

SCOMM

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ALASKA CRAB STOCK

Enhancement and Rehabilitation

Workshop Proceedings



Bradley G. Stevens, Editor


Sea Grant
Alaska

ALASKA SEA GRANT

Alaska King Crab Research and Rehabilitation Program

Boom, then bust

Alaska's king crab fisheries were once the envy of the world. From Southeast Alaska to the Bering Sea, Alaska waters supported a king crab bonanza, and thriving fisheries to harvest them.

For decades, Kodiak Island fishermen enjoyed bountiful harvests of red king crab. At its peak in 1965, fishermen caught 94 million pounds of the giant crustacean, valued at \$12.2 million. In Bristol Bay, fishermen caught 130 million pounds of red king crab, worth \$115 million during the 1980 season. And in the frigid Bering Sea waters of the Pribilof Islands and St. Matthew Island, 14 million pounds of blue king crab, worth about \$10 million, filled the pots of the region's fishermen during the 1981 season.

But the king crab boom was not to last. By the early 1980s, king crab stocks had begun a precipitous decline across the Alaska fishing grounds. The collapse of the Kodiak red king crab stock took with it a significant portion of the island's economy. And despite more than two decades of fishery closures, the Kodiak stock has shown no sign of recovery. In the Bering Sea, two distinct stocks of blue king crab also have not fared well. Today, the stocks remain depressed, and the fishery has been closed since 1999.

Grassroots call to action

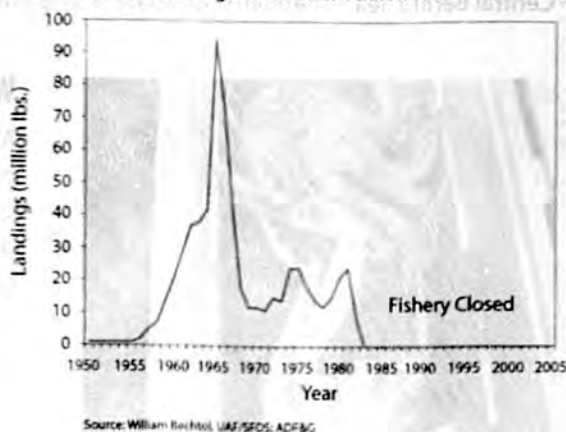
At the request of Kodiak and Pribilof Island fishermen, Alaska Sea Grant convened a workshop in March 2006 that brought fishermen together with scientists and managers to discuss hatchery enhancement as a way to rebuild red and blue king crab. Experts from around the world explained that enhancement of wild crab stocks is scientifically feasible. During the workshop, fishermen endorsed enhancement as a tool for restoring king crab stocks and revitalizing the fisheries.

Stock enhancement involves raising crab larvae in a hatchery and releasing juveniles into the wild to increase the size of existing wild crab stocks.

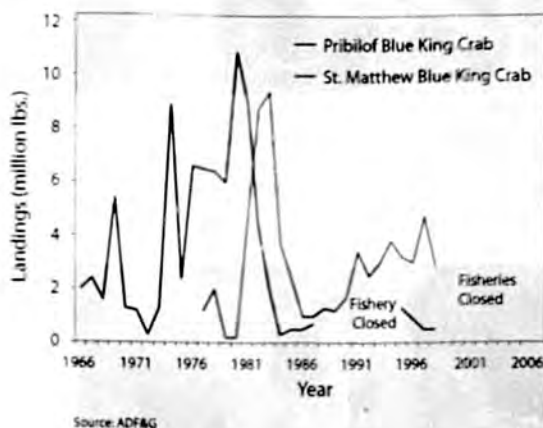
Partnership formed to rebuild red and blue king crab stocks

Alaska Sea Grant has joined with regional fishermen's groups, the Alaska Department of Fish and Game, NOAA Fisheries, the Alutiiq Pride Shellfish Hatchery, Chugach Region Resources Commission,

Kodiak Red King Crab Commercial Harvest 1950-2006



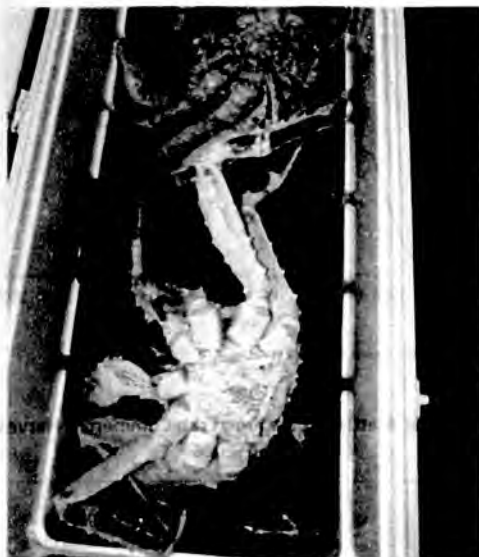
Pribilof/St. Matthew Blue King Crab Commercial Harvest 1966-2006



