

ATLANTIC SALMON

Black x-shaped spots above the lateral line

Slender or pinched base of tail
No spots on tail

Upper jaw does not extend past the rear of the eye

Black spots on gills cover distinguish from all Pacific species

8-12 anal fin rays

An invasive species in the Pacific Ocean



Atlantic salmon have escaped from fish farming pens in British Columbia and Washington. They pose a threat to wild pacific salmon populations through competition for food and habitat.

WHAT CAN YOU DO?

If you catch an Atlantic salmon:

1. Note the location
2. Keep the entire carcass, freeze if necessary
3. Call the Atlantic Salmon Watch Program Toll Free

1-877-INVASIV • 1-877-468-2748



Rethinking Fisheries

The 1990s brought new challenges both at home and abroad that forced Alaska to radically rethink its fisheries and how they were managed. The pollock fishery was finally Americanized but there were calls to share some the benefits of the fishery closer to home; rising effort in the halibut fishery prompted action to stop the dangerous and wasteful derby, and thawing relations with Russia prompted a complete restructuring of agreements affecting the high seas.

For Alaska salmon, the boom that began the previous decade pushed to new heights. New harvest records were set during five of the first six years of the 1990s that saw the total catch increase from 155 million to almost 218 million salmon. Increasing hatchery returns were part of the success but wild runs were also strong. Bristol Bay set new catch records of 40 million salmon in 1993 and 45 million in 1995.

But while production soared, salmon prices tumbled from their peaks in the late 1980s as strong world demand spawned a dramatic growth in salmon farming. Unlike hatcheries that incubate eggs and release fry back into the wild, farmed salmon are held in pens their entire lives. Fed fish meal often supplemented with additives, farmed salmon were criticized for their bland taste, artificial color, and for spreading disease and sea lice.

From Sitka to Dillingham, bumper stickers read “Real Salmon Don’t Do Drugs,” and “Friends Don’t Let Friends Eat Farmed Salmon.” Because Atlantic salmon are foreign to the Pacific, escapees from British Columbia net pens found in Southeast Alaska were treated as an invasive species.

elsewhere around the globe. Alaska once dominated the world salmon market, but by the early 1990s it faced stiff competition from farmed salmon from abroad and prices collapsed. Bristol Bay sockeye peaked at \$2.40 a pound in 1988, but within five years plunged to just 64 cents a pound. Prices for other species plummeted as well.

Worse yet, salmon returns took an unexpected dip late in the decade. Two years after Bristol Bay set an all-time record catch of 45 million sockeye, the harvest dropped to just 12 million in 1997 and just 10 million the following year. Returns to other western Alaska rivers were also weak. Usually prices rose in the wake of low returns, but with a glut of farmed fish on the market, fish prices remained low. In Southeast and Prince William Sound, hatchery production helped keep overall production up but Bristol Bay was again declared a disaster.

While salmon struggled, the shellfish industry was still dealing with the aftermath of the king crab collapse of 1983. “It was

terrible,” remembered crab manager Ken Griffin. “The processors were sending people home, the boats were starting to struggle, and the next couple of years there were a lot of foreclosures. It’s like any boom and bust, if you’re not planning ahead, you’re broke. Now the guys that planned ahead, they struggled a bit but still

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FRIENDS ***DON'T*** LET FRIENDS
EAT FARMED FISH
SUPPORT ALASKA'S WILD FISHERIES

Bumper sticker courtesy of Nancy Long.

Responding to public opposition, the Legislature in 1990 banned salmon farming in Alaska, but that did nothing to slow its explosive growth in Norway, Chile, Canada, and

Left: *Seiner*.
Photo courtesy of ASMI.

made money and stayed in the fisheries. They changed to other species or went on to other things and some of them are still out there today.”

Many fishermen turned their attention to another species of crab known as *opilio*. Marketed as snow crab, they were smaller than the kings and fetched a smaller price but were very abundant in the Bering Sea. Once passed over for the high-end crab, snow crab found a niche at family-style all-you-can-eat seafood chains and the catch soared. In 1991 and 92, fishermen landed over 300 million pounds of *opilio* and could have harvested even more except for an upper catch limit in the Council’s fishery management plan. In all, 1.6 billion pounds of *opilio* crab were caught during the 1990s.

