

**2008 Annual Meeting Plenary Session:
*Fisheries in Flux: How Do We Ensure Our Sustainable Future?***

The goal of the 2008 Plenary Session is to deliver a thought-provoking and engaging series of presentations about issues affecting fisheries and fisheries professionals in the workplace. We will examine the meeting theme, *Fisheries in Flux: How Do We Ensure Our Sustainable Future*, by exploring the biological, political, and social constraints within which we work.

Fish communities and fisheries are not static properties of ecosystems – an observation that challenges our understanding of ecosystems and how we approach natural resource management. To better understand dynamic systems, we must study ecological conditions at multiple points in time, implying that we have much to learn from the past, and that baselines are crucial to our understanding. Dr. William Gilly will illustrate this through his experience with the Sea of Cortez Expedition and Education Project that retraced the 1940 voyage by John Steinbeck and Ed Ricketts in the Sea of Cortez.

Although fisheries professionals may be armed with the latest data, the best scientific models, and the newest approaches, fisheries science advice may not carry the impact we desire. Dr. Jake Rice will challenge us to consider how discussions of economic incentives can promote fisheries goals and reduce ecosystem impacts. His examples from Canadian and European fisheries will shed new light on how we manage fisheries throughout the world.

Finally, the fisheries professionals who manage fisheries, conduct research, and set policy are critical to ensuring the sustainable future of our fisheries resources. Dr. Sally Guynn will help us understand our important role as leaders of change, and how professional communities and their culture can facilitate the realization of sustainable fisheries.

***Change in the Gulf of California: What is the future of the Aquarium to the World?*
Dr. William Gilly – Stanford University**

Mexico's Gulf of California, a UNESCO World Heritage Site, is a sea of exceptional productivity where "...almost all major oceanographic processes occurring in the planet's oceans are present...", giving it extraordinary importance for the study of marine and coastal processes." (<http://whc.unesco.org/en/list/1182>).

The Gulf is home to 5,000 species of invertebrate macrofauna, nearly 1,000 species of fish and 40% of the world's marine mammal species. Although the Gulf has been studied by at least 500 scientific cruises since 1825, relatively few studies have taken a holistic view or explicitly addressed long-term changes in this storied body of water. Since 1935 a variety of human activities, ranging from damming the Colorado River to constructing Cabo San Lucas, have touched all parts of the Gulf. The Steinbeck-Ricketts expedition of 1940 provides a unique baseline for comparison with more recent observations of intertidal, pelagic and human communities, including a retracing in 2004 of the entire 1940 expedition. Although the Gulf remains a stunningly beautiful and productive place, it indeed has changed and will continue to do so. Large fishes and snails have been replaced by smaller individuals of other species; Humboldt squid have replaced yellowfin tuna as a dominant pelagic predator; a mesopelagic hypoxic zone has greatly expanded; vast agriculture, aquaculture and tourism industries have arisen. "Far from being the remote fishing village of twenty years ago, Cabo San Lucas beckons to 400 cruise ships a year. Over one million annual visitors can't be wrong." (<http://www.loscabosguide.com/cabosanlucas/index.html>).

Biography: Dr. William Gilly

William Gilly received a B.S.E. from Princeton University in Electrical Engineering and a Ph.D. in Physiology and Biophysics from Washington University. The first 30 years of Dr. Gilly's research career focused on mechanisms underlying electrical excitability in nerve and muscle cells, with most of his work being done on the giant axon system of squid. Following his arrival at Stanford in 1980, Dr. Gilly's interests expanded to include behavioral and developmental work in squid and other invertebrates, again from a neurological point of view. In 2001, Dr. Gilly initiated field



ecological studies of the Humboldt squid in the Gulf of California. His work using archival electronic tags has revealed surprising insights into the ecology of this powerful and adaptable predator that in recent years has spread from central California to southeast Alaska, consuming commercially valuable fish species along the way. In 2004, Dr. Gilly led the Sea of Cortez Expedition and Education Project (<http://www.seaofcortez.org/>) that retraced the legendary 1940 voyage of John Steinbeck Ed Ricketts in an effort to discern long-term ecological changes and to consider them in light of human activities. He continues to study Humboldt squid in the Sea of Cortez and Pacific Ocean.