NOAA Fisheries research biologists Sara Perssell and Brad Stevens display one of 32 red king crabs collected in waters around Kodiak Island for use in a collaborative effort to rebuild Kodiak's red king crab stocks. Photo courtesy NOAA Fisheries.

and the University of Alaska Fairbanks School of Fisheries and Ocean Sciences, to launch a research program aimed at hatching and rearing red and blue king crabs in a large-scale hatchery setting. The ultimate goal of the project is to restore and rehabilitate depressed king crab populations near Kodiak Island and the Pribilof Islands. This coalition of state, federal, and stakeholder groups views the effort as important to the region's long-term economic development.

The program is supported by the City of Kodiak, Kodiak Island Borough, Alaska State Rep. Paul Seaton (Homer), State Sen. Gary Stevens (Kodiak), Alaska Crab Coalition, United Fishermen's Marketing Association, Pribilof Islands Collaborative, Central Bering Sea Fishermen's Association, and the Aleutian Pribilof Island Community Development Association.



Red king crabs are packed, upside down, into coolers for the trip to Seward. The crabs are upside down to prevent them from crawling around and injuring themselves or others. Photo courtesy Jason Wettstein, Alaska SeaLife Center.



Red king crabs the size of dinner plates were collected in waters around Kodiak Island as part of this project. Photo courtesy NOAA Fisheries.

What's happened so far?

ADFG biologists collected 32 red king crabs from Kodiak Island's Alitak Bay, while fishermen under permit from ADFG collected 28 blue king crabs from the Pribilofs. ADFG is conducting baseline pathology and genetic fingerprinting analysis to ensure the stocks are disease free and can be genetically identified and distinguished.

The egg-bearing brood stock females are overseen by the Alutiiq Pride Shellfish Hatchery in Seward, and are presently being cared for by technicians at the University of Alaska Fairbanks Seward Marine Center. Eggs from these brood stock females will hatch in late January and into February, and the larvae will be reared at the hatchery for about two months, until they reach a juvenile stage. Alaska Sea Grant graduate students will conduct studies in summer 2007 aimed at understanding the cultivation and rearing needs of larval and juvenile red and blue king crabs.

Project leaders hope to have necessary permits and additional funding within about two years for a pilot program to release and monitor juveniles in the wild.

What's needed to make this effort succeed?

Capital funding will be required to upgrade the facilities at the Alutiiq Pride Shellfish Hatchery. Additional saltwater tanks and associated hardware will be required, as the hatchery is already at capacity with existing commitments to raise oyster seed, geoducks, mussels, and other shellfish for Alaska's growing shellfish aquaculture industry.

Funding is also necessary for genetic and environmental studies and monitoring that will be required before, during, and after the release of juvenile crabs during the pilot restoration phase. We estimate the total costs to be approximately \$2.5 million over the next three years.

For more information contact Brian Allee, Ph.D., Director, Alaska Sea Grant College Program, Fairbanks, Alaska 99775-5040, allee@sfos.uaf.edu, 907-474-7949.

Online: alaskaseagrant.org



Alaska King Crab Research and Rehabilitation Program Frequently Asked Questions About King Crab Enhancement

What steps are being taken to reduce the potential for spreading disease to wild stocks?

The State of Alaska has one of the strongest fish pathology programs in the country and has imposed strict regulations to protect wild stocks from disease. The Alaska King Crab Research and Rehabilitation Program (AKCRRP) team has been working closely with the Alaska Department of Fish and Game (ADFG) Fish Pathology Laboratory to develop a baseline for analysis of king crab stocks in the field and hatchery. At the Alutiiq Pride Shellfish Hatchery in Seward, tanks holding red and blue king crab are quarantined from other species and one another by a number of barriers, and all effluent water from holding tanks is treated before it is discharged. ADFG will require disease screening of juvenile crab prior to any release into the wild.

What is being done to protect the genetic integrity of wild stocks?

Like its fisheries pathology counterpart, ADFG's genetics program is one of the strongest in the country. Shellfish used to enhance wild stocks must have been produced from broodstock from the zone in which the stocking is taking place. In addition, ADFG requires a large pool of spawning female crab to ensure genetic diversity in the progeny. AKCRRP scientists have been working closely with the ADFG genetics staff in collecting samples for genetics screening, which is expected to start in early 2007. In addition, each batch of juvenile crab will be produced from new wild broodstock, ensuring natural genetic variability and preventing any loss of vigor due to hatchery effects.

