

the **LODE STAR**

Charting the course of fisheries development today.

Alaska Fisheries

Development Foundation, Inc.

Volume XII No. 1, Summer 1994

Salmon Nuggets make the grade

One kid said, "Couldn't you take the pink out? It's gross." But most of the thousands of West Coast schoolkids who tasted Alaska pink salmon nuggets in their school cafeterias this spring gave them the thumbs-up. "Best lunch besides the ribs," wrote a boy on his evaluation form. And a fifth-grade girl wrote, "I normally don't like salmon. Please convince our school to have more salmon."

The taste-test was the latest step in AFDF's effort to get breaded nuggets made from minced Alaska pink salmon on the lunch menu at school. The test sure convinced the Federal Way, Washington school district. They've already made an order for their September menu. And the USDA, which supplies about 20% of the food for the nation's school lunch program, is now considering Alaska salmon nuggets for their permanent product list.

AFDF sponsored the nugget tests in four California and Washington school districts to prove to the USDA, which previously wouldn't allow minced-fish products in its school lunch programs, that pink salmon nuggets could be successful. Professional product judges at USDA liked them, but withheld their approval pending word from the final judges — the students themselves.

"Even kids who said they didn't like fish gave salmon nuggets high marks," said Deborah Greenberg, who coordinated AFDF's effort to test the nuggets in schools. "Eighty percent of the kids from first through twelfth grades liked the nuggets enough to want them on the menu."

Greenberg started with a series of 11 focus groups in one of California's largest school districts, San Bernardino. About 25 students participated in each focus group, and each tasted the nuggets dipped in various sauces (barbecue, catsup, honey-mustard). Participants then graded them for taste, smell, texture, color and desirability on their school's menu.

The second step was a market test in three Washington school districts. AFDF provided 5,645 lbs. of nuggets, preparation instructions, some extra help to determine plate-waste (that's the ratio of nuggets served to the amount the kids actually eat) and some incentives to encourage kids to buy the nuggets for lunch: in this case, T-shirts with Alaska's salmon-eating gold-medal skier, Tommy Moe.

"We were very encouraged by the number of kids who liked the nuggets," Greenberg said. "There's a trick to getting kids to try the product, because a lot of kids think they don't like fish. But once they try it, we found they really like these nuggets. They're breaded, they're finger-food, and dipped in catsup these kids think they're great."

Next step: USDA approval

The salmon nugget team then took the taste test results, nutritional information, a list of potential producers, and an armful of other information to the Northwest Agricultural Marketing Service of USDA, the agency arm that procures product for the school lunch program.

"If you can demonstrate to AMS that you have a product that's low enough in fat, that's highly acceptable to school children, and is at a price range we can afford, then the Service will consider a purchase of nuggets on a test basis," said Beth Hayden, who provided guidance to the project from the USDA's Office of Food & Nutrition Service. "One of the most important things is, how acceptable was it to the audience?"

One of the factors USDA will consider, Hayden said, is the fat content. The nuggets used in the taste test derived 49% of their calories from fat. New USDA school lunch regulations soon will require that the overall lunch menu should target a level closer to 30% of calories from fat.

"But the 30% reflects the whole menu, not each individual item," Hayden said. "So a higher-fat product could still be acceptable, depending on what it's served with."

Doug Van Devanter of Trident Seafoods, who provided this batch of salmon nuggets for the AFDF project, said they're working on a lower-fat nugget. "Some of the fat is contributed by the salmon but most of it comes in the breading," he said. "We do have a product development project to create an alternate breading system, and we're working on it. We have produced lower-fat versions of breaded pollock items, but that particular coating didn't work well with salmon. But we're working on it."

