

PACIFIC FISHERY MANAGEMENT COUNCIL

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Exhibit B.1
Attachment 1
September 2000

EXECUTIVE DIRECTOR
Donald O. McIsaac

CHAIRMAN
Jim Lone

August 7, 2000

Dear Reviewer:

Enclosed is a technical assessment of conceptual options for the creation of marine reserves (no fishing areas) on the West Coast. The Pacific Fishery Management Council (Council) has specified a two-phase process for considering whether or not to recommend marine reserves. The first phase is a conceptual evaluation that will conclude in September 2000 with a Council decision on whether or not marine reserves have a role in fishery management for the groundfish fishery. The first phase has not included recommendation or discussion of specific sites for marine reserves.

During the second phase, if pursued by the Council, options for the design and location of marine reserves would be developed. An attachment to this letter identifies many of the reserve design and policy issues that would need to be considered in Phase II, if Phase II is initiated.

An Ad-Hoc Marine Reserve Committee was appointed by the Council. Based on its review of the issue and a draft of the enclosed document, the committee developed the following recommendations for the Council.

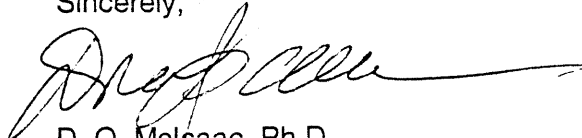
1. Phase II of the process for considering marine reserves should be initiated, based on the overall marine reserve objectives and options selected by the Council after completion of the Phase I public review process. Phase II should begin with the development of reserve siting criteria. For sites that are proposed, objectives and how they would be met should be clearly specified, along with a plan for monitoring and review. The Council should put a high priority on seeking the money and personnel needed to pursue Phase II.
2. Where possible, the Council should coordinate marine reserve development with other agencies and groups working on designating marine reserves. Although marine reserves should be planned on a coordinated, coastwide basis, marine reserve siting should be developed regionally (regions within states) and include increased levels of local public participation.
3. The Council should communicate with other agencies and groups working on West Coast marine habitat zoning issues.
4. The Council should consider siting marine reserves in areas where there are already closures and limitations, if such areas would meet the objectives for marine reserves.
5. If marine reserves are established, use a mixture of places completely closed and places allowing some types of fishing (for example, allow lower impact fishing such as salmon trolling in some areas), with evaluation of both types of areas.

6. Increased funding is needed for enforcement of all Council related management activities, including marine reserves.
7. A marine reserve program and other major management initiatives such as observer programs and capacity reduction are interdependent. These management initiatives should be developed in concert to minimize adverse regulatory effects and maximize benefits of a well-coordinated program.

At its September 2000 meeting, the Council will be asked to consider public and advisory committee comments and decide whether or not to proceed with Phase II (the development of recommendation for specific sites for marine reserves). Your comment is invited on the policy decision before the Council, the Ad-Hoc Marine Reserve Committee's recommendations, and the merits of the enclosed technical assessment. Comments should be received at the Council office by **August 23** in order to be distributed to the Council members prior to their September meeting and by **September 5** in order to be distributed at the meeting.

Should you have questions on this matter, please contact Mr. Jim Seger at the letterhead address, phone number, or e-mail address.

Sincerely,



D. O. McIsaac, Ph.D.
Executive Director

JLS:rdh

Enclosure

Design Characteristics

Design characteristics would be taken up as part of Phase II of the Council's consideration of marine reserves. This attachment summarizes some of the different aspects of reserve design. The attachment is provided as part of this review package in order to give reviewers a better sense for some of the issues that may need to be addressed if the Council proceeds with the second phase for considering marine reserves.

The Council's Ad-Hoc Marine Reserve Committee discussed design characteristics and developed the following design characteristic categories for marine reserves:

1. Restrictions on fisheries.
2. Restrictions on other activities.
3. Reserve configuration.

The Committee emphasized that specific restrictions inside and outside reserves should relate to the original reserve objectives. Similarly, the Committee believes reserve locations should be based on the target rebuilding species and its distribution rather than political boundaries (i.e., should be biologically based rather than politically based). Regardless of the objectives in designing a particular reserve or reserve network, the specification of reserves, as well as management approaches and actions, may be more effectively achieved as part of a local/subregional discussion process.