Will fish stocks simply eat the crab after they are released?

Predation of juveniles by abundant stocks of bottomfish may be a major factor in the recovery of Kodiak and Pribilof king crab stocks. Potential stocking areas will be examined closely by divers to determine whether the sites provide juvenile crab with enough natural cover to hide from predators. AKCRRP also will use hatchery-reared juveniles to experiment with "outplanting" strategies, including predator exclusion devices, substrate preferences and other issues associated with increasing survival rates of stocked crab. Survival also may be increased by releasing larger juveniles.

What role does cannibalism play in the survival of young king crab in the hatchery?

It is understood that crab are quite cannibalistic during the early life-stages. Studies will be conducted with devices that physically separate the crab, following approaches that have met with some success in lobster and blue crab culture. Other methods of reducing or eliminating cannibalism mortality will be explored.

How will researchers monitor crab after release to determine the efforts success?

Scientists working on blue crab culture on the East Coast have successfully marked juveniles with coded wire tags similar to those used to mark hatchery-produced salmon fry in Alaska. Experiments with marking juvenile king crab produced at the Seward hatchery in this manner will be conducted in late 2007 and through 2008. The science team also is exploring the potential for genetic marking, which can be used for crabs stocked at any size as a method of measuring the success of stocking programs.

Is king crab enhancement economically feasible?

AKCRRP research over the next three years should provide enough information to answer that question. Not enough is known at this point about such critical issues as the cost of producing large numbers of juvenile crab, survival rates of released crab, and large scale facility requirements.

Who is behind the Alaska King Crab Research and Rehabilitation Program and how is this project funded?

The AKCRRP initiative is collaboration between the University of Alaska, the National Marine Fisheries Service, Alutiiq Pride Shellfish Hatchery, fishing groups and economic development entities such as the Central Bering Sea Fishermen's Association and the United Fishermen's Marketing Association, and the Aleutian Pribilof Economic Development Association, and coastal communities including Kodiak, Saint Paul and Saint George. It has assembled an impressive scientific team, and is building upon several years of king crab culture research by the NMFS center in Kodiak and crab aquaculture projects around the world. A solid study plan has been adopted. The king crab enhancement initiative is a priority of the University of Alaska and has attracted significant support from NMFS. To date, Alaska Sea Grant, the State of Alaska, NMFS and industry groups have committed about \$500,000 to the project. AKCRRP needs about \$2.5 million from private and public entities to fund the project through 2009.



Alaska Sea Grant College Program
PO Box 755040
Fairbanks, AK 99775-5040
Phone (907) 474-7086 • Fax (907) 474-6285
www.uaf.edu/seagrant

February 16, 2007

Hon. Paul Seaton, Alaska State Representative
Chair, House Fisheries Special Committee
Alaska State Legislature
State Capitol, Room 102
Juneau, AK 99801-1182

Dear Rep. Seaton and Distinguished Committee Members:

It is with pleasure that I offer you the enclosed information detailing the Alaska King Crab Research and Rehabilitation Program. This new research program, headquartered at the University of Alaska Fairbanks and run by the Alaska Sea Grant College Program, seeks to understand the mass-culture needs and feasibility of hatcheries as a means to rebuild wild stocks of Kodiak Island red king crab and Pribilof Island blue king crab.

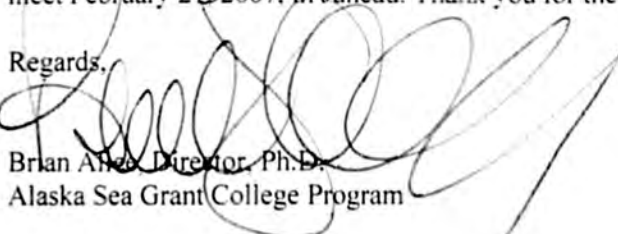
Commercial fishing for Kodiak red king crab, once among the state's largest commercial fisheries, has been closed since 1982. Commercial fishing for Pribilof blue king crab has been closed most recently since 1999. Despite noble management efforts to rebuild these depressed stocks, their populations remain unacceptably low. At a March 2006 workshop in Kodiak sponsored by Alaska Sea Grant, Alaskans heard from international experts on the state of crab culture, and learned that other nations and states had taken bold steps toward hatchery programs to rebuild their stocks. Alaska scientists, commercial fishing interests, coastal community residents, city officials and economic development specialists at the meeting urged Alaska to initiate a research effort aimed at better understanding the feasibility of large-scale hatcheries. Soon after, Alaska Sea Grant launched the Alaska King Crab Research and Rehabilitation Program.