Not an endangered species

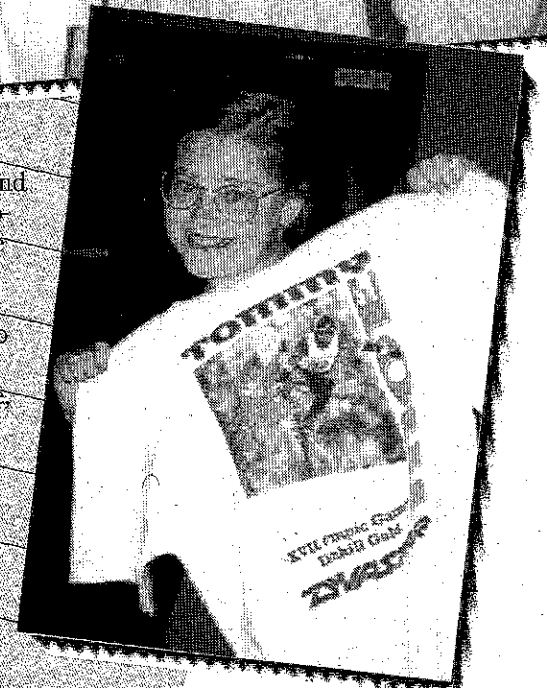
The nuggets were made at Trident's plant in Anacortes, Washington. The mince is tempered to a semi-frozen state and then formed into shapes that are rolled in an even coating of breading and then conveyed to a spiral freezer. The formula adds some spices and, to some batches, some natural coloring to give the product a uniform color the natural shade of pink salmon.

Trident has been producing pink salmon nuggets for about two years, Van Devanter said. Most of the nuggets go to foodservice buyers — a few already have gone to schools — and the company introduced a two-pound retail bag back in January.

There are at least two other producers geared up to make breaded salmon nuggets should the school program take off. Generally,

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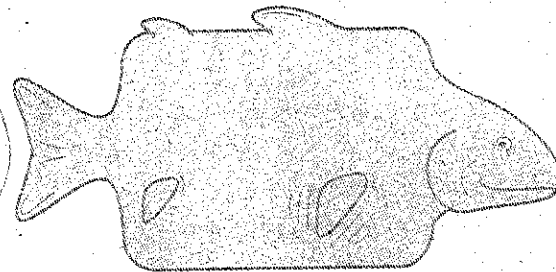
Please convince more I normally don't like salmon our school to have salmon
Mandy grade 5



By Krys Holmes
Design by Richard Drake

SALMON BLOCKS:

Building better products?



Anyone who's ever tasted an ocean-bright pink salmon right off the line, who has held that wild delicacy on the back of the tongue and savored the twin tastes of saltwater and tenacity, will tell you that 13¢/lb. is not just a starvation-wage grounds price. It's a travesty.

Salvaging pink prices will require scoping out a few new markets solid enough to use shelf-stable pinks throughout the year. As with most battles, the best

weapon here is imagination — in this case, it's the producers' ability to come up with pink salmon products that consumers want to eat. The 1.3 million cases of 48-tall cans now in inventory hint that so far our imaginations haven't worked any miracles.

Several producers have developed some non-traditional products from pink salmon: nuggets, portion-controlled patties and chowder, for example. All of these products begin with the same intermediate form: pink salmon blocks.

Fillet and mince blocks:

Leggos of the value-added world

Frozen pink salmon blocks probably won't win the battle for the salmon industry, but they sure are jogging processors' imaginations, and that's a big help. AFDF, along with a group of seafood or-

ganizations, is about to complete a cycle of experiments with pink salmon blocks made of fillets, mince, and a laminated combination of 85% fillets and 15% mince. Last summer, we arranged for production of about 6,000 lbs. of various kinds of blocks — some included anti-oxidant ad-

ditives, some didn't — and throughout the year the quality experts at the Fishery Industrial Technology Center (FITC) in Kodiak have run quality tests as those blocks

sit out the year in cold storage.

In a second leg of the experiment, we froze headed/gutted pinks, let them sit on cold storage for six months, and in February slacked them out for reprocessing into mince, fillet and combination blocks, also using variations on the anti-oxidant theme. The two anti-oxidants were Duralox, provided by Kalsec, and L-900 from Specialty Foods.

