



Epilogue

Five by Five

To appreciate the dramatic change in Alaska's commercial fishing industry during the past five decades of state management, consider the harvest statistics from the beginnings of statehood to 2007, the most recent year for which complete catch data is available.

In 1959, the first year of Alaska statehood and the last year of federal fishery management, Alaska produced 324 million pounds of seafood worth almost \$29 million. In today's dollars, that would be about \$204 million.

The salmon catch, 25 million fish, accounted for 45 percent of the annual harvest in pounds and 73 percent of the value, \$21 million. Herring comprised much of the rest of the volume (107 million pounds), and halibut comprised much of the rest of the value (30 million pounds), worth \$4 million.

Shellfish, mostly king crab and shrimp, totaled 37 million pounds and had a value of \$2.4 million. Groundfish, almost all sablefish, totaled 2.3 million pounds worth under \$200,000. This doesn't include the groundfish, crab and salmon caught by foreign fleets off Alaska waters—the volume of which is not well reported but the value to the state was nothing.

Compare that to 2007, when Alaska's fish harvest totaled 5.3 billion pounds, more than half the nation's seafood landings. When compared to other fishing nations, Alaska would rank ninth in the world behind Norway but ahead of the Philippines. The total catch was worth \$1.5 billion dollars to the fleet and over \$3 billion at the first wholesale level.

The vast majority of the catch was pollock, a species not even targeted in 1959. Over 3 billion

pounds of pollock, worth about \$300 million, were landed in the Bering Sea and Aleutian Islands. Along with that, fishermen landed 350 million pounds of cod worth \$150 million plus other flatfish and rockfish that boost the total groundfish catch in the Bering Sea and Gulf of Alaska to 4.1 billion pounds. Almost 400 million pounds of that groundfish was landed by the locally owned CDQ corporations.

Alaska produced 213 million salmon in 2007, or 950 million pounds worth \$417 million. While pink salmon made up more than half that catch, (504 million pounds); more than half the value, \$248 million, came from the 48 million sockeye that were landed. Private Non-Profit hatcheries released 1.5 billion salmon fry and saw 80 million adult returns. Of those, 80 percent were pink salmon and 15 percent were chums.

Over 51 million pounds of halibut were landed in Alaska waters in 2007, mostly in the Gulf of Alaska and off the Southeast Panhandle. At \$5 a pound, the catch was worth over \$250 million.

Well down from its peak production, 65 million pounds of shellfish were landed in 2007 worth \$133 million. That included 19 million pounds of king crab worth \$59 million and 36 million



Geoduck.
Photo ADF&G.



Measuring a sea urchin.
Photo ADF&G.

Left: Biologists tagging McNeil River chum salmon.
Photo Ted Otis, ADF&G.

pounds of snow crab and other tanners, worth \$50 million. Shrimp, Dungeness crab, scallops, clams, geoducks, sea cucumbers and sea urchins accounted for the rest.

After a spectacular marketing rise and fall, one fishery was little changed over the half century. In 2007, Alaska produced 63 million pounds of herring but with the downturn in the roe market, the catch was worth only \$9.3 million. In 1959, Alaska produced 107 million pounds of herring worth \$9.2 million in 2007 dollars.

In five decades of Alaska statehood, seafood production has increased by five billion pounds and done so in a responsible, sustainable manner.



Seiner.
Photo courtesy of ASMI.

What It Took

Ask former biologists from the Alaska Department of Fish and Game and others involved in the industry's development what it took to achieve the success seen in Alaska's commercial fisheries and they will attribute multiple reasons. At perhaps its most basic level, it begins with Alaska itself.



Trolling for coho salmon.
Photo courtesy of ASMI.

"It's difficult to say what the key to our success was but if I had to say one thing, it's probably the habitat," said Jeff Skrade. "Preserve the habitat and there's no reason that this can't go on. The term renewable resource is what's paramount in my mind. The world's going to need this protein. If you take care of it and protect the habitat, there's absolutely no reason this couldn't go on from now until forever."

