



JOINT MANAGEMENT PLAN REVIEW

ISSUE BACKGROUND: Ecosystem Protection – Benthic Habitats

Overview:

The Monterey Bay National Marine Sanctuary is dedicated to collaborating with the public in its effort to protect the marine environment. In the ten years since its designation, researchers, managers, and community members have helped the Sanctuary to identify resource protection issues and strategies to augment our management scheme. As part of the Sanctuary's management plan review process, these recommendations were honed through a series of scoping meetings and public workshops. Fifteen specific issues that were of principal concern to the public and the Sanctuary were identified as areas for discussion in a working group context. The effects of bottom trawling on benthic habitats has been a frequently raised concern and one which the Sanctuary has agreed to address as an important part of this process.

Background:

The Sustainable Fisheries Act of 1996 required that fishery management plans describe and identify essential fish habitat (EFH) and address how it is affected by fishing activities. The seafloor has thus become an area of acute environmental concern and a focus of scientific research. Legal challenges have been brought alleging that the Fishery Management Councils have not adequately addressed this issue. Additionally, the Councils generally address habitat issues on a species specific or species assemblage basis. By contrast, the Monterey Bay National Marine Sanctuary is concerned not only with the nexus between habitat and the health of a particular species, but with the role the benthic habitat plays in the health of the ecosystem. Therefore the Sanctuary is looking to address both the direct and indirect effects of trawling on habitat. Direct effects include mortality occurring as either part of the catch, or the incidental killing of benthic and demersal species. This includes that caused by increased vulnerability to scavengers and other predators. Increased food availability is another direct effect as trawling creates fish offal, discarded fish, and dead benthic organisms that provide food for scavenging species. Indirect effects include reductions in the total biomass of target fish, which could be expected to affect predators, prey, competitors of a target species, and overall seafloor community structure. These downstream consequences also encompass potential changes in the flow of materials and energy through ecosystems and shifts in the balance of production and consumption.



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Bottom trawling is widely believed to adversely affect benthic habitats, however there is a lack of knowledge about the extent of these impacts within the Sanctuary and the potential need for local protective action. In a 1994 report, the National Research Council stated, “Habitat alteration by fishing activities is perhaps the least understood of the important environmental effects of fishing.” Since that report was published, there has been extensive research done on the effects of trawl gear on the seafloor. However, the inherent difficulty in studying offshore habitats, and the problems associated with determining causation under shifting environmental conditions (current, temperature variation, natural migration, storm activity), have left many questions unanswered.

Both despite, and because of the uncertainty that remains, the use of trawl gear is a source of concern for the Sanctuary. This is due in part to the potential modification of the substrate, the possible disturbance of benthic communities, and the removal of non-target species. There has been little research conducted within the Sanctuary boundaries, however, a 1998 study indicated the occurrence of many of these suspected impacts.¹ There is also a perception that declines in many traditional fisheries could lead to increased efforts to find under-exploited fish populations in less accessible, previously unfished areas. These efforts would be facilitated by the development of new types of gear and navigational aids, possibly exposing new regions of the continental shelf, slope, submarine canyons, and seamounts to the effects of bottom trawling. There are currently specific area closures in the MBNMS, including the depth based limitations related to new restrictions in the groundfish fishery that prohibit the take of groundfish from within between 20 and 150 fathoms. There is also a state ban within three miles with exceptions for bad weather between Yankee Point and Point Sur. There are also exceptions associated with the spot prawn and shrimp fisheries. While these closures provide de facto protection of benthic habitat, they are spatially and temporally limited and do not represent comprehensive long-term protection.

Statutory and Regulatory Context

The original Designation Document and Final EIS for the MBNMS state that existing fisheries are not being regulated as part of the initial MBNMS regime. However, the Final EIS also states that if regulatory exemptions for fishing threatens Sanctuary resources, NOAA could undertake rule changes consistent with Federal procedures. This would involve the MBNMS consulting with CDFG, PFMC, and NMFS to determine an appropriate course of action. The National Marine Sanctuary Program recognizes that the primary regulatory authority over fisheries management resides with these agencies, and as an initial step will encourage these agencies to take the necessary measures. However, their associated management strategies have generally been species specific

¹ Engel, J., Kvittek, R. 1998. Effects of Otter Trawling on a Benthic Community in Monterey Bay National Marine Sanctuary. *Conservation Biology* **12**: 1204-1214.



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approaches that are not always adequate to safeguard marine ecosystems. The National Marine Sanctuary Act focuses on protection of the ecosystem as a whole, a field in which the Sanctuary Program has 30 years experience. Addressing the issue of the effects of trawling on benthic habitats is therefore a legitimate means for the Sanctuary to both meet its mandate, and a valuable opportunity to provide its ecosystem based perspective to fisheries management.

While regulation of fishing activities in federal waters is the jurisdiction of the Pacific Fisheries Management Council, identifying essential fish habitat and designing effective protective strategies has proven to be a difficult goal for the Council to achieve on such a coast-wide geographic scale. It is a task that may be more effectively addressed by an approach that is more regional in its application and more ecosystem oriented in its perspective. The Monterey Bay National Marine Sanctuary thus seeks to assess the threat bottom trawling poses to its resources, and to develop appropriate strategies to protect the marine environment.

Action Plan Development:

The work group will develop a framework plan to gather data on the types and extent of trawling activities and their impacts to the benthic layer and the associated living marine resources other than the targeted species during trawling activities. The plan will also provide for the examination of impacts related to bottom trawling, the assessment of the adequacy of protections afforded by the current regulatory framework, and as needed will recommend protective measures with which the Sanctuary will approach fishery management agencies.