

The **LODE** **STAR**

Charting the course of fisheries development.

Alaska Fisheries

Development Foundation

Volume I, Issue I

Summer 1983

POLLOCK & PENCILS

The creation of a market

At first glance, the AFDF Alaska Pollock Development Program may look unrealistic. A plan to give a million pounds of pollock to the food industry in return for nothing at all but a few ideas and a smattering of information could hardly be called economically sound. To expect the free exchange of information between companies who normally have very little to do with one another may even be called naive.

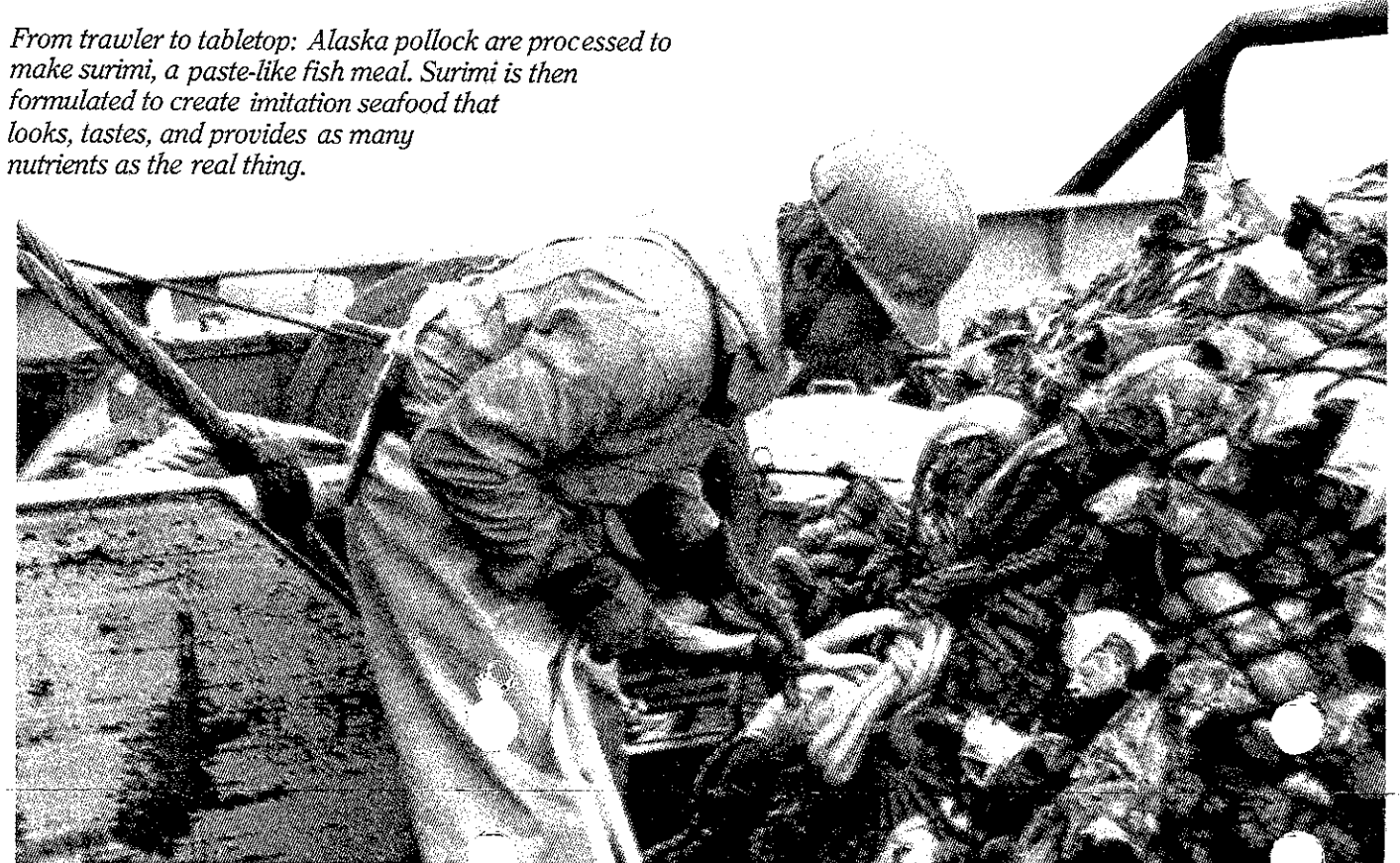
But the market-driven industry designed approach of the Pollock Development Program is hardly revolutionary. In fact, it's not even a new idea. The concept is based on the 18th Century economist Adam Smith's premise that "if an exchange between two parties is voluntary, it will not take place unless both believe they will benefit from it."