It also took firm leadership to task the Department with rebuilding the fisheries and Andy Anderson's clear-headed direction of resting ultimate control of the fisheries with his local managers. "Emergency Order management is what saved Alaska fisheries: letting the local managers do their job," said Ken Florey. "If you get a manager who lives locally in the community, understands the resource, knows the

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Tendering salmon.
Photo courtesy of ASMI.

people, has a feeling for what's going on and the fisheries over time, you get a better managed fishery. That's the key and that's why Alaska has been so successful."

It took the application of science to understand the runs and shape effective management programs. "Good stock assessment and in season management has allowed the Department to identify the surpluses when they occur and direct the harvest of those stocks," said Steve Pennoyer. "This regulatory flexibility simply did not exist during the federal era and combined with the effective management of these resources is what sustains this productivity."

It took setting that science apart from the economic interests of those involved. "The brilliant thing that Clarence Anderson left us with was separating the people who protect the resource from the people who allocate the resource," said Clem Tillion. "The Board of Fish has no say over how many pounds are available so the Department was in the business of protection of the resource; the Board of Fish was in the allocation of that resource and the two were not mixed. When we formed the North Pacific Council under Elmer Rasmuson and Harold Lokken, we took the state system that worked so well. We might disagree with the SSC, the Scientific and Statistical Committee, but when they vote, that's final. We have never overridden them."

Public involvement in the regulatory process also contributes to Fish and Game's success. "The involvement of the public was very im-

portant, basically ensuring we have a biological escapement goal: it takes fish to make fish," said Jeff Skrade. "If the people in the fishery—both industry and the fishermen—hadn't sacrificed to achieve those escapements and have been so supportive of the Department to do that, it never could have happened."

It took a generational change on the part of industry to realize that fisheries wouldn't be managed "Greyhound style" anymore, and to embrace the state's new scientific style. "I think what happened this year demonstrates the success of what we're doing," said Sen. Ted Stevens. "The pollock quota was reduced and I didn't get one letter of protest from anybody. They all knew that was a scientific decision and they all supported it."

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It also took recognition of external threats to Alaska's resources such as high seas interceptions and investing the time to address these



Halibut delivery to processing plant.
Photo courtesy of ASMI.

at an international level. “When I started out in high seas enforcement, we really were working with the 3-mile limit and it wasn’t much of a law,” said Jim Branson. “It was a customs regulation, actually, that forbade foreign fishing within 3 miles of the beach and over the years that got moved out to six, 12 and finally to 200 miles.”

“The Department was the catalyst for all of this,” said David Benton. “We took our policy objectives: to protect our resources and our communities and the larger marine ecosystem, to every corner of the planet; to the highest levels of the United State government and to the highest levels of foreign governments and even the United Nations. The Department of Fish and Game really burst onto the world stage. It truly was a remarkable period of time.”

They also admit it took forces outside of our control. “I still think Mother Nature is the prime driver in all these things but had there not been an Alaska Department of Fish and Game what Mother Nature made we could have

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—David Benton

eliminated just like the passenger pigeons,” Chuck Meacham Jr. said. “There’s no question the Department of Fish and Game played a major, major role, in what we have today and what I’d like to think we’ll have for centuries.”

It took the commitment and hard work of many. “I’ll tell you, it was day and night, 20 hours a day, head down and ass up, and we never stopped,” said Chuck Meacham Senior. “In those days, I’d take off about the 28th of May when king salmon fishing began down around Copper River and then from there go to the king salmon fishery in the Nushagak and



“Setnetting” or set gillnet fishing.
Photo courtesy of ASMI.



Bering Sea crab fishery.
Photo courtesy of ASMI.

then up to the Yukon when the ice'd go out and from there back to Bristol Bay, over the hump to Cook Inlet, then charter a plane through the slot to Prince William Sound. I'd get home about the end of August."

Ultimately it took all of the above. "There's no doubt that the dramatic recovery of the salmon in Alaska has been in large part due to improved natural survival conditions and reduction of high seas interceptions," said Steve Penoyer, "but the effective management of these resources is what both sustains this productivity and allows harvest of these tremendous surpluses of fish beyond escapement needs."

"Obviously the main thing is that we've maintained the habitat. You've got to have that or you won't have any fisheries period," said Ken Florey. "You've got to have the habitat, you've got to have the local, on-the-spot management and you've got to have input from local, knowledgeable fishermen who feel they're part of what's going on. If you can keep that all

together and keep the politics out as much as possible, you'll have a well managed fishery."

