

Permitting Requirements and Procedures for use of Seismics in NSF Research on UNOLS Ships: Update and Current Status

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Environmental Assessments – NEPA Requirements

- ‘Major Federal Actions’ with anticipated impact on the environment must have an Environmental Assessment (EA) completed.
- Normally, unless there is a finding that an activity will result in significant impact, or will have ‘substantial public controversy,’ this completes the NEPA requirements.
- If significant impact is anticipated, need to proceed with an Environmental Impact Statement (EIS), a substantially larger undertaking.

Endangered Species Act (ESA)

- If “Listed Species” are likely to be impacted, then NMFS Office of Protected Resources (OPR) will consider issuing NSF a ‘Biological Opinion’ that includes an ‘Incidental Take Statement.’
- The Biological Opinion is based on NSF’s Environmental Assessment, a ‘Finding of No Significant Impact’ (FONSI), and formal consultations between NSF and NMFS under Section 7 of the ESA.
- Minimum time to meet ESA requirements is 135 days from receipt of complete application.

Marine Mammal Protection Act (MMPA)

- If it is anticipated that marine mammals will be close enough to the vessel to experience a 'behavioral disturbance,' then it is necessary to obtain an Incidental Harassment Authorization (IHA) from NMFS OPR.
- The IHA is requested by the seismic operator, not NSF.
- An acoustic 'behavioral disturbance' is presently defined as a received sound level of 160 dB re 1 microPascal for whales, and 170 dB for seals. These levels are independent of frequency.
- IHAs prohibit an operator from causing injury or death to marine mammals. Standard mitigation protocols include continuous observation by qualified observers, and shutting down seismic operations if animals approach within a 'safety zone' in which sound exceeds 180 dB (whales) or 190 dB (seals) to prevent injury.

MMPA, cont'd

- Other mitigation protocols can be mandated in the IHA. Examples include coastal waters, or where special concentrations of animals might be anticipated (migration or breeding areas, or over slopes where beaked whales might congregate).
- Mitigation can include restricting or prohibiting some or all seismic operations at night or in poor visibility, and on occasion acoustic monitoring has been required. In some cases, post-survey aerial or vessel-based observations may be required to check for injured animals.
- A report summarizing operations and marine mammal observations is required 90 days after project completion.
- Minimum time to meet MMPA IHA application requirements is 120 days from receipt of complete application.

Other Requirements

- There are a few mammals (manatees, sea otters, polar bears and walruses) for which MMPA compliance is regulated by FWS rather than NMFS.
- State regulations under the Coastal Zone Management Act (CZMA) can impose additional restrictions.
- Other federal regulations can impose requirements as well – working in marine sanctuaries, national parks, and regulations related to impacts on fisheries and fish habitats often need to be considered, especially in inshore regions.
- Finally, for projects in waters regulated by foreign countries, relevant laws and regulations must be complied with. NSF has recently produced a draft memorandum of guidance to prospective investigators for projects involving seismics in foreign waters, and we expect to circulate it once review has been completed.

Costs of Assessments and Application for Permits

- NSF provides support for preparation of seismic Environmental Assessments and applications for Incidental Harassment Authorizations to the UNOLS vessel operator that will be supporting the seismic operation (either the ship operator, or if portable seismic system, the seismic system operator.) To date, only LDEO and SIO have undertaken this effort for NSF research. This support is provided via the annual Oceanographic Technical Services (OTS) award.
- Costs of Marine Mammal Observers (MMOs) are also provided via the OTS award, as are funds to support preparation of the post-cruise report.

Seismic Projects in 2004

- R/V Ewing:
 - Southeast Caribbean, Levander
 - Gulf of Alaska, Mix
 - Blanco Fracture Zone, Christeson
 - Pacific Central America, Fulthorpe
 - *Foreign clearance denied: Yucatan, Barton*
- R/V Revelle:
 - *Foreign clearance denied: Gulf of California, Lonsdale*

Seismic Projects in 2005

- R/V Ewing
 - Yucatan, Barton (deferred from 2004)
- R/V Melville
 - South Pacific, Lyle
- R/V Kilo Moana
 - Western Aleutians, Yogodzinski

Planning for 2006 and beyond

- Programmatic Environmental Impact Statement being considered to address seismic operations on new NSF-owned, LDEO-operated seismic vessel.
 - Likely to be prepared in cooperation with NMFS, take 12-18 months, and include extensive public input.