The pollock program is expected to find some measure of success because it benefits all sides of the industry.

The program mirrors an example cited by Milton and Rose Friedman in *Free to Choose*, in which the family tree of a pencil is recited step by step: From the mining of graphite in Ceylon to manufacturing factories for erasers; from felling cedar trees for the shafts to smelting the metal for ferrules at the end—the entire process is done by individual sectors of the industry for their own profit.

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From trawler to tabletop: Alaska pollock are processed to make surimi, a paste-like fish meal. Surimi is then formulated to create imitation seafood that looks, tastes, and provides as many nutrients as the real thing.



Pastries to Peanuts

The days of a pollock always looking like a fish are over. Alaskan pollock is no longer the finned and slippery fish we remember. It has been minced, jelled, shaped, colored, heated, formed, and flavored to become something else: most commonly, fish patties and imitation crab legs.

But some experimenters have taken it even further, and made pollock-based surimi into artificial ham, potato chips, and even whipped cream.

A pollock, evolving into a dollop of high-protein non-dairy whipped cream?

This is the kind of spark of imagination that kindled an idea between Chris Mitchell and his staff. By changing the way a pollock looks, they thought, you can change the way the world thinks about it—and thereby change its future.

Pollock has a limited future as a fish. Its future in the world market is as a food.

Suddenly, pitted against other protein sources in the food market, the little pollock takes on new stature. This nutritious, low-fat food base with 19.7% protein per gram can be re-formed to imitate or blend with any food from peanut butter to soup stock to goat chow.

In addition, Alaska pollock costs less than dry macaroni and, at three billion pounds last year, is more plentiful than rice in China.*

Mitchell and his staff took a good look at the changing face of pollock. What they saw was a new future for Alaska's bottom fishing industry.

As executive director of Alaska Fisheries Development Foundation, Mitchell is spearheading the Foundation's new Alaska Pollock Development Program, a plan to provide nearly a million pounds of minced pollock and

surimi (see inset) to the food industry. In exchange, the Foundation asks only for the one most valuable commodity in plans of this sort: ideas.

The Foundation will purchase the fish, have it processed and provide it to the food industry in exchange for information both sides can share on how to exploit this untapped resource. All sides stand to gain.

The project has three definite goals: to create a dependable U.S. market for Alaska's pollock; to show the international markets that U.S. producers can compete on their level; and to help domestic producers learn surimi production through experience.

"What we're trying to do is bring several problems together," Mitchell said. "The food industry needs a low-cost, high volume, dependable protein resource. And Alaska's pollock needs a permanent, reliable market to support it before it even becomes worthwhile for U.S. producers to touch it."

"The Foundation," Mitchell said, "will work simply as a middleman, a catalyst of ideas and information, the connection through which the circuits and wires catch their spark."

"The beauty of the plan is that basically we're not asking anyone to do anything they haven't done before," he said. "We're going to let the product development specialists in the food industry do their thing."

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*According to Encyclopedia Britannica, the Peoples Republic of China produced 1.4 million metric tons of rice in 1979; Alaska's pollock harvest is measured at 1.5 million metric tons annually.



THE VIEW FROM HERE



Anyone reading their National Fishermen over a morning mug of coffee, Seafood Leader, Pacific Fishing, or even many daily newspapers, can see that Alaska's fishing industry is in the spotlight. Some of this publicity hovers over Alaska's traditional fisheries of salmon, crab, shrimp, and halibut.

Attention is mounting, though, on Alaska's vast bottomfish resource, and there follows an increasingly rapid scramble to "get in on the action."

Directed fisheries by foreign fleets are being pressured into joint venture agreements, while more U.S. fishermen are proving the willingness and ability to harvest a larger share of the resource.

Hungry crabbers and trawlers looking to diversify are focusing on over-the-side joint ventures. The

American industry is also getting involved in white fish processing through at-sea and shore-based facilities.