Ted Stevens’ vision in passing the 200-mile limit was realized in 1990 when the last groundfish joint venture was phased out and the Bering Sea was fully Americanized. With both record amounts of *opilio* crab and pollock being landed, Dutch Harbor became the number one port in the nation in terms of volume of seafood landed, a distinction it still holds today. But trouble lay ahead among the various sectors vying for Alaska pollock.

The North Pacific Council put an end to the roe stripping problem by banning the practice and designating a special season for roe-bearing pollock, but the state was still concerned about the fleet of highly efficient factory trawlers that moved into the fishery. They stepped in to ensure that some of the fish and the processing jobs came ashore. What followed was a contentious battle before the North Pacific Council in 1992 that resulted in specific pollock allocations for the inshore and offshore sectors. Clem Tillion considered it a major victory. “Inshore/offshore was a big one. We actually required fish to be processed onshore; otherwise Alaska would have gotten nothing. We’d have been a distant water fishery.”

As an added bonus for the state, the debate also created something called the Community

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Snow crab.
Photo courtesy of ASMI.

Development Quota, or CDQ—an allocation of pollock to Bering Sea coastal communities to use for economic development purposes. The 7.5 percent allocation came from a reserve no longer considered necessary and was later expanded to include crab, cod, and other groundfish.

But inshore/offshore wasn’t over. The debate renewed itself every three years until 1998, when, tired by the continuing feud, the offshore sector proposed to transfer more pollock onshore in return for a new idea to rationalize their fishery through harvesting co-ops. Successfully used in the whiting fishery off Washington and Oregon, the co-op idea could allow the offshore processors to reduce their overcapitalized fleet, slow down the pace of the fishery, and boost production yield.

When the North Pacific Council didn’t completely buy off on the plan, both sides flew to Washington DC and asked Senators Stevens and Slade Gorton of Washington to mediate the dispute. What eventually emerged was a

complicated legislative fix called the American Fisheries Act.

“The AFA was a legislative solution that dealt with the pollock allocations, harvesting co-ops, and U.S. ownership issues,” said Dave Benton, who helped negotiate the agreement for the state. “It shifted pollock quota from the offshore to the onshore sector—with shoreside compensating the offshore sector for their loss; it set criteria for which vessels would be in or out and bought out a bunch of factory trawlers.”

Alaska also insisted the legislation include increased observer coverage and controls on so-called “sideboard” fisheries so the displaced pollock boats didn’t simply move to other fisheries. When it was signed into law in 1998, the bill also increased the CDQ allocation to 10 percent.

With an end to the bitter in-fighting between sectors and the needs of local communities included in the agreement, the Bering Sea groundfish fishery was finally fully Americanized. The impact to region was significant.

“In the 1990s, Dutch Harbor went from a frontier town to a real community of 4,000 people with schools, a clinic, paved roads; all of that,” Benton said. “The CDQ program helped villages get jobs and money, and also economic opportunities and enterprises for those who wanted to stay in the village. The American Fisheries Act facilitated all of those and put to bed the very, very contentious allocation fight over pollock which is one of the largest fisheries in the country, if not the world.”



Bristol Bay Economic Development Corporation vessel F/V Bristol Leader is a 167-foot freezer longliner that harvests cod, sablefish and halibut.
Photo Herman Savikko, ADF&G.

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—Dave Benton



Pollock.
Photo courtesy of ASMI and Dr. Donald Kramer.

Shaping Alaska's History

Halibut Derby

It wasn't by accident that Pacific halibut became one of the first fisheries to come under scientific management. The big flatfish, famed for its firm white flesh, was overharvested early in the 20th century. Worried about halibut's future, one of the smartest management biologists of the day was asked to investigate.

William F. Thompson's pioneering research produced recommendations for the management of the fishery and led to a 1923 treaty be-

tween the U.S. and Canada that created what's now known as the International Pacific Halibut Commission. Halibut has had its ups and downs since then, but the International Pacific Halibut Commission has kept a tight rein on the harvest to sustain the fishery and maintained a program of scientific research to better understand its biology.

