

Interview: Channel Islands Scientists Discuss their Work

MPA News spoke with two members of the Channel Islands science advisory panel about the roles of science and scientists in the reserve-planning process there. Satie Airame, a postdoctoral researcher with the Channel Islands National Marine Sanctuary, has served as the panel's sanctuary liaison; Robert Warner is a biologist at the University of California, Santa Barbara.

MPA News: Given similar goals for protection of ecosystem biodiversity and fisheries sustainability, would you expect that the same percentage set-aside recommended for the Channel Islands would apply to other marine areas?

Robert Warner: I would. The arguments for percent set-aside were generic, based mostly on fisheries data and models, and not on the specifics of the Channel Islands ecosystem.

Satie Airame: The size of individual reserves depends on many factors, including the purpose of the reserve, and social, administrative, and enforcement constraints. In the Channel Islands, the marine reserves working group and the science advisory panel identified over 100 species of interest with a diversity of life-history strategies and varying levels of dispersal. No single reserve size would be optimal for all species. Given the variety of habitats and species characteristics in the Channel Islands, the science panel recommended at least one reserve -- but not more than four -- comprising between 30-50% of the representative habitats in each of three biogeographical regions in the sanctuary. The fraction of habitat required to sustain populations will vary with species.

MPA News: How might a phase-in of the designation of reserve areas over a number of years -- as suggested by some fishers -- affect the efficacy of the reserves in the Channel Islands?

Warner: There has been major concern in this process for establishing a monitoring and evaluation program that could lead to adaptive changes in reserve design in the future. Since the indications are that small set-asides will have correspondingly small effects, we would be unable to evaluate reserve efficacy until after we achieved full implementation. A slow phase-in may mitigate short-term costs, but it also delays the onset of long-term benefits that are central to the sustainable fisheries goal.

Airame: The impacts of marine reserves depend on the current and historical levels of fishing, life-history characteristics of the fished species, and environmental conditions. Fast-growing animals and plants with low dispersal are likely to increase rapidly in no-take marine reserves located in areas [currently] under high fishing pressure; the same animals and plants may not show the same response if reserves are located in areas [currently] under lower fishing pressure. Phasing in reserves will diminish and delay the benefits of the reserve for conservation and fisheries management, particularly in areas of [currently] high fishing pressure, or under extreme environmental conditions (e.g. El Nino), or for species that are severely depleted (e.g. cowcod and bocaccio).

MPA News: Each scientist was appointed to the panel, in part, because he or she did not have a written track record on marine reserves (particularly in support of reserves), and therefore could be viewed as an objective arbiter. Was this necessary?

Warner: I think it is necessary to avoid mindless advocacy and to support objectivity. A scientific paper reporting the effects of reserve establishment is not, in my opinion, advocacy. It simply reflects expertise, which is valuable.

MPA News: Has the NCEAS consensus statement on marine reserves,* signed by several members of the Panel, affected the panelists' reputation of objectivity?

Warner: To me, the NCEAS consensus statement was a direct answer to claims that there is not enough existing science to make any statements about reserve function. In the opinion of the scientists that signed, there in fact is enough science: we know enough now to predict the effects of reserve establishment. Thus, to me, the statement is an objective clarification, not an act of advocacy. Reputation is a matter of personal perspective, and it depends on whom you ask.

Airame: Since the Science Panel was formed, members of the panel have become involved in other processes and activities related to marine reserves, including courses for students on marine policy and reserve design and conferences on the design

and effectiveness of marine reserves. In general, participation in these outside processes has been viewed as a positive step toward increasing the quality of scientific research and advice in public policy.

*Editor's note: A statement in support of the wider use of marine reserves to replenish fish stocks was released in February at a meeting of the American Association for the Advancement of Science. The statement was chiefly informed by the work of a research panel at the National Center for Ecological Applications and Synthesis (NCEAS), at the University of California, Santa Barbara ([MPA News 2:8](#)).

For more information:

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