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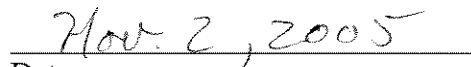
ENVIRONMENTAL DOCUMENT CONCURRENCE

Activity:

Low-energy marine seismic survey by the Scripps Institution of Oceanography on the Louisville Ridge in the Southwest Pacific Ocean,
January-February 2006

I have read the attached document and concur with the findings and recommendation. I concur that the proposed activity can commence.


H. Lawrence Clark
Director, Division of Ocean Sciences
National Science Foundation


Date



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ENVIRONMENTAL DOCUMENT AND DETERMINATION UNDER THE NATIONAL
ENVIRONMENTAL POLICY ACT (NEPA) AND EXECUTIVE ORDER 12114

Low-energy marine seismic survey by the Scripps Institution of Oceanography on the Louisville
Ridge in the Southwest Pacific Ocean,
January-February 2006

FINDING OF NO SIGNIFICANT IMPACT

Recommended:

Handwritten signature of Alexander Shor in cursive.

Alexander Shor

Program Director, Oceanographic Technical Services Program
Division of Ocean Sciences
Geosciences Directorate
National Science Foundation

Handwritten date "01 November 2005" written over a horizontal line.

Date

Approved:

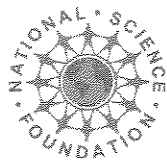
Handwritten signature of Michael Reeve in cursive.

Michael Reeve

Section Head, Integrated Programs Section
Division of Ocean Sciences
Geosciences Directorate
National Science Foundation

Handwritten date "11/01/05" written over a horizontal line.

Date



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Background:

The National Science Foundation prepared a draft Environmental Assessment (EA) of a low-energy marine seismic survey by the Scripps Institution of Oceanography on the Louisville Ridge in the Southwest Pacific Ocean, January-February 2006, and solicited public comments. The National Science Foundation has prepared this Finding of No Significant Impact (FONSI) based on the EA, in accordance with CEQ regulations §1500-1508 and 45 CFR 640. It was determined that the proposed activity would not result in a significant impact on the quality of the environment. Given the mission of the National Science Foundation's Division of Ocean Science to support basic research throughout the world's oceans, the proposed action is expected to result in substantial benefits to science.

Summary of the Proposed Action and Alternatives:

The Scripps Institution of Oceanography (SIO), with research funding from the National Science Foundation, plans to conduct a marine survey on six seamounts in the Louisville Ridge in the Southwest Pacific Ocean during January-February 2006. The proposed action is to conduct a planned scientific rock-dredging, magnetic, and seismic survey program to examine the eruptive history of the submarine volcanoes there, and to collect data needed to design an effective Integrated Ocean Drilling Program (IODP) study on carefully-selected seamounts. The project would be in International Waters. The survey will use a towed array of two GI airguns, totaling an air discharge volume of 90 in³. The survey will take place in water depths 800-2300 m. The cruise is scheduled to occur from 21 January to 26 February 2006. The GI guns will be used for ~28 h on each of 6 seamounts during ~28 January to 19 February 2006. SIO has applied for the issuance of an Incidental Harassment Authorization (IHA) from the National Marine Fisheries Service (NMFS) to authorize the incidental harassment of small numbers of marine mammals during the seismic survey.

One alternative to issuing the IHA for the period requested, and to conducting the project then, is to issue the IHA for another time, and to conduct the project at that alternative time. The proposed dates for the cruise (~21 January to ~26 February 2006) are the most suitable dates, from a logistical perspective, for the vessel and its crew. The SW Pacific cruise is a multi-institutional project, and the planned schedule takes account of the availability of personnel and instruments from those institutions. The planned dates are dates when all of the personnel and equipment essential to meet the overall project objectives are available. If the IHA is issued for another date, it could result in significant delay or rescheduling, not only of the SW Pacific cruise, but also of additional oceanographic research planned by SIO for 2006. Delay or rescheduling of this program would cause considerable disruption to the schedules of the supporting activities, which are essential to the success of the project. As the instruments and vessel support are committed to other programs, rescheduling this program, for which planning and logistics have been developed, would cause large economic, personnel, and scientific disruptions. Those could involve not only the *Roger Revelle* itself but also the supporting instrumentation and other research to be conducted from the *Roger Revelle*.