For former fish board chairman John White of Bethel, it also took recognition of the traditional knowledge of people who has survived off the resource for thousands of years.

"Traditional knowledge is not only an important part of the management structure, it's an important part of the research structure. The art of how to bring traditional knowledge into western science is something that has to occur in the future. It's not a question of 'if,' it's a question of 'it must' and we are striving to do that in the best ways possible. While the recognition of traditional knowledge has improved, the ability to incorporate it and bring it together with western science is still in its infancy and will need careful stewardship in the future for it to succeed."

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Cannery workers in Dillingham.
Photo courtesy of Bob King.

Challenge for Tomorrow

Alaska's success in fishery management over the past five decades is a matter of record but its future is not necessarily assured. Alaska fisheries face serious challenges in the years ahead.

Global climate change and ocean acidification are affecting the waters on which Alaska's and all fish stocks depend. Some species already appear to be on the move. Alaska pollock are reportedly heading north in search of cooler water while southern species like jumbo squid and sardines are becoming more abundant in Alaska water. Tuna might not be far behind.



Collecting salmon eggs from the Branch River system in Bristol Bay.
Photo John H. Clark, ADF&G.

The long term implications of this climate shift are not known but the warming trend is generally considered favorable for invasive species, some of which prey on Alaska's commercially important stocks. Others, such as escapees from salmon net pens, threaten to bring sea lice and disease from afar.

With a growing human population, there is increased pressure on Alaska's renewable resources and habitat. Competition between commercial and sport users is on the rise for both halibut and salmon. Planned industrial development, both onshore and off, raises concerns over protection of fish habitat and water quality.

On the high seas, a resurgence of Illegal, Unregulated and Unreported fishing effort targets multiple species sold to hungry markets overseas where they don't ask where the fish comes from. Plastic marine debris, much of it carried from afar by ocean currents, is choking Alaska's shoreline.

The unexpectedly poor return of pink salmon in 2008 raises questions that beg to be answered. King salmon abundance declined just as the Pacific Salmon Treaty came up for renegotiation and right after bycatch of the coveted kings by the Bering Sea trawl fleet set an unwelcomed new record.

King and Tanner crab remain mired at a low level of productivity and some fisheries have been closed to fishing for decades. Meanwhile, escalating fuel prices threaten the viability of many Alaska fisheries and entire coastal communities dependent on a fish-based economy.

The challenges fisheries face today require the same commitment, research and investment that allowed Alaska fisheries to rebuild and prosper since the early days of statehood, but many of the biologists, managers and policy makers who are justifiably proud of the Department's past accomplishments openly question whether that commitment is still there.

One former biologist observed that the Department of Fish and Game was better supported before the oil pipeline brought its riches to the state. At statehood, fisheries were a major driver of Alaska's economy but now are



ADF&G researchers arrive in Bristol Bay by floatplane.
Photo John H. Clark, ADF&G.

a distant second to oil and gas. As oil revenues fluctuated in the 1980s and 1990s, many basic management research projects were pared back or cancelled.

Once a world leader in fish culture, the Department's leadership in the science of rehabilitation and enhancement stalled after elimination of the FRED Division. Competitive pay and benefits that previously attracted many to state service also stagnated. So many seasoned biologists were lured away by federal or private sector jobs that one former biologist likened the Department to a "recruiting agency."

The challenges facing Alaska fisheries in the next fifty years will require a renewed commitment by the state leadership to the basic research on the status of fish stocks and with specific attention to the broader global climate changes that are already evident today.

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It will require renewed investment in people, continuing education and training. It will require coordinated intergovernmental action to address pirate fisheries on the high seas through stricter laws and enforcement.

Fortunately, Alaska fisheries have been

built on a firm foundation: a constitutional mandate for sustained yield, the vision of Andy Anderson, a commitment to scientific research, and to serve the Alaska people. With renewed commitment and investment, Alaska will continue to be a world leader in fisheries.



North Pacific Seafood's processing plant at Pederson Point near Naknek.
Photo courtesy of Bob King.