Key partners in this effort are the Central Bering Sea Fishermen's Association, United Fishermen's Marketing Association, Aleutian Pribilof Island Community Development Association, the Alutiiq Pride Shellfish Hatchery, and the communities of Kodiak and the Pribilof Islands. However, funds to maintain the program have not yet been identified.

To date, we have collected 58 adult red and blue king crab, and expect to hatch several million crab larvae within the next few weeks for phase one of our research efforts. None of these new crab will be released into the wild. They will be used in research to understand and refine the culturing processes needed to one day operate large scale hatcheries, should the State of Alaska deem such hatcheries vital to rebuilding these stocks.

I look forward to sharing with the Committee more about this worthwhile effort when we meet February 21, 2007, in Juneau. Thank you for the opportunity to speak with you.

Regards,


Brian Allen, Director, Ph.D.
Alaska Sea Grant College Program

**Alaska King Crab Research and Rehabilitation Project
Summary Federal Budget Request**

	FY08	FY09	FY10	Total Request
King Crab Rehabilitation Project, Alaska Sea Grant	\$269,680	\$316,107	\$322,251	\$908,038
Alutiiq Pride Shellfish Hatchery Operations	\$333,800	\$305,100	\$311,100	\$950,000
Alutiiq Pride Shellfish Hatchery Equipment	\$600,000	\$0	\$0	\$600,000
Total Request	\$1,203,480	\$621,207	\$633,351	\$2,458,038

**Alaska King Crab Research and Rehabilitation Project
Sources of Funding to Date**

	Expenditures to Date	Obligated Funds	Total
Alutiiq Pride Shellfish Hatchery	\$40,000	\$55,000	\$95,000
Alaska Sea Grant Program/University of Alaska Fairbanks	\$50,000	\$200,000	\$250,000
National Marine Fisheries Service	\$27,000	\$23,000	\$50,000
United Fishermen's Marketing Association	\$15,000	\$5,000	\$20,000
City of Kodiak	\$10,000	\$0	\$10,000
Borough of Kodiak	\$10,000	\$0	\$10,000
Central Bering Sea Fishermen's Association	\$37,500	\$10,000	\$47,500
Aleutian Pribilof Islands Community Development Assn	\$36,500	\$10,000	\$46,500
Total	\$226,000	\$303,000	\$529,000

Alaska Shellfish Enhancement, Rehabilitation and Development Initiative

Background

The facility occupied by Alutiiq Pride Shellfish Hatchery (APSH) in Seward originally was built with Exxon Valdez Oil Spill criminal liability funds at the request of local Natives seeking to enhance damaged shellfish beds. Littleneck clam and cockle stocking projects have helped restore some of the damaged beaches, and work continues today with new species, such as razor clams and cockles.

The primary focus of the shellfish hatchery operation has been to service the emerging shellfish farming industry, but it always has been clear to the Chugach Region Resources Commission (the parent organization of the hatchery management) that shellfish enhancement programs are vital to the financial stability of the Alutiiq Pride Shellfish Hatchery. CRRC also is concerned about the depletion of important shellfish resources in many coastal areas due to population growth of many rural communities and increasing harvesting pressure from urban Alaskans.

One of the most promising economic opportunities in coastal Alaska is shellfish farming, but the industry has been primarily limited to oyster culture and most farmers are anxious to diversify.

This capital budget project is designed to assist APSH in establishing an ongoing shellfish enhancement, rehabilitation and development program designed to help:

- commercial fishers and divers restore and enhance commercial shellfish populations, including red and blue king crab, geoduck clams, and red sea cucumbers;
- local residents maintain important subsistence, recreational and personal use shellfish beds, including cockles and razor and littleneck clams, in the face of rising populations and growth of the visitor industry; and
- shellfish farmers develop new species by stepped up production of seed for geoduck, cockle, purple-hinged rock scallop, and razor clam operations.

Project Description

The capital project will provide APSH with operating funds to continue its participation in the multi-agency king crab enhancement project initiated last year. This important project was designed to study the potential of enhancing depressed king crab stocks in the nearshore waters of Kodiak Islands and the Pribilof Islands in the Bering Sea. The project is a collaboration between APSH, University of Alaska, the Sea Grant Program, National Marine Fisheries Service and Kodiak and Bering Sea fishing groups, communities and Native organizations.

