

Hatchery Reared Crab Survive Well in the Wild

An update on a research project aimed at boosting red king crab stocks at Kodiak released Feb. 10 says there is evidence now that future rehabilitation efforts there could be ecologically viable.

So far those hatchery crab have survived about as well as juvenile crab survive in the wild, according to the report from the Alaska King Crab Research, Rehabilitation and Biology Program.

NOAA researchers Chris Long, Pete Cummisky and Eric Munk released some 11,250 red king crab into experimental plots in Trident Basin, near Kodiak, Alaska, in August 2014, and have since tracked their survival and movement.

The released juveniles were reared at the Alutiiq Pride Shellfish Hatchery in Seward from broodstock collected in the fall of 2013 in Alitak Bay.

This stage of the experiment tests the viability of using hatchery-reared crab to supplement wild stocks, and helps determine optimal density for future releases, researchers said.

Divers released the juvenile crab into five meter by five-meter quadrats marked with ground line at 25, 50 and 75 crab per square meter. Then they began monitoring crab density inside the plots to estimate survival, and outside the plots to estimate crab movement. They also determined predator densities and did crab tethering experiments to see if predator density or risk was affected by crab density.

The released juveniles, they found, suffered about 65 percent mortality within 24 hours, similar to that of other hatchery-reared animals when released into the wild.

After that, the crab loss rate within the plots was similar to that in healthy populations, and mortality rate and predation risk did not change with release density, they said.



Red king crab counted out into a jar, are ready for release by divers into experimental plots in Trident Basin, near Kodiak. The juveniles released in August 2014 were reared at the Alutiiq Pride Shellfish Hatchery in Seward, Alaska, from broodstock collected in Alitak Bay in the fall of 2013. Photo courtesy of the Alaska King Crab Research, Rehabilitation and Biology Program.

Using tethering experiments they found that predation risk decreased from August to October, but was not affected by release density.

This indicates, they said, that the ecosystem around Kodiak is capable of supporting a healthy population of red king crab and that future releases could be done at high densities, thereby reducing costs. They have yet to learn about mortality of these hatchery-reared crab at later stages, information that could affect the success of release programs.

This year they plan another set of experiments in which crab of different sizes will be released to see how size affects overall loss rate. They also plan to try strategies such as releasing crab at night when predation may be low, to reduce the initial high mortality.

The AKCRRAB program is a collaborative effort of fishing industry groups, Native groups, coastal Alaska communities, the University of Alaska Fairbanks' School of Fisheries and Ocean Sciences, Alaska Sea Grant, and state and federal agencies. **FN**

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