

Scientific communication key to survival of charismatic ocean mammals

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(PhysOrg.com) -- The way that California seals are regarded by the public, and environmental law in Mexico, could change based on studies by scientists like Arizona State University's Leah Gerber and Utah State University's Susannah French. But there's a hitch: Most people, the public and the decision-makers who could rewrite protections, aren't going to read it.

Working at the intersection of conservation, policy, science and society, Gerber, an associate professor with the School of Life Sciences in ASU's College of Liberal Arts and Sciences, studies the creation and efficacy of marine preserves, the impact that whaling has on global fisheries, and how ecotourism affects local communities, including people and seals.

"Building the conversation with international collaborators, the public and local communities, is becoming increasingly important in ecology," Gerber says. "That means that developing effective conservation strategies is highly dependent upon not only my science, but my ability to engage and effectively communicate with local communities."

If local communities do not support proposed management actions, those actions won't be viable, particularly in countries where there is little enforcement.

For example, one aspect fueling Gerber's work to develop better conservation management strategies is through her work with the California sea lion (*Zalophus californianus*). Funded by a National

Science Foundation CAREER Award, her research draws upon the public appeal for marine mammals to help develop outreach programs in conservation biology and the natural sciences. Working with local fisherman and communities in Mexico, Gerber's project has provided hands on-research experience with sea lions for more than 60 U.S. and Mexican undergraduate students over the course of seven summer field seasons on six remote islands in the Gulf of California in Mexico.

“The Gulf of California has long been subjected to intense fishing pressure. As a consequence, populations of many marine species have collapsed, including sharks, large groupers, and sea turtles,” Gerber says. “Working with local stakeholders in the Gulf of California, I hope to foster the development of skills and attitudes that permit the local communities to seek resolutions to questions and issues of conservation and economic need while constructing new approaches to problem-solving.”

Because the establishment of isolated marine reserves may not alone suffice for the conservation of biodiversity in this area, Gerber says that conservation scientists need to examine the level of connectivity in a region (both biological and human).

“An important practical question in the conservation of endangered species concerns the extent to which recovery plans incorporate scientific knowledge in establishing guidelines for recovery efforts,” Gerber says. “But it's necessary to have the communities voice included and buy in,” she adds. “Information from local communities can help to develop scenarios that address feasibility, opportunity and investment – such as ecotourism.”

To help her develop her communication skills, Gerber recently applied for and was awarded a prestigious Leopold Leadership Fellowship. Developed by Stanford University's Woods Institute for the

Environment, the program helps academic scientists develop more effective communication strategies so that they can translate knowledge into information accessible to decision makers and the public, locally, nationally and internationally.

Gerber's research findings have been used to develop Endangered Species Act listing criteria for species ranging from gray whales to Steller sea lions and red squirrels, and informed international whaling and commercial fisheries policy through the International Whaling Commission meetings. Developing her communication with non-scientific audiences can only strengthen her ability to support decision-makers and offer scientific solutions to what can be emotionally charged or politicized management decisions, Gerber says.

French and Gerber's most recent publication in the Public Library of Science (PLOS) reveals that California sea lions in the Gulf of Mexico are under threat from a conservation strategy designed to protect their survival – ecotourism. Fewer pups are born, and populations are declining, even though the local community has worked hard to make it work. These findings mean going back to the drawing board, from which the ecotourism model for the area arose, perhaps more effectively engaging those same stakeholders, students, NGOs, and fisherman, while speaking too for the science and the seals.

Provided by Arizona State University

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