Alternative Fisheries Restrictions for the Marine Reserve

The following fishery restriction options were considered by the Committee:

1. No fishing (recreational and commercial).
2. No fishing by any method that has a significant level of bycatch of the species of concern.
3. No fishing that disturbs sea floor habitats on a regular basis (for example, salmon trolling would be unlikely to disturb these habitats and, therefore, would be allowed).

Initially, the following were considered for inclusion in the above list, but were recognized as redundant with the second and/or third items in the list:

1. No fishing except coastal pelagic species.
2. No fishing except highly migratory species.
3. No fishing except pots/traps.
4. No fishing except hand harvest of invertebrates.

It appears likely Council authority would extend only to those species covered by a fishery management plan (FMP). The scope of the Council authority may include the ability to restrict fishing with any gear that may harvest a species covered by a Council FMP. The approach would be to use language similar to that used by the Gulf Council in a proposal for an area closure for reef fish: ". . . closed year-round to all reef fish fishing (and to bottom fishing gear capable of catching reef fish)." Restriction of other nonFMP fisheries would require the cooperation of other jurisdictions.

Potential Restrictions on Other Activities

The Council may wish to support one or more of the following restrictions in conjunction with the development of marine reserves:

1. No aquaculture.
2. No recreational diving.
3. No anchoring.
4. No marine plant harvest.
5. No oil and gas exploration.
6. Research by permit only.
7. No dumping (e.g., dredge spoils).
8. No new fiber optic cables.

Restrictions on any activities would likely require a clear definition of the purpose and justification for the restrictions. Restrictions on most of the listed activities would likely require cooperation with other jurisdictions. Designation of marine reserve areas as habitat areas of particular concern would minimally strengthen the National Marine Fisheries Service (NMFS) position during the essential fish habitat (EFH) consultative process.^{1/} Some of these restrictions might already be provided or could potentially be provided for marine reserves located in National Marine Sanctuaries, which are under National Oceanic and Atmospheric Administration (NOAA) jurisdiction.

Reserve Configuration

The Committee addressed general reserve configuration issues by brainstorming about how to design marine reserves to aid in bocaccio recovery. Many of the general ideas discussed could be applied to designing reserve configurations for other species.

Size and Shape

If it is determined a percentage of habitat should be set aside, the amount set aside should be a proportion of prime habitat for the life stage being protected (not a proportion of all ocean area and not the proportion of all habitat for a particular species).

The area needed for reserve should be minimized by selecting ideal locations (maximizing benefit for a given amount of reserve area). Reserve configuration should take into account the specific habitat needs of a species (for example, encompass a portion of a rocky outcropping and/or a canyon mouth).

The Committee discussed three possible configurations for marine reserves:

1. A number of offshore reserves.
2. A band running from shore to offshore adult areas.
3. Adult offshore reserves and nearby, near-shore juvenile reserve areas.

The size and shape of reserves would depend on the movement of the fishes targeted by the reserve for rebuilding. Movement patterns vary by life stage and by age within a life stage. For example, younger adult bocaccio may be more mobile than older adult bocaccio. For bocaccio, as well as most groundfish species, there is not good information on how adult movement patterns vary by age. Management restrictions other than marine reserves should be used to protect more mobile life stages.

Location Number and Replication

To protect and rebuild spawning stocks, consideration should be given to locating reserves in adult spawning areas and/or where adults are less mobile. For bocaccio these are generally believed to be high relief areas. In locating reserves, oceanographic features that will disperse or retain planktonic life stages should be taken into account. Some reserves should be located in areas of past historic abundance to ensure habitat is available to colonizing members of the recovering stock. There is some evidence populations may recover quickly in such areas. Consideration should also be given to protecting nearby juvenile nursery areas which could supply fish to the adult marine reserve.