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Another alternative to conducting the proposed activities is the “No Action” alternative, i.e., do not issue an IHA and do not conduct the operations. If the research were not conducted, the “No Action” alternative would result in no disturbance to marine mammals attributable to the proposed activities. The seismic and other data from the proposed survey will be used to examine the eruptive history of the submarine volcanoes on the Louisville Ridge, and to collect data needed to design a future Integrated Ocean Drilling Program (IODP) drilling campaign on carefully-selected seamounts. The “No Action” alternative, through forcing cancellation of the planned survey, would result in a cancellation of an important aspect of the IODP, and would result in a loss of important scientific data and knowledge relevant to a number of research fields.

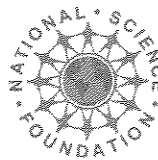
Summary of Environmental Consequences:

Numerous species of cetaceans and sea turtles occur in the Southwest Pacific Ocean. Several of the species are listed as Endangered under the U.S. Endangered Species Act (ESA), including South Pacific right, humpback, sei, fin, blue, and sperm whales. Other species of special concern that could occur in the area include the endangered (under the ESA) leatherback and hawksbill turtles, and the threatened (under the ESA) loggerhead, olive ridley, and green turtles.

The potential impacts of the seismic survey would be primarily a result of the operation of small airguns, although a multi-beam sonar and a sub-bottom profiler will also be operated. Impacts may include increased marine noise and resultant avoidance behavior by marine mammals, sea turtles, and fish; and other forms of disturbance. The operations of the project vessel during the study would also cause a minor increase in the amount of vessel traffic. An integral part of the planned survey is a monitoring and mitigation program designed to minimize the impacts of the proposed activities on marine mammals and sea turtles that may be present during the proposed research, and to document the nature and extent of any effects. Injurious impacts to marine mammals and sea turtles have not been proven to occur near airgun arrays; however the planned monitoring and mitigation measures would minimize the possibility of such effects should they otherwise occur.

The effects of sounds from airguns might include one or more of the following: tolerance, masking of natural sounds, behavioral disturbance, and at least in theory temporary or permanent hearing impairment (Richardson et al. 1995). Given the small size of the GI guns planned for the present project, effects are anticipated to be considerably less than would be the case with a large array of airguns. It is very unlikely that there would be any cases of temporary or especially permanent hearing impairment. Also, behavioral disturbance is expected to be limited to relatively short distances.

Protection measures designed to mitigate the potential environmental impacts will include the following: a minimum of two dedicated marine mammal observers maintaining a visual watch during all daytime airgun operations, and for 30 min before start up (which will only occur during daylight), with visual monitoring of the 180-dB safety radius around the airguns during nighttime airgun operations. The small size of the airguns, restricting their use to deep (800–2300 m) water, and ramp-up and shut-down procedures are also inherent mitigation measures. SIO and its contractors are committed to apply those measures in order to minimize



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disturbance of marine mammals and sea turtles, and also to minimize the risk of injuries or of other environmental impacts.

Public Participation:

The National Science Foundation prepared a draft Environmental Impact Assessment (EA) of a low-energy marine seismic survey by the Scripps Institution of Oceanography on the Louisville Ridge in the Southwest Pacific Ocean, January-February 2006, and solicited public comments over a 30-day period (Federal Register, July 7, 2005, Vol. 70, No. 129, Page 39346). Written comments were received, and several minor changes were made based on comments from the public. These changes were not considered significant; rather, they clarified background information and corrected one error regarding mitigation measures as described in the draft EA.

The agency has consulted with the National Marine Fisheries Service regarding species under their jurisdiction potentially affected by this proposed activity. Data collected during this cruise will be submitted to NMFS in a report within 90 days following its conclusion.

Copies of the FONSI and the final Environmental Assessment titled "Environmental Assessment of a Planned Low-Energy Marine Seismic Survey by the Scripps Institution of Oceanography on the Louisville Ridge in the Southwest Pacific Ocean, January-February 2006" are available upon request from: Dr. Alexander Shor, National Science Foundation, Division of Ocean Sciences, 4201 Wilson Blvd., Suite 725, Arlington, VA 22230. Telephone (703) 292-8583 or at the agency's website at:

http://www.nsf.gov/geo/oce/pubs/scripps_louisville_ridge_EA.pdf and
http://www.nsf.gov/geo/oce/pubs/scripps_louisville_ridge_FONSI.pdf

The National Science Foundation invites interested members of the public to provide written comments on this FONSI during the 30-day review period.

Conclusions:

Based on the analyses in the Environmental Assessment, the implementation of the preferred action is not a major federal action that would have a significant effect on the human environment, within the meaning of the National Environmental Policy Act (NEPA) of 1969 or Executive Order 12114. An environmental impact statement is not required and thus will not be prepared, and the approved actions may be implemented at the end of the 30-day FONSI review period.