made by OCE that the cruise was not a major Federal action having a significant impact on the environment (Attachment 2). An IHA was issued for the 2007 cruise (Attachment 3).

A nearly identical seismic survey cruise is proposed for July 2009, in the same location, by the same Principal Investigator. The 2009 cruise is a follow-on to the 2007 cruise to continue to study and monitor repeat earthquake activity off the coast of Oregon in order to characterize the underlying fault plane. There are no significant changes to the original project objectives and context. As during the 2007 cruise, a single low-energy Generator-Injector (GI) airgun, with a discharge volume of 45 cubic inches, would be deployed from the R/V *Wecoma* as an energy source. The survey would take place ~25-110 kilometers offshore, entirely within the Exclusive Economic Zone of the United States, in water depths between ~100 to ~3000 meters. The 2007 survey took place in depths of 110-3050 meters.

The timing of the 2009 seismic survey differs slightly from the 2007 survey, as the 2009 survey will take place in July rather than September. Marine mammal population sizes based on the most recent NMFS annual stock assessment and marine mammal density and distribution data from the NMFS SWFSC ORCAWALE 2008 cruise were evaluated and incorporated into analysis used to develop the Take Requests found in the attached IHA application for this cruise (Attachment 3 – see Table 4, page 45). In addition, new information on the effects of airguns on marine mammals was updated in the IHA application submitted to NMFS for this cruise (Attachment 3). A 3.5 or 12 kHz sub-bottom profiler may be used; the details on the 12 kHz SBP are provided in the IHA analysis (Attachment 3, page 6)

The proposed Action, Alternatives, and environmental consequences remain unchanged.

Formal consultation under ESA Section 7 will be sought with NMFS. No takes are anticipated for endangered sea otters as the cruise will occur outside the sea otter range, and therefore, we will not consult with US FWS.

Conclusions

NSF has reviewed the new information relevant to the proposed 2009 seismic survey cruise in conjunction with the 2007 environmental assessment. NSF has determined, in light of the new information, that the implementation of the proposed activity will not have a significant impact on the environment.