Results are mixed, but interesting. First, we learned that skinless, boneless frozen Alaska pink salmon blocks do hold up in cold storage, and work well when reprocessed into value-added products like nuggets and portions. About twenty companies across the country have tested and worked with AFDF's pink salmon blocks, and their comments range from "We can't use this" to "Where can we buy some?" and also include, "Why don't you experiment with...."

We learned that skinless, boneless frozen Alaska pink salmon blocks do hold up in cold storage, and work well when reprocessed into value-added products like nuggets and

Creating a year-round supply

One way to create a year-round supply of pink salmon blocks is to freeze whole fish (headed/gutted) for reprocessing later in the year. The FITC lab analyzed the quality of pink blocks manufactured in February from H&G fish frozen last summer, and compared it to the quality of pink blocks manufactured last summer and held six months in frozen storage.

Initial tests show the quality is about the same, with some variations: The blocks made from fish soaked in Duralox before storage showed far lower rancidity than the other blocks, and the glaze was strong and fully intact. Duralox, a natural anti-oxidant, imparted an unexpected flavor of rosemary to the product, which

some users might find unacceptable. The texture of the blocks with L-900 was firmer and more desirable than either the Duralox or the control product.

"One of the important things we're proving is that you have to do something to maintain the quality of the product during frozen storage," said AFDF's Chris Mitchell. "We're also investigating whether there's a future for natural anti-oxidants in this application — and it appears that there is. Nothing like Duralox has been tried on Alaska salmon before."

For information:

Chuck Crapo, FITC: (907) 486-1500
Tom Jones, Kalsec (616) 382-3060
Peier Fox, Specialty Foods, (206) 584-9270

Fillet blocks available for testing

Interested in pink salmon fillet, mince or combination blocks? We have a limited supply for distribution to interested users. To order your samples of any of the following blocks, call Denise Linnell at AFDF, (907) 276-7315 or fax (907) 271-3450.

Fillet blocks:

Untreated fillet block
L-900 fillet block
Duralox fillet block

Frame mince blocks:

Untreated mince block
L-900 mince block
Duralox mince block

Combination blocks:

(85% fillet/15% frame mince)
Untreated combination block
L-900 combination block
Duralox combination block

Other variations:

Untreated trim mince block
Untreated 85% fillet/15% trim mince block
Duralox trim mince block
Duralox 85% fillet/15% trim mince block
Covi-Ox injected fillet block
Duralox injected fillet block

Nuggets pass the test

continued from page 1

producers design the nuggets to be affordable to schools. That means they use mince that is a byproduct of their higher-value skinless, boneless fillet production, and by turning that mince into nuggets they increase the overall value of the fish.

Some school districts can afford to pay a little more for their lunches than others can, said USDA's Hayden. Most schools don't want to pay more than 35¢ to 40¢ per serving (which equals \$1.30 to \$1.49 per pound for value-added nuggets FOB the school), but some schools can only pay 25¢ to 30¢ (\$0.93 to \$1.15/lb.).

"Affordability depends on what else is being served, and how much the entire menu costs," she said.

Van Devanter said these prices aren't an obstacle for producers. "We designed this product to be affordable to schools," he said. "That's why we wanted to make the nuggets out of mince, which is a byproduct of our traditional production. The price point is at least close to what most schools can afford."

What next?

The Federal Way, Washington, school district has agreed to purchase 4500 portions of Alaska salmon nuggets for their September menu. Mary Asplund, the school district's buyer said the price probably is too high to keep the product on the menu long-term, but she's excited about introducing it to schoolkids.

"This is a very high-quality product," Asplund said. "I'm concerned that we develop kids' tastes for seafood, and this is a product that enables us to do it. If you

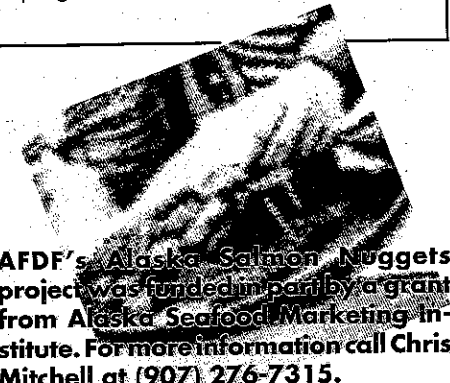
could get it into Skippers, or do a national ad campaign, then these nuggets would have no trouble competing in the school lunch program."