Since it was managed under a preexisting treaty, the halibut fishery was not affected by statehood or

the 200-mile limit law, although the Magnuson-Stevens Act assigned allocation decisions regarding the fishery to the North Pacific Council. Those latter concerns quickly came to the forefront.

As Alaska's population grew and halibut stocks prospered, more and more fishermen were attracted to the fishery. As effort rose, fishing seasons became shorter. Seasons that once lasted months were reduced to just weeks.

Fishery managers considered limited entry for halibut in the early 1980s but the idea ran afoul of President Ronald Reagan's opposition to government regulation. Talk soon turned to Individual Fishery Quotas or IFQs. While limited entry set a cap on the number of participants, IFQs went a step further and assigned a specific catch quota to each.

While options for the halibut fishery were discussed, the situation only got worse. As people sensed some form of pending limitation, more and more Alaskans entered the fishery in hopes of being grandfathered in later. As the number of participants grew, openings became even shorter. By the early 1990s, there were some 5,000 participants in the Alaska halibut fishery and the season was reduced to a few 24-hour periods a year.

Called the "derby" fishery to describe the race for fish, it had several consequences, almost all of them bad. At its worst, the derby was dangerous. "I considered the system we had was murder," said Clem Tillion, who served as Alaska's "Fish Czar" in the early 1990s. "You send all these little boats out to fish regardless what kind of weather it would be. And if they didn't go out that day they lost their whole season."



A 300 lb. halibut landed in Juneau on December 20, 1910.
Photo courtesy of Alaska State Library Photograph Collection.

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Fast paced, it was also difficult for fishery managers to control the catch under the derby, and with millions of pounds of halibut delivered all at once, product quality suffered. Rather than being sold fresh, most Alaska halibut was frozen, adding the expense of cold storage.

"A good fishery should deliver a quality product to the consuming public at a competitive price," Tillion said. "Our halibut was a third-rate product dumped on the dock in one or two days. The public was paying more for the cold storage and interest on the debt than they were for the fish. The only way I could see to stop this was an IFQ system. It slows things down enough that it makes some sense and produces a quality product to the consuming public."

Adopted by the North Pacific Council in 1995, over 4,800 fishermen initially received quota, but many fishermen who only received a small share opted to sell their quota. By 2005, the number of share holders had dropped by a third, although quota caps prevented any one individual from acquiring too large a stake in the fishery. There was an even steeper reduction among vessels as quota holders combined efforts. The halibut fleet shrank from 3,450 vessels in 1994 to fewer than 1,300 boats in 2005, a reduction of more than 60 percent.

IFQs remain controversial to those who lost jobs. Communities like Pelican, near Southeast Alaska's Fairweather grounds, suffered from loss of the seasonal influx of derby fishermen. Because IFQs were transferable, questions were raised about out-of-state quota ownership and the difficulty and expense for young people to enter the fishery.

But Clem Tillion says IFQs succeeded in meeting its intended goals. "We don't drown a bunch of

"Prices are up because the quality is up."

—Clem Tillion



Pulling a halibut on board.
Photo courtesy of ASMI.

fishermen every year," Tillion said. "Prices are up because the quality is up. We don't have a huge amount of gear left on the grounds and fishing even when the season is over. I believe the free market does a bet-

ter job of regulating things. There is need of government regulation because there are bandits that would overharvest but, all in all, it's an unbelievable system."

Shaping Alaska's History

Perestroika

Climate change in the 1990s reshaped fisheries across the North Pacific but this time, the shift was in the geopolitical climate. Economic and political reforms swept through Russia and the old Warsaw Pact in the late 1980s. The Berlin Wall toppled and the Iron Curtain was lifted across Eastern Europe. In Alaska, it was called the thawing of the Ice Curtain. New contacts between the former cold war enemies began on a personal level and soon got down to business.

Initially the Russians were interested more in economic partnerships and joint ventures, but it soon became apparent they didn't like the International North Pacific Fisheries Commission any more than Alaskans did. Perhaps even more so since, as cold war opponents, they weren't included in the earlier agreement. As Steve Pennoyer and David Benton from the Alaska Department of Fish and Game Commissioner's office started talking with the Russians, they saw an opportunity to fundamentally change fisheries in the North Pacific. The breakthrough came during a meeting in Leningrad, now St. Petersburg.