If successful, the technology can be extended to enhancing other depressed king crab stocks, such as those in Kachemak Bay and areas of Southeast, extending potential benefits to a mix of commercial and personal use fisheries.

APSH also will continue working on other shellfish restoration projects, including enhancement of commercial geoduck and sea cucumber beds with the Southeast Alaska Region Dive Fisheries Association (SARDFA) and restoration of depleted razor clam beds near Cordova with the Eyak Native Association. APSH also will launch an effort to work with Native villages and other rural communities in strengthening subsistence harvest opportunities for cockles and littleneck clams.

APSH will provide free seed, and technical and permitting assistance to non-commercial, Alaska-based shellfish enhancement programs during FY 2008 with the use of project funds.

The work with some species involved in the enhancement projects, i.e. cockles and geoduck, razor and littleneck clams, also will benefit growers interested in new species. A particular emphasis will be placed upon ramping up production of geoduck seed for farmers and enhancement projects. The hatchery also will work on producing purple-hinged rock scallops for farmers in Southeast, Prince William Sound and Kachemak Bay.

The other major thrust of the project will be the crafting of a statewide shellfish enhancement plan that will provide a roadmap for an ongoing program. This will be accomplished with an outreach program including workshops in coastal communities, interaction with local citizens and Native organizations, fish and game advisory committees, local and tribal governments and by working with the Alaska Departments of Fish and Game, Natural Resources and Environmental Conservation.

APSH will explore potential state and federal funding sources for ongoing shellfish enhancement programs or specific enhancement projects.

Budget

<u>Category</u>	<u>Amount</u>
Red king crab	\$ 60,000
Blue king crab	\$ 60,000
Geoduck clams	\$ 45,000
Other Species	\$ 45,000
Technical Assistance/Research	<u>\$ 40,000</u>
	\$250,000

SitNews **Stories In The News**
Ketchikan, Alaska www.sitnews.us

Crab research program prepares for egg hatch

February 07, 2007
Wednesday AM

Seward, Alaska - It's not even tourist season. Yet sometime in the next couple of months, the population of this small coastal town will surge into the hundreds of thousands. But few people will notice. There's plenty of room for all.

The arrivals will be newborn red and blue king crab larvae, each only about the size of a finely sharpened pencil tip. In all, more than one million king crabs are expected to hatch at the University of Alaska Fairbanks Seward Marine Center in the coming weeks. The hatch will mark an important milestone in efforts aimed at one day rebuilding wild king crab stocks around Kodiak and the Pribilof Islands.

"We feel like expectant parents,"



Now only about the size of a pinhead, the red king crab larvae inside these eggs will take about eight years to become harvest-size crab, among the world's largest crustaceans. The hair-like strands that extend from the eggs help them remain attached to the underside of the adult female during their development.

Photo courtesy Celeste Leroux, Alaska King Crab Research and Rehabilitation Program, Alaska Sea

said Brian Allee, director of Alaska Sea Grant and manager of the Alaska King Crab Research and Rehabilitation Program. The program was launched in 2006 at the urging of coastal communities and fishermen from Kodiak and the Pribilof Islands.

"These newly hatched crab will help us understand what is needed to succeed in large-scale hatchery restoration of red and blue king crab stocks in parts of Alaska where their numbers are low," said Allee. "In the months ahead, we'll refine our understanding of the food, habitat, and growing needs of these crab."

This first batch of crab will not be released into the wild, Allee said. That phase of the project is several years away, and will require a state permit following studies on the impacts of the crab on the environment and research to determine crab survival, predation,

Grant.



Pribilof blue king crab and Kodiak red king crab eggs.

Photo courtesy Celeste Leroux, Alaska King Crab Research and Rehabilitation Program, Alaska Sea Grant.



Pribilof blue king crab eggs in sampling dishes on the right and left, and Kodiak red king crab eggs in the middle. Each of the eggs is approximately the size of a pencil tip.

Photo courtesy Celeste Leroux, Alaska King Crab Research and Rehabilitation Program, Alaska Sea

genetics, and other factors.

Grant.

"We don't know enough about the survival and impacts of these crab to say we are ready for a pilot release program," said Allee. "Right now, the research is focused on the mass-culturing needs."

The Alaska King Crab Research and Rehabilitation Program was born out of a grassroots effort by fishermen and coastal communities to reverse a decades-long slump in wild king crab production. Red king crab stocks around Kodiak have not recovered since crashing in 1982, when commercial fishing was halted. Stocks of Pribilof and St. Matthew Island blue king crab have been low since the mid-1980s. Commercial fishing for the two distinct stocks has been closed most recently since 1999. King and other crab stocks are considered healthy and support vibrant fisheries in other parts of Alaska.

