

Elusive industry input critical for squid management: study

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(PhysOrg.com) -- If you want to know how the fishing is, ask a person who fishes. That's the gist of a University of Maine study of cooperative research efforts in the nation's *Illex* squid fishery.

Teresa Johnson, an assistant professor of marine policy in the University of Maine's School of Marine Sciences, concludes in a recent research paper that the preservation and protection of both the species and those who catch [squid](#) for a living depends on cooperation among scientists and those who do the fishing.

The *Illex* squid (*Illex illecebrosus*) is a comparatively small but important resource for the Northeast. The northeastern fishing fleet consists of only about 70 vessels, of which 15-20 fish regularly, and catch quotas since 2000 have been set at 24,000 metric tons, a somewhat arbitrary number based on a lack of specific information, according to Johnson. In 2009, the National Marine Fisheries Service reported *Illex* squid landings, about half of the total squid catch, in the Northeast, was worth more than \$9.6 million.

Accurately assessing and projecting stock populations and locations are particularly important in the squid fishery since population variables are many. *Illex* squid lifespan is short — one year — and the females die within a few days of mating and spawning. “The species’ life history and poor data availability make it difficult to conduct a reliable population assessment,” Johnson says, citing the Northeast Fishery Science Center.

Johnson, whose research includes the human dimensions of marine fisheries, says in her analysis of the tenuous relationships between scientists and fishermen that input from those who fish has been largely absent from previous regulatory efforts. That's made documenting where squid populations are plentiful or not, the size of the small soft, cephalopods and catch-forecasting difficult.

To improve the accuracy of stock assessment, Johnson emphasizes the importance of "boundary spanning," or melding of the interests of all stakeholders in the discussion of stock assessment, management and regulation. A relatively new concept, largely because of distrust of government by many fishermen, an on-and-off-again willingness by fishermen to share actual catch data with government scientists, boundary spanning has brought elusive details to the table. It has resulted in much more accurate, real-time reports on how the industry is really doing, Johnson says.

The collaboration is part of a growing trend for scientists to consider and accept experience-based knowledge along with research-based knowledge, she notes.

"Although there are many cases where citizens are involved in identifying research priorities, collecting data, or interpreting research results for policymaking, they are typically not active participants in all phases of scientific research," Johnson says.

The value of the "participatory paradigm," Johnson says, should not be underestimated.

"The benefits of collaboration, including the sharing of expertise and boundary spanning, are by no means guaranteed," she cautions. Conflict mediation is also important, albeit difficult, because "extraneous events can quickly erode trust and impede collaboration despite results of

considerable value.”

Gaining the trust of those on the boats is a slow and fragile process because of the perception among fishing communities that industry regulation is heavy-handed and arbitrary. The few instances where scientists have been allowed to tag along on fishing vessels and record when, where and how squid are caught have been productive, according to Johnson. It’s been educational for both scientists and fishermen, she says.

“The boundary-spanning seen in cooperative research is expected to reduce conflicts between fishermen and scientists and thus create ‘buy-in’ to science-based management,” Johnson concludes.

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Provided by University of Maine

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