

Scientific Consensus Statement on Marine Reserves¹

Problem Statement:

The declining state of the oceans and the collapse of some coastal fisheries creates a critical need for new and more effective management of marine biological diversity, populations of exploited species and overall health of the oceans. Fully protected marine reserves are a management tool that can alleviate many of these problems but there are currently very few such reserves in United States waters.

Ecological effects *within* reserve boundaries:

- 1) Reserves result in long-lasting and often rapid increases in the abundance, diversity and productivity of marine organisms.
- 2) These effects are due to decreases in mortality and habitat destruction and to indirect ecosystem effects.
- 3) Reserves reduce the probability of extinction for all marine organisms resident within them.
- 4) These benefits increase with larger reserves, but even small reserves have positive effects.
- 5) Full protection is critical to achieve this full range of benefits.

Ecological effects *outside* reserve boundaries:

- 1) The size and abundance of exploited species increase in areas adjacent to reserves.
- 2) There is evidence that reserves replenish populations regionally via larval export.

Ecological effects of reserve *networks*:

- 1) There is evidence that a network of reserves, connected by larval dispersal, buffers against the effects of environmental variability and provides greater protection for marine communities than a single reserve.
- 2) There is evidence that a network needs to span large geographic distances and encompass a substantial area and variety of habitats to protect against catastrophes and provide a stable platform for the long-term persistence of marine communities.

Based on this scientific consensus:

- There is sufficient scientific information to justify the immediate application of fully protected marine reserves as a critical management tool.
- Reserves conserve both fisheries and biodiversity.
- Reserves are the best way to protect resident species and provide heritage protection to important habitats.
- Reserves must be established and operated in the context of other management tools.
- Reserves need a dedicated program to monitor and evaluate their impacts both within and outside their boundaries.
- Reserves provide a critical benchmark for the evaluation of the threats to ocean communities.

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