AKCRRAB opinion piece-long version

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The following is an opinion piece.

Research Goal: Filling King Crab Pots Throughout the State
By Jeff Stephan, Heather McCarty and Gale Vick

Tiny king crab clinging to artificial seaweed may be the key to rehabilitating some of Alaska’s long depressed king crab stocks. The juvenile crustaceans were hatched at the Alutiiq Pride Shellfish Hatchery in Seward, and are the result of one of the most exciting and important fisheries research projects in the state.

Scientists and fisheries managers have been baffled for decades about why king crab stocks in Kodiak and the Bering Sea collapsed and how and when the lucrative fisheries they once supported can be reopened. The Alaska King Crab Research, Rehabilitation and Biology Program (AKCRRAB) has drawn together scientists from the National Marine Fisheries Service (NMFS), University of Alaska Fairbanks School of Fisheries and Ocean Sciences (SFOS), and Alaska Sea Grant and representatives of the crab industry and coastal communities into a team dedicated to finding the answers.

In only its second year, AKCRRAB’s research team of production biologists, graduate students and scientists has made great progress toward advancing the science and technology necessary to support hatchery production of juvenile king crab. The group has successfully launched a host of scientific studies that should result in greatly improved information about Alaska’s king crab stocks. The project is focusing its research on eventually rehabilitating stocks of Kodiak red king crab and Pribilof Islands blue king crab, but the technology and research
can be used to help restore king crab populations in Kachemak Bay, Southeast Alaska or anywhere else in the state.

The hatchery’s production biologists were very successful in spawning both stocks of crab this year, producing 40,000 juveniles or 10 percent of the hatched larvae, compared to only 1 per cent in 2007. The hatchery team’s goal for 2009 is to improve overall survival rates through the larval stages to more than 50 percent. For comparison, a successful hatchery program for Chesapeake Bay blue crab produced 5 percent survival to the juvenile stage in its first few years. At the same time, scientifically structured research projects examining larval nutrition, rearing densities and rearing temperatures were conducted at the hatchery by SFOS scientists and graduate students.

Production of the juvenile crab has allowed several other projects to move forward, including research by scientists at the NMFS Alaska Fisheries Science Center Behavioral Ecology Lab in Newport, Oregon, into predation by rock sole and Pacific cod, substrate preference of juvenile red and blue king crab, juvenile crab nutrition, enhancement release strategies, tagging experiments and studies that examine the interaction between wild and hatchery produced juveniles. Another AKCRRAB study involves a University of Alaska Southeast scientist and SFOS graduate student who are searching for unique genetic markers that could help distinguish hatchery produced crab from wild stocks.

AKCRRAB also plans to conduct habitat studies around the Pribilofs and Kodiak to determine the location of preferred habitats in the two regions, continue with genetic research and gather other information that should significantly improve the tools available to resource agencies to effectively manage the king crab resources of Alaska.

The project is developing the critical components of scientific knowledge and understanding of mass crab culture technology needed to produce enough healthy juvenile crab for a rehabilitation and enhancement program by 2011. Much work needs to be accomplished over the next three years and some research will continue beyond that point. In addition to supporting the rehabilitation goal, the research will substantially increase the body of knowledge available to state and federal resource managers regarding the early life stages of king crab.

The best science in the world by itself will not be enough to make the stocking of juvenile king crab a reality. That’s a decision which can be made only after the agencies, king crab industry and coastal communities closely examine the costs and benefits of a biologically-sound rehabilitation and enhancement program. Indeed, the strong involvement of fishermen and coastal residents is necessary for the project to succeed.

Funding is a good example of where community and industry support is vital. AKCRRAB has been very successful thus far in cobbling together funding
through a wide variety of sources, but critical federal dollars are increasingly
difficult to obtain and state dollars are tied directly to support of the fishing
communities and fleets. Both federal and state funding sources have stressed the
importance of securing matching money from industry as the key to leveraging
government research funds.

Industry funding also is critical for responding to immediate needs. For
example, two Community Development Quota groups (Central Bering Sea
Fishermen’s Association and Norton Sound Economic Development Corporation)
this spring funded a successful effort by an Alaska Sea Grant Marine Advisory
Program agent from Nome to collect egg-bearing blue king crab from below the
ice at Little Diomede Island. Some of these crab spawned this spring and the
remainder should spawn this winter.

Kodiak crabber Lu Dochtermann showed how important private support is
to the project when he arranged during the 2007 Bristol Bay fishery for his vessel
to bring egg-bearing red king crab back to Kodiak. Dochtermann has agreed to
collect more female crab for the project from the 2008 fishery.

While political and financial support is important, the most compelling
reason AKCRRAB is seeking greater industry involvement is that there will be no
enhancement programs unless they are industry run and financed. Considering the
diversity of opinion in Alaska’s seafood industry and complexity of the state and
federal regulatory processes, it may take several years before a large-scale
rehabilitation and enhancement program can be launched.

While the dime-sized juvenile king crab hanging on to the artificial seaweed
in the tanks of the Alutiiq Pride Shellfish Hatchery in Seward don’t measure up to
the giant crustaceans now pulled from the depths of the Bering Sea or Gulf of
Alaska, we are convinced the AKCRRAB project eventually will help fill crab pots
throughout the state.

For more information about the Alaska King Crab Research, Rehabilitation and
Biology Program, visit the Web site at:
http://seagrant.uaf.edu/research/projects/initiatives/king_crab/general/

All three authors are members of the AKCRRAB steering committee and were
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of Alaska Coastal Communities Coalition, is a commercial salmon fisher who is active in fisheries issues.

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