Economic Incentives Can Promote Fisheries Goals and Reduce Ecosystem Impact ***Dr. Jake Rice – Department of Fisheries and Oceans***

Science advice to policy has often been to reduce exploitation rate and allow stocks to rebuild, with the short term sacrifice repaid through higher sustainable harvests from larger and more resilient stocks. Such advice has often ended up not being reflected in decision-making, presumably to avoid the short-term costs. This apparent disconnect has been a major source of frustration to the science community. Scientists often blame short-term political considerations for outweighing sustainability and conservation, yet no decision-maker wants to leave a legacy of ecological – and the consequent social and economic – disaster. Correspondingly, in the past decade at least four different pathways have been explored for breaking the disconnect between science advice to reduce harvests and decision-making: improved communication of science; adoption of rule-based decision-making; advocacy science; and, linking ecological sciences to social and economic sciences.

Dr. Rice's talk will consider all four pathways; the first three briefly. It will argue that the potential for greatest progress in strengthening the impact of sound science advice can be made in linking the advice to actions for addressing perverse social and economic incentives that foster a political receptivity to short-sighted decision-making. If the incentive structures in the fisheries promote a longer-term view by the resource users they become, naturally, allies with the ecologists in supporting politicians who show long-term vision in their decisions. Dr. Rice's talk will review some major economic instruments for fisheries management from an ecological perspective, and highlight inherent affinities between the objectives of both the science advice and the social and economic instruments. The talk will conclude with some optimistic words about the types of research partnerships that may really make a difference to achieving sustainable fisheries on healthy stocks, in communities and ecosystems that are both resilient.

Biography: Dr. Jake Rice

Dr. Jake Rice is National Senior Advisor – Ecosystem Sciences for the Department of Fisheries and Oceans (DFO), Canada. Dr. Rice spent 11 years as Director of Peer Review and Science Advice for DFO. Prior to this, he held senior positions in the Pacific and Newfoundland Regions.



Dr. Rice has held faculty positions at Newfoundland's Memorial University, Arizona State University, and the University of Copenhagen. He received his B.Sc. from Cornell (1970 - Conservation) and a Ph. D. from the University of Toronto (1974 - Ornithology). Dr. Rice has more than 150 publications in the scientific and technical literature, covering many aspects of what is now considered the ecosystem approach to integrated management. He has been increasingly interested in methods for increasing the impact of science advice on policy and management decision-making, prompting his current work on the interactions of social and economic incentives with biological advice, and serving as science advisor to the DFO International Policy group. He has chaired more than a dozen major DFO science planning or review committees, served on the NOAA Science Advisory Board and the External Ecosystem Review Team, and participated in, and often chaired, expert groups for ICES, PICES, FAO, IOC, MSC, CBD and, currently, the UNEP/IOC GRAME Assessment of Assessments.

Taking the Lead ***Dr. Sally Guynn***

The third critical factor in a virtual equation for ensuring the sustainable future of fisheries is: the human factor. Fisheries is as great as the people who make it happen. But how do fisheries professionals effectively lead in a time of flux, while facing the perfect storm?

The importance of fisheries professionals as leaders of change, and the constraints and opportunities for leveraging our individual and corporate strength will be explored in this plenary presentation.

Biography: Sally Angus Guynn

Sally Angus Guynn, PH.D., is a senior organization development consultant with the Association of Fish and Wildlife Agencies' Management Assistance Team (MAT). She also serves as the Executive Director of the National Conservation Leadership Institute. Sally brings 20 years of commitment and comprehensive experience to the field of change management. She has served as exuberant lecturer, provocative author, creative facilitator, compassionate consultant, and researcher, with specific attention to senior management consultation and coaching. Leadership, workforce diversity and organizational culture are her key areas of focus.

Sally has a rich and varied background in education, having taught Grades kindergarten to college. For the last several years, she has taught a Master's program in strategic leadership as adjunct faculty at Mountain State University in West Virginia. In another life, she created a private elementary school in Virginia and served as its Headmistress for six years.



Before joining the Management Assistance Team in 1993, Sally headed up education for the Virginia Department of Game and Inland Fisheries.

Sally earned a Bachelor's degree in biology from the University of Richmond, Virginia, a Master's degree in science education from the University of Virginia, and a Doctorate in organization and human resource development from Colorado State University.

A native Virginian, Sally now lives and works in Shepherdstown, West Virginia, with her husband, Dwight. She has two grown sons, three grandchildren, and a cairn terrier. Sally enjoys hunting and fishing, writing, horseback riding, art, and good friends.

Sally promises that no biologists were harmed in the production of this biography.