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[via electronic mail and facimilie]

June 6, 2004

RE: Comments on the Draft Report "Marine Reserves: Objectives, Rationales, Management Implications, and Regulatory Requirements" prepared by the Marine Reserves Subcommittee of the Scientific and Statistical Committee, Pacific Fishery Management Council, Draft Dated June 2004

Dear Ms. Thompson:

The Ocean Conservancy thanks the SSC for the opportunity to comment on this Draft Report. We recognize the potential benefits of a report that includes criteria and management considerations to guide the assessment of marine reserve proposals, and we support the goal of the integration of reserves into the traditional fisheries management process. We also welcome the contribution of the SSC's experience and expertise to advance this objective. We also appreciate the revisions to this Draft that have improved the paper in several respects from the version dated February 2004. However, the June 2004 Draft Report still falls short of its potential, and, in its present form, does not provide a complete or comprehensive response to the issues and opportunities presented by marine reserves. We recognize in particular the revisions that have improved the Draft

in the area of "tone", the additions recognizing the distinctions between scientific and policy considerations and their applicability to marine reserve management – and non-management – objectives, and the improved language regarding the use of reserves to achieve social objectives (one type of non-management objective). The Draft Report, however, still suffers from problems in the areas of scientific thoroughness and utility to its users, and from a bias towards traditional stock management perspectives that is unlikely to advance the Council's goal of meeting its management responsibilities in the context of emerging resource management initiatives. We recommend revisions to the scope and approach of the Council's consideration of marine reserve proposal criteria to better suit the achievement of this central goal.

In pursuing the goal of assessing the potential effects of marine reserve establishment on waters under Council fishery jurisdiction, the Council should clearly identify its roles and responsibilities in marine reserve establishment for the entire scope of potential reserve proponents and objectives, and ensure that the scope of the Draft Report clearly matches those responsibilities. Doing so will bring clarity and utility to both the Council family and users of the document that is presently absent.

The Draft Report Proposes Criteria for Reserves that are not Applied to Other Management Measures:

As indicated above, The Ocean Conservancy welcomes the establishment of well-defined, objective and science-based criteria for the evaluation of the full range of protection and management measures, but believes they must be applied uniformly and fairly. The Draft Report proposes a suite of criteria that would be used to evaluate marine reserve proposals that are not applied to other proposals for the protection, recovery or management of marine environments and resources, thus creating a special, more stringent standard for reserve proposals, and a double-standard when compared to other proposals. Although revisions to the February 2004 draft has improved the document in this regard, there are still examples of the special, double standard throughout the Draft Report:

a. The Draft Report states that reserve models are "highly sensitive to underlying assumptions…", implying that such models are therefore unreliable. Fisheries management relies heavily on the use of stock-assessment models, which are not generally free from sensitivity to underlying assumptions, for example assumptions about the existence of a unit stock, the size of the virgin biomass, or the value of the natural mortality rate. And yet, the parameter and model uncertainty associated with stock-assessment model does not preclude their use by fisheries scientist and managers. Thus, to imply that the same problems with reserve models makes them unreliable is to apply a double standard.
b. The Draft Report states at III.B. "Detailed life-stage modeling is less relevant than whether an empirical relationship can be established between reserves and yield". Why is the same not true for other fishery management measures, such as size limits, seasonal closures or net restrictions? Fisheries managers routinely use such measures without knowing or requiring knowledge of the empirical relationship between the measure and yield. No justification is provided for this statement or why it would only be true of reserves, thus creating another double standard. Finally, as the SSC must be aware, the purpose of some reserves will be entirely unrelated to yield. In these cases, the relationship between reserves and yield would be irrelevant.
c. In section IV.F, the Draft Report directs reserve proposals to provide "measurable, verifiable indicators of progress…" While this may be a component of effective management, to our knowledge, an action-specific demonstration of success is not typically required by the PFMC for other types of management measures. Thus, this requirement sets a substantially higher standard for marine reserves.

The Draft Report is Suffers from an Incomplete Treatment of the Scientific Literature on Marine Reserves:

The Draft Report presents an incomplete and selective assessment of the body of research on marine reserves and their potential contributions to fishery management. Large volumes of marine reserve benefits with empirical, modeling and/or theoretical support are ignored or dismissed without sufficient comment or justification, while unsubstantiated theoretical costs (e.g. effort displacement effects) are uncritically accepted. Indeed, the Draft Report is potentially implicated in its own admonishment against scientific advocacy.