"We hit one unexpected problem," Greenberg said. "Kids have heard about all the disappearance of wild salmon on the West Coast. They were concerned that they were eating an endangered species. We need to educate them somehow that wild Alaska salmon is in plentiful supply."

Eighty percent of the kids liked the nuggets enough to want them on the menu.

HACCP-produced seafood OK'd for school lunches

The House Education and Labor Committee in May approved the Child Nutrition Act, which will allow some new items onto the school lunch program including Alaska salmon nuggets. Currently, schools can only buy seafood products from plants that hire on-site inspectors. Under the new Act, schools can buy product from any plant participating in the HACCP program — an in-plant quality control system that will be required in all seafood plants by next year. The HACCP program will open the door for many seafood products, including nuggets, into the school lunch program.



AFDF's Alaska Salmon Nuggets project was funded in part by a grant from Alaska Seafood Marketing Institute. For more information call Chris Mitchell at (907) 276-7315.

Free salmon market info!

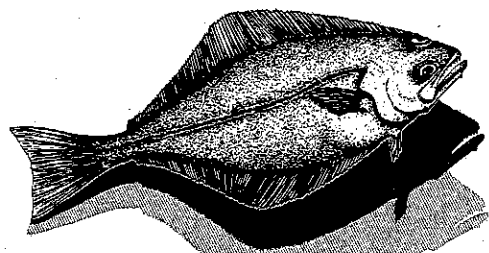
You can call (907) 248-8030 from any fax machine and receive all kinds of free information on markets, prices, inventories, market influences and issues that affect movement of all species of Alaska salmon. The Salmon Market Information Service is run by Dr. Gunnar Knapp of the University of Alaska, and is paid for by the new salmon marketing tax that fishermen assessed themselves last year.

The fax-on-demand service sends prices, trends and commentary right to your fax machine. There are a number of different categories of information, divided up by species. It's only set up through July, to see if fishermen will really use it. Simple instructions greet every caller, and you can even have faxes sent to another number. Try it! It's easy, and useful too.

Also, the SMIS publishes four different newsletters of interest to salmon fishermen, processors and marketers. To get on their mailing list, write to Salmon Market Information Service, University of Alaska Anchorage, 3211 Providence Dr., Anchorage, AK 99508.

AEDF

projects update



SURIMI SURIMI

Arrowtooth surimi takes another shot

The long struggle to make surimi from arrowtooth flounder will get another boost this fall, when an AFDF project resumes to remove some of the last obstacles between this ubiquitous resource and a hungry market.

"We already know that arrowtooth flounder, with the addition of an enzyme inhibitor to maintain texture, makes a high-quality surimi," said Chris Mitchell, AFDF executive director. "But our last effort raised some big questions, and with this last

portion of the project we hope to answer them."

Arrowtooth surimi produced at All Alaskan Seafoods in Kodiak and processed by Sea Blends of Seattle last fall met all the quality standards, and performed well in seafood analogues when mixed with pollock surimi at levels no higher than 10% or 20%.

"However, when we added 30% arrowtooth surimi to the blend, strange things started happening," Mitchell said. "The fibers broke more frequently, and the product had an unusual odor — not bad, but strange. So we want to figure out, are these problems caused by the enzyme inhibitor? By the percentage of inhibitor used? By the freshness of fish at processing time?"