"While everybody else was touring the town Pennoyer, a few NOAA people, and myself closeted up with three or four Russians in this dingy little room for three days and hammered out a proposal for a new salmon treaty," said David Benton, then the Department's director of International and External Fisheries. "Then we took it to Japan and Canada, which caused great consternation because we were talking to the Russians without talking to our allies first, but we eventually got them on board and after some very intense negotiations, we got the NPAFC done."

Formed in 1992, the North Pacific Anadromous Fish Commission ended the high seas harvest of salmon from

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Alaska and other countries throughout the region. It brought the new Russian Federation and later Korea in as members, and shifted the focus from allocation to conservation and research. It also notably allowed all members to enforce its provisions within the North Pacific, a significant change known as non-flag state enforcement. Previously fishing vessels on the high seas only had to answer to enforcement ves-

sels that flew their own flag. Non-flag state enforcement created a new level of transparency in fisheries enforcement on the high seas.

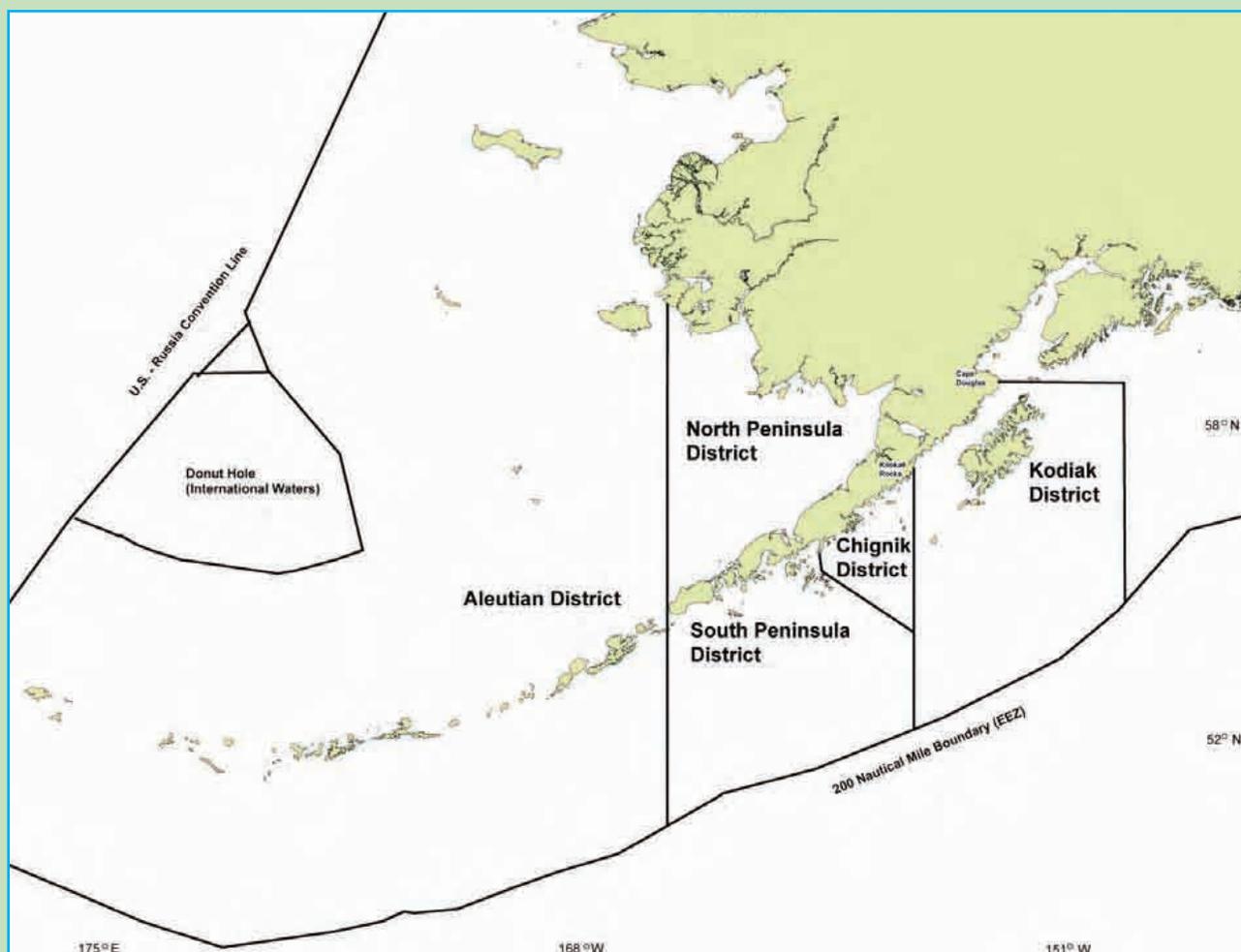
At the same time, separate meetings were underway about the high seas squid problem and the breakthrough on non-flag state enforcement helped reach agreement on a management and enforcement regime for that driftnet fleet. It soon grew into an international effort to ban all high-seas driftnetting. Senator Ted Stevens convinced the Secretary of State to make it a priority, and the state helped muster what was then the largest public lobbying effort ever before the United Nations.