All these efforts are but the tip of the iceberg; they represent a mere fraction of the potential that could be realized from Alaskan cod and pollock resources in years to come.

It has become increasingly obvious to those people looking at the future that Alaska's pollock industry needs to consider the food industry for a role model.

"Role model" was the concept behind the Alaska Pollock Development Program, which we presented to the Foundation's board of directors last December. Now, after reams of revisions and much further thinking, we have presented our idea to the National Marine Fisheries Service for funding.

The key to our plan (See "Pastries to Peanuts," pg. 1) is developing new pollock products and ensuring their marketability. In short, to create a "role model" the industry can learn from in creating its own prosperity. This project is the perfect forum for innovation and creativity, and can only thrive on the exchange of ideas.

The Foundation intends to be a vehicle for blending those innovations with suggestions from others—a catalyst of energies. We hope to be the willing, listening canvas on which the pollock industry paints its future.

To do this requires cooperation among everyone involved—cooperation for the benefit of furthering each participant's opportunities.

Because the Foundation's goals are expanding, our membership requirements are expanding as well. In addition to the fishermen and processors

who have heretofore been allowed membership in the Foundation, our qualifications have now broadened to include companies involved in other critical industry and food sectors.

We welcomed Baader North America Corporation and Ralston Purina Company to our membership at our March board meeting. Other companies and people with new ideas are joining not only to get their hands in Alaska's pollock resource, but also to share in the exchange of information.

We would heartily encourage your company to become a member of the Alaska Fisheries Development Foundation (if you're not already). We look forward to exchanging ideas with you.

Chris Mitchell
Executive Director

Hedging is like insuring your future. Anyone involved in producing a cash commodity can reduce losses and help guarantee income by learning the hedging market.

Hedging is the buying and selling of futures contracts to protect against possible price changes in the cash market. The concept is far from new. For over 100 years, the producers and major users of agricultural products and precious metals have used the futures market to compensate for the risks of adverse price movement.

The fishing industry can gain from this, too.

This is how it works: the reason that hedging cash positions with futures positions is an effective protection is that the two positions tend to move in opposite directions.

For instance, say you own some pigs and you also own pork belly contracts, in which you are bound to sell pork bellies at a given price. With the futures contract in hand, you no longer need to worry about a drop in the price for which you can sell your pigs. If the price of pigs falls, the price of pork bellies will probably also decline, and the value of your contracts to sell at the higher price would therefore rise. The loss that resulted from the fall in the value of your pigs will be at least partially offset by your gains in the pork belly futures market.

Another example: a corn farmer is preparing to plant 1,000 acres of land, and he knows that each acre will yield about 100 bushels of corn. He also knows the approximate cost to produce his crop (including cost of seed, fertilizer, labor, insurance, insecticide, depreciation of equipment, etc.) He estimates the cost at \$2 per bushel. He normally harvests in November.

Corn is selling in the futures market for \$3 a bushel. The farmer could sell the December futures for \$3 a bushel. In other words, he could enter into a contract to sell a million bushels of corn in December for \$3 a bushel.

By hedging, the farmer protected himself against the price fluctuations that may happen between the time he placed his hedge and the time he harvested his corn. No matter what happens to the price of corn, the farmer knows he will

HEDGING

To protect your future

by Edward E. Schadek

make \$1 per bushel for his crop. This is called the selling hedge.

The buying hedge is just the opposite of the selling hedge, and is for the protection of the processor, manufacturer, or grain elevator owner. Each needs a continuing supply of raw materials throughout the year. The buying hedge involves the purchase of futures as a hedge to protect against a possible price increase of the actual product. A company like Kellogg's can

buy a December futures contract of corn for \$3 a bushel today, and know that in December they will have a supply of corn at that price, no matter what the going price may be then.

Hedging can also help a processor who deals with foreign governments. He may contract to sell his product at a future date and to be paid in foreign currency. But to protect his profits against a fluctuation in foreign currency, he should hedge the currency in the futures market.

For instance, a processor contracts in the Spring to sell \$1 million worth of fish to a Japanese market for delivery in August, and agrees to be paid in Japanese yen. But if the value of the yen declines in comparison to the U.S. dollar, the processor will lose money. So he hedges his position in the futures market by shorting, or selling the Japanese yen in an amount equal to what he will be paid. If the value of the yen declines, the profit in the futures contracts will make up for the loss in the value of the yen he is paid for the fish. Therefore, he has eliminated the risks of price and currency fluctuations.

