

Proposed Topic for the ESMWG

Aquaculture and Ecosystems in the 21st Century: Recent NOAA efforts to promote US aquaculture will have consequences for marine and coastal ecosystems. These interactions affect the sustainability of aquaculture expansion, as well as the extent to which aquaculture can successfully co-exist with other uses of marine and coastal resources. Moreover, the extent to which the public supports aquaculture development in the US often depends on perceptions (and sometimes misperceptions) of ecosystem interactions. This report will consider US aquaculture expansion from a broader ecosystem context, and advise NOAA on how an ecosystem perspective can help the agency promote more sustainable, productive and beneficial aquaculture nationwide.

The measured and potential impacts of aquaculture activities that are centered in our bays and estuaries has led to a widespread mistrust of “farm-raised” finfish and other products, particularly on the West Coast. Over the past 20 years, there have been significant advances in feed production and delivery, disease and parasite management, net pen design, and multi-species culture systems that reduce waste impacts on native ecosystems. Offshore systems for fish and shellfish also hold potential for aquaculture that has lower environmental impact. However, several concerns remain, including potential introduction of exotic species and parasites, the “footprint” of fish and shellfish farms in an increasingly crowded nearshore, and sea level rise.

If this topic is supported by the SAB, we will invite key personnel of NOAA’s Office of Aquaculture and Sea Grant that have been working with farmers and communities on existing and proposed aquaculture projects from different parts of the country. The proposed report is directly relevant to NOAA’s Ecosystem Approach to Aquaculture (EAA), and will build upon this prior effort. It will speak to both legal requirements that demand environmental stewardship and the science that allows aquaculture to meet those requirements. To provide context, we will review the scope of a limited number of projects and their potential impacts on coastal ecosystems, planned mitigation of those impacts, and “lessons learned” from similar projects in the United States and elsewhere. We will also review current management oversight and environmental impact review. Our report will pay particular attention to changing coastal ecosystems and the impacts of both current and future aquaculture practices, along with potential mitigation of those impacts. The report development will be led by ESMWG members Selina Heppell and Jim Cowan, with assistance from other ESMWG members and in coordination with ESMWG contacts from NMFS, NOS and AOR.