"We got hundreds of people from 30 plus countries to come to the United Nations and talk to their respective delegates." Benton said. "We had Christopher Reeve—



i i f North Pacific Anadromous Fish Commission in 1993. L to R: David Benton, Deputy Commissioner ADF&G; Rick Lauber, Chairman North Pacific Fisheries management Council; Steve Pennoyer, then with the National Marine Fisheries Service and William Dilday, U.S. Department of State. Photo courtesy of Dave Benton.

Shaping Alaska's History



The Bering Sea Donut Hole.
Map ADF&G.

Superman—host a reception for UN delegates from 80 to 100 countries and it was all about stopping drift-nets. Our office funded a big chunk of that and in the end, it was a very cheap investment. It was part of what finally got rid of high seas drift-nets.”

The United Nations ban on high seas driftnets took effect in 1993. The new alliances and enforcement regimes later led to a 1994 agreement that ended pollock fishing in the Bering Sea Donut Hole. Combined, the new international agreements on salmon, driftnets, and

pollock profoundly changed how we managed high seas fisheries that impacted Alaska stocks, and it all came from a shift in the political climate. The Russian word used

to describe the sweeping changes across their country was perestroika or “restructuring.” In the 1990s, it came to the fisheries of the North Pacific as well.

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Shaping Alaska's History

Pacific Salmon Treaty

Biologists will tell you that all salmon in Alaska are Pacific salmon; part of the genus *Oncorhynchus*, Latin for "hooked nose," a reference to their metamorphosis before spawning. But the Pacific Salmon Treaty deals with a specific issue: stocks that freely roam across the borders of the Pacific Coast states, British Columbia and Southeast Alaska.

Salmon migrate thousands of miles during their lifetime and when they cross state or national boundaries there's usually a fight over whose fish they are. Transboundary fish disputes have been around ever since man used a river as a convenient border. Tensions between Alaska and Canada were apparent as early as 1914 and escalated in the following decades as coastwide salmon runs declined primarily because construction and operation of

hydroelectric dams and other development damaged salmon habitat. Fishing opportunities down south were also constrained by court rulings.

"We really were in a bad situation because there was the Boldt decision for the tribes, conservation concerns for the lower 48 and huge allocation issues between the Canadians and the lower 48," remembered Gary Slaven, a Petersburg fisherman who was part of the team of Alaskans that tried to negotiate the original coastwide salmon treaty.

"We were kind of collateral damage. It was hard to make people realize that we lived and died with our fisheries up here. We had to have them. Buy-out wasn't an option. If you sell out and get a check, the money's soon gone and the families are gone so it was hard. We had to

go down and just be real hard headed about keeping the troll fishery, including the winter troll fishery, and say we've been catching these fish for a long time and we're not willing to give them away to somebody else."

Negotiations over the treaty began in the early 1970s and went on for years. The disputes over fisheries in the north focused on the Taku and Stikine Rivers which rise in Canada and flow through southeast Alaska and Alaska's mixed stock fishery off Noyes Island, but perhaps the greatest controversy centered on the prized Chinook salmon which may migrate more than 1500 miles from their natal stream through the waters and fisheries of both countries. The issues were complicated and contentious. One year Slaven spent 117 days in treaty negotiations in Seattle and Vancouver but Alaska held fast to reaching an agreement intended to protect the stocks as well as the fishery.