Hedging can be done by any qualified commodity broker, and should be considered as a form of insurance or protection for those companies or individuals that deal with the risks of price fluctuations of commodities or raw materials.

Edward E. Schadek is a commodity broker with Dean Witter Reynolds, 3601 C. Street, Anchorage, Alaska 99503. For additional information write or call Mr. Schadek at 907/562-2828.

RESOURCES: Commodity Trading Manual; Chicago Board of Trade Futures Trading in International Currencies; Chicago Mercantile Exchange Pension & Investment Letters; James M. Little

Pastries to Peanuts continued

The Foundation has contacted nearly 500 companies, from extrusion equipment manufacturers to dog food producers, fish stick makers, and a few giants in the food processing and marketing industry. They're also talking to processors, marketing and packaging experts, transportation companies, and of course, fishermen.

The next step will be to provide the actual product—eventually up to a million pounds of minced pollock and surimi—to interested firms. Along with the fish will come a "Surimi Test Kit," which will provide a few clues as to how to work with the product and get results.

Then the food industry will go to town. They'll poke, fiddle, boil, bake, salt, flavor, steam, and shape their surimi into whatever products they believe will make it in the marketplace. Marketing experts will take it from there, packaging, naming, fitting the new product into its particular niche, and testing it in its variety of forms before the American consumer.

The market then tells the producers what sells best; the guesswork is eliminated.

"This is the first time the American consumer will have dictated what the fishing and food industries supply them," Mitchell said. "That's why the program is bound to work. Because it's not a couple of fishermen getting together over a sixpack trying to figure out what the American housewife wants to put on her table. All the fishermen have to do is fish."

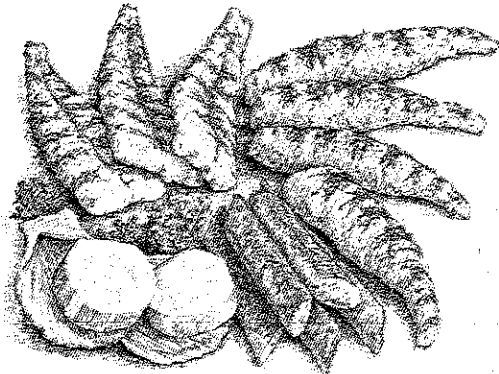
The plan has already garnered some very excited response from a wide spectrum of the industry. General Foods Corporation's Soliman Shenouda said, "Development of an acceptable food base from pollock is a most promising route . . ." F.J. Miller of Stephen Paoli International equipment manufacturers said, "We are most interested to see this project develop, because we have been crying out for years against the waste of these

vast quantities of fish such as pollock. Your project is needed and practical . . ."

Keith Johnson of Flohr Metal Fabricators, Inc.: "We would like to be involved any way we can." Tyre C. Lanier of North Carolina University: "I can't tell you how encouraged I was to read (about the program). Your emphasis on assistance, not meddling, should prove very attractive to all those companies now interested in exploring new product opportunities."