Last year, 58 red and blue king crab were collected under state permits from Alaska waters around Kodiak Island and Saint Paul Island in the Pribilofs. The adult broodstock crab are under the supervision of the Alutiiq Pride Shellfish Hatchery in Seward. They are being temporarily housed and cared for at the nearby Seward Marine Center, operated by the University of Alaska Fairbanks School of Fisheries and Ocean Sciences, until the hatchery has finished repairs and upgrades to support the crab research project.

After the larvae emerge from their eggs, the only appendages present are the mouthparts, which the larvae use to swim, said Brad Stevens, a former Kodiak-based federal crab biologist who now is a professor at the University of Massachusetts Dartmouth. Within a few weeks, the crab reaches the shrimp-like glaucothoe (GLOCK-O-THO-EE) stage-during which the larvae develop a tail, legs and claws. Eventually, the crab will grow to be among the largest crustaceans in the sea, Stevens said.

"The most amazing thing is that these tiny creatures, only 1/16th of an inch in length, can grow to be an eight- to ten-pound giant, with claws the length of a man's arm," said Stevens.

Last March, Alaska Sea Grant convened a workshop to discuss the state of scientific knowledge surrounding the mass culture and wild stock restoration of crabs. The international gathering highlighted several states and countries pursuing programs to restore depleted populations of wild crab. The workshop led to calls by Alaska fishermen and coastal communities to establish a crab mass-culture program to rebuild king crab populations in parts of the state. Following the workshop, Alaska Sea Grant established the Alaska King Crab Research and Rehabilitation Program. The program is an Alaska Sea Grant partnership with the United Fishermen's Marketing Association, the Aleutian Pribilof Island Community Development Association, the Central Bering Sea Fishermen's Association, the National Marine Fisheries Service, Alaska Department of Fish and Game, City and Borough of Kodiak, the Alutiiq Pride Shellfish Hatchery, and the University of Alaska Fairbanks School of Fisheries and Ocean Sciences. Together the

partners have contributed about \$226,000 to the project.

Source of News:

The Alaska Sea Grant College Program
<http://www.alaskaseagrant.org>

The Alaska Sea Grant College Program is a statewide marine research, education, and extension service at the University of Alaska Fairbanks, School of Fisheries and Ocean Sciences. Alaska Sea Grant is funded by the National Oceanic and Atmospheric Administration in partnership with the State of Alaska and private industry.

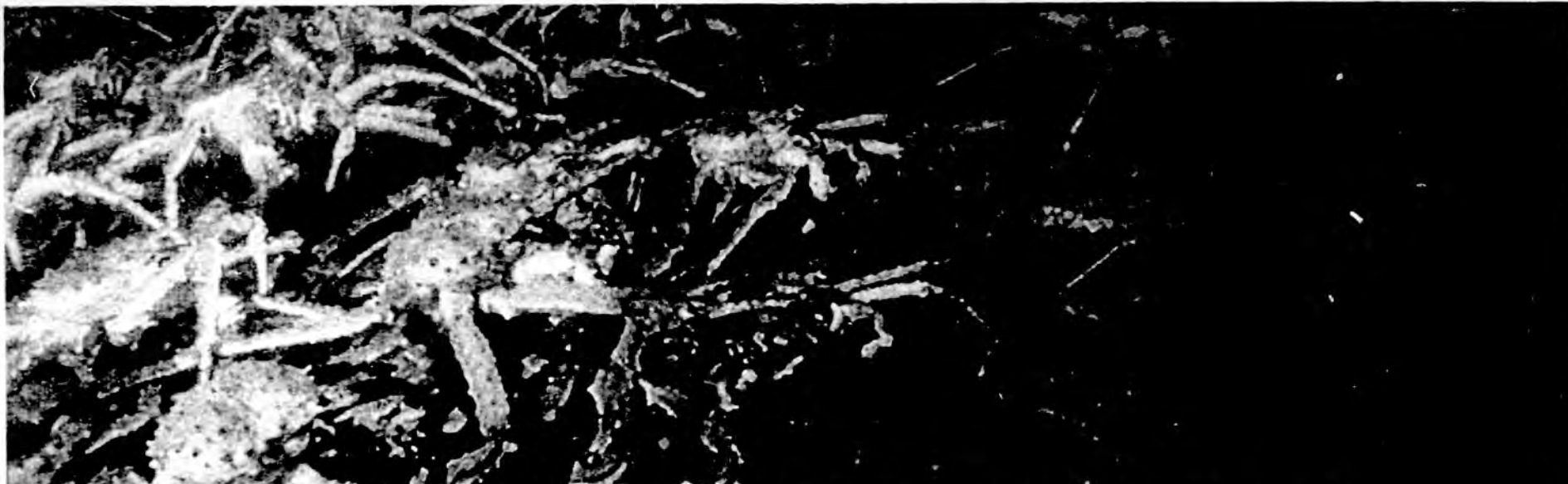
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Stories In The News
Ketchikan, Alaska



Presentation to the Alaska State House of Representatives Special Committee on Fisheries

Brian Allee, Ph.D.