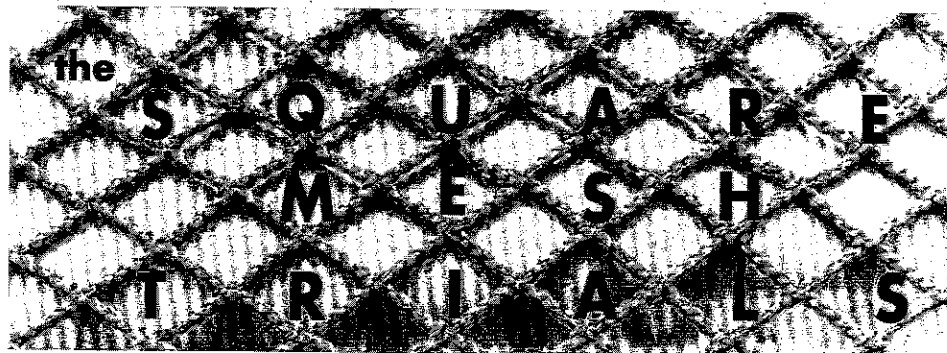
Potato starch is the additive that helps the arrowtooth flesh maintain its texture at high temperatures. Elapsed time out of the water before processing might be a factor in the experiment, because arrowtooth was harvested as a bycatch to the flatfish fishery last fall. Surimi production couldn't begin until the arrowtooth supply at All Alaskan had reached a certain volume.

"Whiting surimi producers went through some of the same questions and problems," Mitchell said. "We know arrowtooth does make good surimi. We just have to iron out a few of these details."

Arrowtooth flounder is the second most abundant species in the Gulf of Alaska (236,240 metric tons of allowable biological catch) and normally is caught in huge numbers, sometimes up to 50% of the catch, by fishermen targeting other flatfish.

"Right now, fishermen get nothing for the arrowtooth they catch," Mitchell said. "If we send people out to catch arrowtooth, their halibut bycatch would be too high. But if there's a market for arrowtooth surimi, then fishermen could get paid for the arrowtooth they do catch. It could make a huge difference."

Production will probably begin in October, during the next flatfish harvest.



A team of Bering Sea boats is gearing up to drop a series of trawl nets in the water to test square-mesh and diamond-mesh cod ends for their ability to release small pollock. It's phase two of an AFDF project to help trawlers decrease waste of under-sized pollock that are too small for mechanical filleting. This summer's goal: to identify two mesh sizes or orientations that are most effective in allowing small pollock to escape.

Last year, project leaders generated some selectivity curves for 5-inch diamond and 5-inch square mesh cod ends that tell us what percentage of fish of varying sizes (20 cm., 30 cm., etc.) escape through each kind of cod end. However, last year's experiments were suspended because there weren't enough small pollock around to reproduce actual fishing conditions in the past few years.

This year, the four trawlers will hit the grounds just before the pollock B season begins, and will concentrate on those filling in some of the blanks left after last year's test fishery was suspended.

Documenting survival

After this summer's tests have narrowed down the optimal cod end configurations to two, we'll begin phase three. In early 1995, we hope to monitor the survival of small pollock that escape from those two cod ends. The escaping pollock will be collected within a cod end cover and guided into a rigid-framed cage. An underwater video camera will monitor what happens to fish in the cage, and will give us some idea of their health and well-being after a period of time.

The overall goal of the project: to help

fishermen do what they can to contribute to the long-term health of the pollock stocks. Resulting data also will contribute to deliberations now going on at the North Pacific Fishery Management Council, where one industry group has proposed a new regulation specifying what kind of cod ends pollock trawlers may use — another effort to limit pressure on the young year-classes of the pollock population, to decrease waste, and to help ensure healthier stocks in the future.

The boats participating in this project will fish under a special research permit, and American Seafoods also will contribute some of their pollock from the Community Development Quota system to the project.

Dr. Ellen Pikitch of the University of Washington, and Chris Bublitz of the Fishery Industrial Technology Center are also lending much expertise to this study. For more information, call project manager Paula Cullenberg at AFDF.



For more information on these or any AFDF projects, call us at (907) 276-7315 or send us a fax at (907) 271-3450.