Below is a partial list of mis- or unrepresented issues in Section III.

a. III.F: The Draft Report raises the issue of uncertainty in scientific models. This discussion is selective and lacks context. The sensitivity of models to assumptions and data quality is not unique to marine reserves.
b. b. At III.B: The analysis of increased yield from reserves is inadequate and fails to recognize that the "reserve effect" has a strong theoretical foundation, is well-documented in existing reserves, and has a major role as a pre-cursor to yield enhancement. Fisheries benefits are dismissed without supporting evidence, and with insufficient reference to the substantial number of studies (15-20) now available that have found direct or indirect evidence of increased yield around marine reserves. The discussion recognizes the potential for reserves to mitigate "uncertainty in stock assessments" and to "ensure persistence", but again stops well short of a thorough treatment of the issue. The SSC misses two large issues. First, they almost completely neglect the influence of environmental uncertainty (e.g. unpredictable climate shifts, severe storms, other human influences, etc.), and the role that reserves might play in ameliorating the effects of that uncertainty on yield.. And, second, they make little mention of the potential for positive economic benefits, namely reduced variance in yield, a lowered probability of population collapses, and the damping of the boom-and-bust cycle common to so many ineffectively managed fisheries. In contrast, equally theoretical negative impacts such as effort displacement are directly connected to economic

impacts throughout the paper without documentation or substantiation, thus again giving the impression of an uneven and unfair treatment of the potential of marine reserve to benefit fisheries.

c. III.B.: The discussion regarding species' mobility and marine reserves repeats a common misrepresentation of the results of a large number of modeling studies. The Draft Report claims that high mobility (vagility) species will not experience accumulation within reserves ('reserve effect') and low mobility (vagility) will not produce 'spillover'. The models in fact indicate that accumulation and spillover, which will, respectively, be inversely and directly proportional to vagility, will occur across a wide range of vagilities, not only at the extremes of the continuum.

d. Also in this section, the paper suggests no yield benefits from reserves if "the status quo is a fishery managed for maximum sustainable yield." This is misleading and lacks context. First, yield increases are seldom predicted or claimed by reserve models for fisheries managed *at* MSY. Second, the reality is that many stocks are below MSY whether they are managed *for* MSY or not, and they remain below MSY for long periods of time despite the best efforts to manage them properly using traditional measures. Therefore, the theoretical, best, equilibrial performance of marine reserves relative to other measures should not be the only criterion against which they are judged, because they have enormous potential to increase the yield of depleted stocks, while providing the benefits that no other measures can as effectively, namely the 'insurance effect', protection of habitats, and other benefits to society.

The Revisions to the February Draft Do Not Remove Instances of Unproductive Tone

At several places in the revised Draft Report 'effort displacement', a potentially negative side-effect of a reserve, is taken as a given (almost a fact), despite the fact that there is virtually no data to support such a view. In contrast, the 'reserve effect', a positive outcome of a reserve for which there is a large volume of supporting research, is

negatively contrasted with “real world” data. This leads to an inappropriate “caution” against predicting fishery benefits for Council-managed species.

The paper also betrays an inflexible focus on fisheries management at a time when resource managers are exploring and finding benefits in multi-disciplinary perspectives and the notion of ecosystem management. A fair reading of the literature and relevant agency initiatives would suggest this inflexibility will be unproductive and that scope of this paper may be larger than the ad-hoc SSC should attempt to address.

Conclusions

The characteristics of the Draft Report discussed above including tone, bias, inflexibility and inadequate analysis, when considered as a whole, would have the affect of creating a significant and unfair barrier to the acceptance of reserve proposals by the Council. One can expect that if the Pacific Fishery Management Council endorses this paper, or a version of it not dramatically revised from the June, 2004 draft, the positions outlined in the paper will become enshrined in Council policy, making these barriers permanent.

The Draft Report suggests a resistance to the use of reserves that cannot be supported by the science and would impose a limited understanding of what theory, modeling and empirical studies have to say about the potential benefits of marine reserves. The Draft Report seeks creation of a set of special standards for marine reserves, creating a significant and inequitable barrier for reserve proposals.

In sum, the Draft Report suffers from flaws that result in a product that meets neither the intent of the Council in authorizing it nor the needs of agencies, organizations and interests that are its apparent intended audience. The document substitutes conclusory remarks for a clear set of guidelines and criteria for evaluating reserve proposals. The review of scientific literature is incomplete and must at a minimum receive a formal peer review by scientists and researchers familiar with the extremely broad range of disciplines addressed in the document. The document in its current form would represent

a setback to the goal of assessing the integration of marine reserves into traditional fishery management. The document suffers from what appears to be a highly insulated approach to a policy and management area that by its nature requires a broad and multi-disciplinary approach.

Sincerely,

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Program Manager
The Ocean Conservancy

Cc: Pacific Fishery Management Council Members

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