Director

Alaska Sea Grant

University of Alaska Fairbanks

School of Fisheries and Ocean Sciences



Alaska Sea Grant • Program Assessment • September 2006



Alaska Sea Grant Program Mission

- Alaska Sea Grant (ASG) develops and supports research, education and extension programs and partnerships to help sustain economic development, traditional uses and conservation of Alaska's marine estuarine and coastal watershed resources

Alaska Sea Grant Strategic Plan

- One of the Strategic Plan goals is to enhance and improve the profitability and viability of Alaska's commercial fishermen and fishing communities

Grassroots Initiative

- Steering Committee
 - Alaska Sea Grant, UAF-SFOS, University of Massachusetts, NOAA Fisheries (Kodiak), Alaska Crab Coalition, Aleutian Pribilof Island Community Development Association, Central Bering Sea Fishermen's Association, Kodiak Island Borough, Pribilof Islands Collaborative and United Fishermen's Marketing Association



Scientific Partnerships

- Alaska Sea Grant, UAF-SFOS, NOAA Fisheries (Kodiak), ADFG Gene Conservation Laboratory and University of Massachusetts.
- Significant Research Initiatives
 - King crab culture technology transfer-
NOAA Fisheries and University of Massachusetts
 - Genetic mass marking-
ADFG gene conservation laboratory
 - Graduate and research technicians-
Alaska Sea Grant and UAF/SFOS



Critical Partnerships

- Alaska has only one shellfish hatchery
 - Alutiiq Pride Shellfish Hatchery-Hatchery expertise, culture equipment and facilities, algal and artemia culture



Status and Future Approach

- Current
 - Red King Crab females have begun hatching
 - Blue King Crab females are projected to hatch in 1-2 months
- Future
 - Phase 1: Larval culture
 - diet, density, growth, survival and mass culture technology
 - Phase 2: Nursery culture
 - Substrate, growth and survival
 - Phase 3: Post release simulation of wild outstocking
 - Short term experiments with cod predation versus juvenile size
 - Longer term experiments monitoring growth and survival



Budget

- Existing budget
 - Bootstrap contributions to date: \$226,000
 - Obligated funds for FY08: \$303,000
- Alaska Legislative funding for Alutiiq Pride Shellfish Hatchery
 - FY07: \$75,000
 - FY08 request: \$250,000 multiple species
- Congressional request
 - FY08: \$1, 203,480

Grassroots Initiative

- Kodiak and Pribilof Island fishermen requested Alaska Sea Grant convene an international workshop in March 2006
 - World-wide state of the art assessment of the feasibility of crab culture technology
 - Consensus for Alaska to pursue king crab ocean ranching
 - Alaska Sea Grant published workshop proceedings

Questions?


Sea Grant
Alaska

UAF UNIVERSITY OF ALASKA
FAIRBANKS
School of Fisheries and Ocean Sciences





UNITED FISHERMEN OF ALASKA

211 Fourth Street, Suite 110
Juneau, Alaska 99801-1172
(907) 586-2620
(907) 463-2545 Fax
E-Mail: ufa@ufa-fish.org
www.ufa-fish.org

February 20, 2007

Representative Paul Seaton
Chair, House Special Committee on Fisheries
Alaska State Legislature
State Capitol, Mail Stop 3100
Juneau AK 99801

Dear Representative Seaton,

Restoration of depressed fisheries resources has long been an important goal of the United Fishermen of Alaska (UFA). UFA supports Legislative capital budget funding for the Alaska Shellfish Enhancement Initiative at the Alutiiq Pride Shellfish Hatchery.

The Alaska Sea Grant College Program, the School of Fisheries and Ocean Sciences at the University of Alaska Fairbanks, the National Marine Fisheries Service and the Alutiiq Pride Shellfish Hatchery in Seward are partners in the Alaska Shellfish Enhancement Initiative, a project designed to examine a variety of questions that assess the potential for restoring depressed king crab stocks in Alaska. The partners in the Alaska Shellfish Initiative also collaborate with the Alaska Department of Fish and Game (ADF&G) to share information and ensure compliance with State of Alaska permitting requirements.