Stalking the golden egg: Pink salmon caviar gets a boost

A hen is only an egg's

way of making another egg, said Samuel Butler, and if the same can be said for salmon, then the world of salmon caviar has a lot to look forward to.

A small Anchorage company is working on a new way to manufacture salmon caviar from skeins of roe using an enzyme found in the viscera of crab, a material usually discarded by crab processors. The enzyme, called Digestase, comes from a crab's hepatopancreas. A few years ago some Russian developers found that the enzyme neatly digests the collagen of the skeins, or sacs, that surround salmon eggs, but leaves the eggs intact. Those Russians since emigrated to Anchorage, where they met Jack McMahon of Great Northern Sea Products, and together they formed the Alaska-Russia Salmon Caviar Company.

Salmon roe isn't new. It usually is produced in two forms: either in the skeins (sujiko) or in caviar form without skeins

(ikura). Ikura is a higher-value product than sujiko, but pink salmon caviar is rarely produced this way because the eggs are small and delicate, and difficult to remove manually from the skeins without doing damage to the eggs.

McMahon maintains that Digestase can reduce the manual labor required in producing pink salmon ikura, and cuts production costs. Also, he says, recovery rates using the enzyme range from 85% to 90%, compared to 70% - 75% recoveries from manual skein removal.

"We're hoping to produce about a hundred tons of ikura from pink salmon this summer," McMahon said. "How much we actually produce will be anybody's guess. But we know the product is acceptable — we've been experimenting with it for six or seven years — and we already have established markets."

The company will sell its pink salmon ikura to markets in the U.S., central Europe and Japan.

"Ikura is a Russian word," he said.

"That's where the technique was developed, and they've used it for centuries, long before the Japanese. Today, a great amount of product goes to middle European ethnic groups living in the United States. There are also white-tablecloth restaurants that serve it, but central Europeans consider ikura a food item rather than a delicacy."

The roe content of a pink salmon increases from about 3% in the early season to 8% or 9% just prior to spawning, he said. Pink salmon eggs are smaller and milder tasting than other Pacific salmon species.

The company will purchase skeins of roe from salmon processors in Ketchikan and Anchorage this summer. They'll drop the skeins into an agitator with the Digestase and then wash the eggs and salt them to produce ikura. Washing removes the enzyme, McMahon said, so none of it remains in the caviar.

The company is applying for FDA approval and for a U.S. patent for the prod-

uct. In the meantime, they will import Digestase from Russia.

"It's a pretty interesting material," McMahon said. "It also has some medicinal properties, some of which I don't know much about. It's similar to an enzyme developed in Norway from cod viscera, which they use in a variety of applications including removing the skin from squid. I know they've had their patent out for some time."

Once a patent's in hand, he said, the company would like to produce Digestase in Alaska using byproducts from crab processors. But this summer, they'll focus on demonstrating to the market that ikura made with Digestase can fetch a handsome price, and that commercial-scale processing is feasible in Alaska. We'll keep you posted.

For information, call Jack McMahon at (907) 522-4182.



S-K says "No" to Alaska salmon

Bucking pleas from fishermen's organizations, processors' groups, Alaska's legislature and governor, and the state's team of congressmen, the National Marine Fisheries Service rejected AFDF's comprehensive salmon project for its 1994-95 Saltonstall-Kennedy funding. The Foundation's project was to seek out new markets for Alaska pink and chum salmon, to guide processors in making new products to fit those markets, and to smooth out the rough spots for the harrowed salmon processors of the North Pacific who hope to create a new future out of a disastrous salmon market.

It's the first time AFDF has ever been rejected by the S-K program, though project budgets have been cut drastically in recent years. According to NMFS, AFDF was turned down for several reasons: The project was too ambitious and its goals too unclear; it didn't include developing a mechanical pinbone puller; and reviewers thought the Alaska Seafood Marketing Institute, not AFDF, should be doing product and market development.