"We had information that showed that if we stuck to 263,000 kings that we could rebuild the coastwide stocks, the ones we impacted, in three cycles or 15 years," Slaven said "Of course, history later bore us out. We got the abundance back up even with all the environmental problems and the problems they have in Canada."

It took 15 years to negotiate the Pacific Salmon Treaty between the U.S. and Canada and when it was finally signed in 1985 the press reported the terms were generally considered favorable. But nobody specifically seemed to like it. Alaska fishermen didn't like the fact that their catch was cut back and Canadian fishermen thought the Americans got a better deal than they did.

Within a few years, the rancor over catch allocations had returned and by the early 1990s the treaty



This map illustrates various Chinook salmon migration patterns in the Gulf of Alaska and the current Pacific salmon management authorities that govern them.

Shaping Alaska's History



Canadian fishing boats block the Alaskan ferry Malaspina at the dock in Prince Rupert, B.C., on Sunday July 20, 1997. The three-day blockade was intended to put pressure on stalled salmon treaty talks but ultimately cooler heads prevailed. AP Photo/Ian Smith.

commission deadlocked and was unable to agree on annual catch quotas. The listing of salmon returns to Idaho's Snake River and California's Sacramento River under the Endangered Species Act raised the stakes and brought salmon management issues into the courts. As tempers over allocation issues rose, Canadian fishermen twice blockaded Alaska state ferries including one in 1997 that was held in Prince Rupert for three days. Tourists had become collateral damage and the two sides were no closer to resolving the contentious issues involved.

Ultimately cooler heads prevailed. Alaska led the way, proposing to replace the past fixed quotas with an abundance-based approach, similar to the winning management strategy employed since statehood.

"We got away from hard and fast ceilings and quotas and got back to a system where conservation came first and allocation became a secondary function of the management regime," said David Benton, who helped the state negotiate revised treaty provisions in 1999. "In doing so we set up the conservation burden so that the allocations were fair."

The approach was sold on the concept of "share the pain, share the gain." Alaskans were willing to cut their catch for conservation reasons but wanted to share in the upside when salmon were abundant. Signed in 1999, the new treaty indeed caused pain for salmon trollers and sport fishermen with catches that were initially held below 200,000 Chinook by low abundance, but the new abundance-based provisions allowed for Alaskan harvests of over 400,000 kings when stocks later rebounded.

It was a breakthrough. For the first time biologically-based escapement objectives were set. These, among other expectations, were put on all parties: Alaska, Canada, and the southern U.S. States. Substantial funding was put into the mix to make those tasks doable.

The 10-year fishery provisions agreed to in 1999 were slated to terminate at the end of 2008, necessitating renegotiation of the treaty terms. While the 1999 agreement established effective conservation and harvest sharing arrangements for a number of fisheries, provisions affecting the Chinook fisheries

require scrutiny for their affect on numerous Chinook salmon stocks in the Pacific Northwest that are now listed under the Endangered Species Act.

"The migration of Chinook salmon across jurisdictions and the varying status of the stocks originating from the Pacific Northwest and Canada make reaching comprehensive domestic and international agreement on conservation and fishery issues very difficult," said Deputy Commissioner David Bedford. "The controversy that often characterized the treaty negotiations was a measure of the value of the salmon to both nations."

The approach was sold on the concept of "share the pain, share the gain."

"In 1999 the United States and Canada reached an agreement that has stood the test of time and many fishery provisions can be renewed with little or no change." Bedford observed. "However the negotiation of Chinook fisheries raises the added complexity of ensuring that an international agreement is sufficient to meet the conservation needs of both countries. At all times in the negotiations, the best interests of the salmon resource and of the fishermen and fishery dependent communities in Southeast are foremost in our minds."

Shaping Alaska's History

Community Development Quotas

As Alaska's lucrative pollock fishery was being Americanized, villagers in western Alaska wondered what was in it for them. They lived along the Bering Sea, depended on its bounty to subsist and shared a stake in the stewardship of its resources.