In locating reserves consider the following data sources:

1. Logbook data for some gear types, including recreational gears (usefulness may be limited due to lack of species specificity and lack of information for all gear types).
2. NMFS triennial rockfish survey (generally north of Point Conception).
3. State survey data and reports.

1/ Any Federal agency anticipating an action impacting EFH is required to initiate a consultation with NMFS.

4. Fish landings receipts (bocaccio and other species may be identified to species only in more recent years).
5. Marine Recreational Fisheries Statistics Survey (MRFSS) data collected by Recreational Fishery Information Network (RecFIN).

In determining reserve locations and the types of restrictions to be imposed take into account socioeconomic factors, including fisher and processor needs.

To ensure some bocaccio reserves could remain productive during oceanographic shifts, a number of reserves should be spread out along the coast. If only one reserve of a particular type is established, a single catastrophic event or localized environmental degradation could eliminate benefits of the reserve. Reserve replication can be useful both to insure against local environmental degradation or disasters and to facilitate research on the effectiveness of reserves.

Duration and Rotation

If a reserve is put into place and it is meeting its established objectives, it should stay in place. However, there is a need for study and review to ascertain whether or not reserves are meeting their establishment objectives.

Every reserve should be studied in an overall reserve research and monitoring program and assessed at a minimum of once every three years (starting with a baseline before the reserve is established). Delaying the baseline study could diminish scientists' ability to determine the effects of a reserve. Research and monitoring information should be made available to the public in a timely manner. In order to properly evaluate reserves, areas of similar habitat open to fishing will need to be evaluated for comparison purposes.

Reviews of the marine reserve should be scheduled. The review differs from the assessment, in that the review would involve a decision on whether or not the reserve should be continued. Options to consider for timing of the reviews are as follows:

1. Every other triennial survey (every six years).
2. After one mean generation time of the stock(s) being protected for rebuilding.
3. After generally good coast-wide recruitment events.

Prior to the establishment of a reserve, the scientific community should recommend and Council adopt marine reserve performance criteria. These criteria will likely include some or all of the following:

1. Fish: numbers
age class
sizes
structure
reproductive potential.
2. Species composition and diversity.
3. Community structure (trophic relationships).
4. Fish spillover outside the reserve.

It should be anticipated there will be a lag time between reserve creation and effects to be measured.

The Committee discussed rotating the reserve locations. In terms of stock health and rebuilding there did not appear to be a scientific rationale for reserve rotation. Most rationales for reserve rotation are based on socioeconomic factors. Often, once stocks inside the reserves are rebuilt there is a push to open marine reserves. The Committee felt, however, that greater socioeconomic upheaval might result from reserve rotation than from maintaining the siting of a known, long-term reserve. Additionally, it should be recognized the reserve is designed to provide fish for contiguous areas.

Regulations Outside the Reserve

Buffer Area

The Committee discussed the following options for a buffer just outside the reserve:

1. Buffer area where only certain types of fishing are allowed:
 - recreational fishing
 - fixed gear
 - small vessel exemption
 - all fishing allowed, but no retention of the species the reserve is intended to rebuild (possibly only during certain times).
2. Hard boundary on reserve (no buffer).

The Committee was uncertain as to whether or not buffers should be part of a reserve design.

General Harvest Policy

With respect to broader harvest policy issues outside the reserve, the analysis should consider trade-offs between precautionary fishery harvest policy and precautionary benefits of marine reserves. The following options should be evaluated in the analysis:

1. Liberalizing regulations outside reserves.
2. Adjusting parameters used for calculating total allowable catch to take into account the amount of population in reserves (this might include adjustments to account for changes in age structure and reproductive potential within the reserve as compared to the fished area and accounting for changes in the harvestable biomass).
3. Not changing the total assumed biomass or harvest regulations outside the reserve.

Additionally, some account will also need to be taken of localized increases in fishing pressure outside the reserve.

The above are options for discussion only. Marine reserves do not necessarily imply more liberal regulations outside the reserve.

Harvest Capacity

Marine reserves will displace fishing effort. Capacity reduction measures may be considered as complementary policies that may help reduce the impacts of this displaced effort.