This project is important to determining whether stocking programs can play a role in the restoration of once-thriving king crab fisheries. Through rigorous scientific study, the project will provide critical knowledge for addressing vital issues such as genetics, disease, tagging, larval diets, rearing densities, cannibalism, etc. The project will also examine the operational parameters of large-scale production of juvenile crab in a hatchery environment. Overall, it will confirm and add important information to the scientific body of knowledge and understanding of the potential operational costs and benefits of king crab enhancement. UFA supports this opportunity to explore the potential of enhancing depressed king crab stocks.

While this request for capital spending is meant to support the above-mentioned king crab scientific research, we also support other important ongoing and planned enhancement and

MEMBER ORGANIZATIONS

Alaska Crab Coalition • Alaska Druggers Association • Alaska Independent Tendermen's Association • Alaska Longline Fishermen's Association
Alaska Shellfish Association • Armstrong Keta • Alsea Processors Association • Bristol Bay Reserve • Concerned Area "M" Fishermen
Cook Inlet Aquaculture Association • Cordova District Fishermen United • Crab Group of Independent Harvesters • Douglas Island Pink and Chum
Fishing Vessel Owners Association • Groundfish Forum • Kenai Peninsula Fishermen's Association • Kodiak Regional Aquaculture Association
North Pacific Fisheries Association • Northern Southeast Regional Aquaculture Association • Old Harbor Fishermen's Association
Petersburg Vessel Owners Association • Prince William Sound Aquaculture Corporation • Purse Seine Vessel Owner Association
Seafood Producers Cooperative • Sitka Herring Association • Southeast Alaska Fishermen's Alliance • Southeast Alaska Regional Dive Fisheries Association
Southeast Alaska Seiners Association • Southern Southeast Regional Aquaculture Association • United Catcher Boats • United Cook Inlet Drift Association
United Salmon Association • United Southeast Alaska Gillnetters • Valdez Fisheries Development Association • Western Gulf of Alaska Fishermen

rehabilitation initiatives including geoduck clams, sea cucumbers, oysters, cockles, little neck clams, razor clams, etc., and we do not wish for new funding for Crab enhancement to be at the expense of other ADF&G programs.

UFA Represents 35 Alaska commercial fishing organizations from fisheries throughout the state and its offshore waters. We appreciate your consideration.

Sincerely,



Mark Vinsel
Executive Director

**National Marine Fisheries Service
Fisheries Statistics and Economics Division**

You asked for the following

Trade Type: IMPORTS
 From: 2006
 Through: 2006
 Product: CRAB KING
 Countries: ALL COUNTRIES INDIVIDUALLY

FOR YOUR INFORMATION

From: Arni Thomson

Note: If a month is not listed, then we do not have data for that month. Current data through November, 2006.

Country	Product Name	Kilos	Dollars
2006			
ARGENTINA	CRAB KING FROZEN	193,006	1,497,732
Subtotal: ARGENTINA		193,006	1,497,732
BAHAMAS	CRAB KING FROZEN	2,093	46,130
Subtotal: BAHAMAS		2,093	46,130
CANADA	CRABMEAT KING FROZEN	8,412	176,660
CANADA	CRABMEAT KING IN ATC	44,991	893,445
Subtotal: CANADA		53,403	1,070,105
CHILE	CRAB KING FROZEN	27,042	502,530
CHILE	CRABMEAT KING IN ATC	3,841	55,041
Subtotal: CHILE		30,883	557,571
CHINA	CRAB KING FROZEN	1,437,840	18,374,896
CHINA	CRABMEAT KING FROZEN	600	16,896
CHINA	CRABMEAT KING IN ATC	16,218	292,421
Subtotal: CHINA		1,454,658	18,684,213
JAPAN	CRAB KING FROZEN	690,472	6,806,400
JAPAN	CRABMEAT KING FROZEN	549	16,618
JAPAN	CRABMEAT KING IN ATC	432	13,500
Subtotal: JAPAN		691,453	6,836,518
NORWAY	CRAB KING FROZEN	74,374	1,260,138
Subtotal: NORWAY		74,374	1,260,138
PERU	CRAB KING FROZEN	7,909	140,092
Subtotal: PERU		7,909	140,092
RUSSIAN FEDERATION	CRAB KING FROZEN	23,435,107	277,761,910
RUSSIAN FEDERATION	CRABMEAT KING IN ATC	3,618	55,559
Subtotal: RUSSIAN FEDERATION		23,438,725	277,817,469
SOUTH KOREA	CRAB KING FROZEN	33,484	343,710