The joint venture era provided an opportunity for them to get involved. In the early 1980s, after domestic processors refused to buy gillnet-caught herring at Togiak and 5,000 tons of fish was wasted, local gillnetters turned to a Japanese longline company that promised to buy all their herring. In return, the Japanese wanted a share of cod. Called "fish and chips" deals, they were politically popular, trading off the last allocations of foreign-directed fishing for markets for resident small boat fishermen—like herring in Togiak or salmon in Norton Sound.

Fish and chips went stale as the last directed foreign allocations were phased out by the domestic groundfish fleet, but a Bethel man had an idea to keep local fishermen involved. Harold Sparck came to the Yukon-Kuskokwim region in 1968 as a teacher but soon quit in a dispute over policies he felt went against the local Yup'ik students. He put down roots, married into the community, and embarked upon a quarter-century of activism.

Sparck lobbied for a rural subsistence preference and plotted a legal strategy that eventually pushed the Japanese International North Pacific Fisheries Commission fishery out of Alaska waters. He forged ties with the Soviets as the Ice Curtain thawed and helped craft a new salmon treaty that was focused more on conservation than allocation. Along the way, Sparck earned the ire of some Alaskans, such as residents of the Eastern Aleutians

whom he battled over catches of chum salmon, but no one doubted his single-minded devotion to the Yukon-Kuskokwim region.

In the early 1990s, Sparck saw a way to include Bering Sea coastal villages in the Americanization effort by giving them a small allocation which they would then partner with industry in return for jobs, training and economic development. The allocation came from a reserve that was previously set aside but no longer considered necessary. Partnering with industry was a brilliant idea, merging the interests of small villages that suffered from chronic unemployment with major fishing corporations.

Called Community Development Quotas or CDQs, the idea was adopted by the North Pacific Council in 1992 but Harold Sparck did not live

to see its eventual success. He died of cancer in 1995 at age 51. In the years that followed, CDQ corporations grew beyond anyone's expectations, producing annual revenues of up to \$130 million and over \$1 billion since their inception.

Later expanded to include crab, cod and other species, CDQs created some 2,000 jobs annually and funded programs that train thousands more for jobs in the seafood industry. The corporations have invested their revenues in both factory trawlers and shore based plants worth over \$400 million and at the local level, have also funded docks, harbors, cold storage and ice plants, and other seafood processing facilities that had a big impact in small villages.

The impact of CDQs can be seen by comparing communities that were



Pacific Glacier, a Norton Sound Economic Development Corporation (NSEDC) vessel. NSEDC is half-owner of this former Glacier Fish Company vessel which allows it to harvest its allocation of CDQ pollock and Pacific cod.

Photo Herman Savikko, ADF&G.

Shaping Alaska's History



Arctic Sea, a Coastal Village Fishing Cooperative (CVFC) vessel.
Photo Herman Savikko, ADF&G.

included in the program with those that were not. A former ADF&G fishery manager who now works for the Norton Sound CDQ group, Charlie Lean previously managed small but active salmon fisheries in Unalakleet and Kotzebue through the late 1990s when eroding markets and rising costs took their toll. Unalakleet was part of a regional CDQ corporation but Kotzebue, which didn't border on the Bering Sea, was not.

"Today, the Kotzebue commercial fishery employs less than 10 percent of its former participants and catches about 20 percent of the previous average harvest," Lean said. "Unalakleet fisheries, however, are not far

off the catch and participation levels of the previous decade. In fact, the commercial crab fishery is far more active than it used to be."

That's because the Norton Sound Economic Development Corporation invested in research, financing and infrastructure. "Without the CDQ sponsorship of eastern crab surveys, the boat and gear loan programs, and ice production those fishermen would not have near the opportunity they currently enjoy," Lean said.

"The CDQ has also kept open the buying stations in the outlying communities and traditional villages like Elim and Shaktoolik are also able to sell their fish and have much

the same opportunity they enjoyed in past decades. The communities of eastern Norton Sound are economically far more stable than those of Kotzebue Sound. They are able to support young families and the breadwinners live and work at home."

From Norton Sound to the Yukon, Kuskokwim, Bristol Bay and the Aleutian and Pribilof Islands, Harold Sparck's idea has grown into the largest economic engine in the region. Some believe CDQ corporations will eventually grow to control the fisheries throughout the Bering Sea.