Most of the Saltonstall-Kennedy industry grants program funds went toward laboratory and university research rather than industry development projects. The

INDUSTRY *news*

shift toward research and management priorities reduces federal aid to the struggling seafood industry to a mere \$1.8 million this year — only a fraction of the total \$6.19 million Saltonstall-Kennedy program. The S-K industry grants program was created to devote a percentage of revenues from marine product imports toward helping develop U.S. commercial fisheries.

"The current direction of the S-K program goes against its original intent," Mitchell said. "The U.S. is suffering tremendous blows to its commercial fisheries, and while research into hagfish or seaweed culture is interesting, it's not helping the nation's \$500 million-dollar industry survive. Here in Alaska, we have a crisis in our salmon fisheries, the last wild Pacific salmon fisheries in the country. This is exactly the kind of problem that the S-K program was designed to help solve."

Industry groups and AFDF members, with the help of Senator Ted Stevens, now are scrambling to find funding for the Foundation's salmon industry devel-

opment project, which was crafted to involve all sectors of the industry. "We'll figure something out," Mitchell said. "Unfortunately, the industry faces the kind of problems that individual processors can't fix on their own. There has to be a concerted effort involving all levels of the marketplace. It takes commitment to change a whole industry. Private companies have made the commitment, and have asked for a small percentage of government assistance, but they've received little help."

Meanwhile, there's an effort to list Alaska salmon at the top of next year's S-K priorities so ongoing projects won't die on the vine.

First herring surimi made in Alaska

Westward Seafoods in Unalaska produced 750 tons of herring surimi this spring. The Associated Press reports that it's the first commercial production of herring surimi in the U.S.

The product, made from Togiak her-

ring, will be marketed in Japan. For information call Westward Seafoods at (907) 581-1660.

Pellet-raised salmon production doubles

Actually, it more than doubled: farmed salmon production leapt from 22 million lbs. (live weight) in 1992 to 26 million in 1993. Meanwhile the U.S. imported 118 million pounds of salmon in 1993, valued at \$265 million. This was a 10% increase in quantity and 5% increase in value over 1992. Most of that increase (14 million lbs.) was fresh Atlantic salmon.

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 508 W. Second Ave., Suite 212
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 (907) 276-7315
 Fax (907) 271-3450
 Shirley Marmett, Secretary
 Denise Linnell, Controller
 Paula Cullenberg, Project Manager
 Chris Mitchell, Executive Director
 Published by Winterholm Press
 Kryns Holmes, Editor
 (907) 345-2425

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"Man, unlike any other thing in the universe, grows beyond his work, walks up the stairs of his concepts, emerges ahead of his accomplishments."

— John Steinbeck

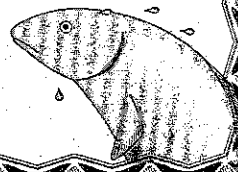
The best thing about salmon fishing in Alaska

The best thing about salmon fishing in Alaska is eating it hot off the grill. Members of AFDF and United Fishermen of Alaska are hosting an invitation-only fish fry in Anchorage September 10 to introduce the Anchorage-area legislators, political leaders and key state administrators to the 1,225 commercial salmon permit holders who live here. Most local politicians don't think of Anchorage as a fishing town, and many aren't aware of the fishing-related issues that concern their neighbors here in Alaska's largest community. This is their chance (and, coincidentally, an opportunity for all candidates who survive August's primary election) to meet their permit-holding neighbors, to learn about the challenges that face our industry, and to talk about solutions for the future.

Gee, what's on the menu? Yukon and Southeast king salmon, Copper River, Cook Inlet and Bristol Bay reds, Kodiak and Prince William Sound pink salmon, along with some of the newest salmon products now on the market including spreads, chowder, nuggets and medallions.

This is not a fund-raiser. It's not a family picnic. It's a chance for the leaders and participants of our community to meet eye-to-eye and talk seriously about how our community can make a commitment to change the future of Alaska's salmon industry.

Interested? For information about the barbecue, call Chris Mitchell at AFDF, (907) 276-7315.



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Alaska Fisheries Development Foundation, Inc.
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