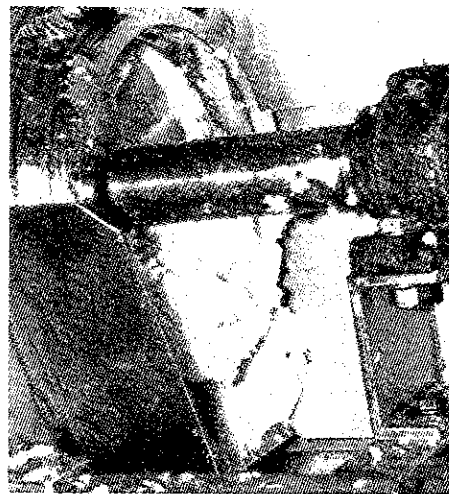
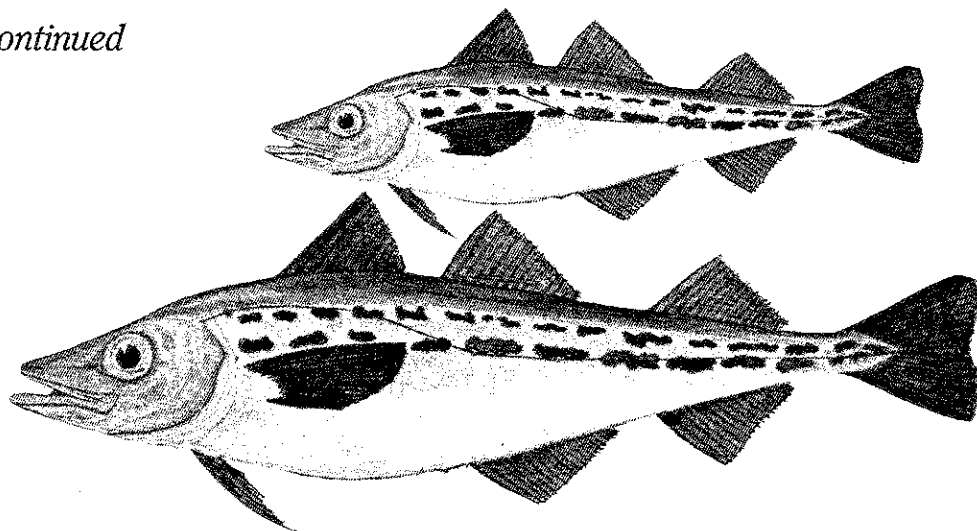
Processors, equipment manufacturers, financial consultants, pet food companies, marketers, and some of the nation's largest food producers are joining forces at the chance to get involved, to use their ideas, to help discover how to exploit this abundant resource. For every facet of the industry, it spells profit.

Experts say the project is well-timed. Falling oil prices, lower fuel costs, and declining interest rates necessitate



economic diversity in Alaska's oil-based economy. Pollock has the potential of generating an industry-wide income approaching the state's present oil revenues. And the increasing scarcity of Alaska's traditional fish resources (primarily salmon and king crab) precipitates immediate action.

Critics of the program say it won't provide all the answers. Alaska's three billion pound a year pollock industry has had a rough childhood, and it has a rough future ahead before it's full



Alaska Pollock <i>Theragra Chalcogramma</i>	
Average Size	40 cm.
Average Weight	500 gr.
Potential Harvest	1,300,000 metric ton
Calories	91 per 100 gr.
Protein	19.7%
Fat	1.3%

grown. Dominated by foreign interests (85% of the resource is controlled by Russian, Japanese and Korean firms) pollock in its traditional forms (i.e., fillets) has always been offered on the international market at lower prices by foreign companies than American efforts can match. Because of its small size (average 500 grams, and 40 cm.) pollock fillets are a labor-intensive product, stacking the advantages in favor of foreign interests who pay less and are often subsidized.

Until now, there has been little

incentive for Americans to enter the industry.

AFDF's development program certainly won't dissolve the poor pollock's troubles. The American industry is still inexperienced, and doesn't have the reliable reputation in the world market that foreigners have.

But we do have advantages: pollock is potentially a year-round fishery, and can provide a dependable living for the dedicated fishing fleet. Because it is a high-volume, low-unit-price resource, start-up costs will be high but the resource will be dependable and within U.S. control. Pollock in surimi form is fluid substance, easily handled with modern machinery. It suddenly becomes a technology-intensive industry, rather than labor-intensive, swinging another advantage in our favor: technology is where America excels.

"Attacking a big problem like this in piecemeal fashion just doesn't work," Mitchell said. "With this vertically-integrated program, we're going to generate solutions from within all sectors of the industry, using the ingenuity of the people who know their business best."

Mitchell hopes this plan will help reclaim three billion pounds of a domestic-owned resource, employ Pacific coast fishermen and food industry people nationwide, and provide a healthy, reliable protein food for American consumers.

Changing the way a pollock looks, and changing the way we think about it, may change the face of its future.

Pollock & Pencils cont.

The Friedmans start their story by suggesting that no one person knows how to make a pencil. "No one sitting in a central office gave orders to these thousands of people (involved in the process)," they write. "No military police enforced the orders that were not given. These people live in many lands, speak different languages, practice different religions, may even hate one another—yet none of these differences prevented them from cooperating to produce a pencil."

The pencil was made because miners, lumberjacks, pencil painters, and school supply companies each worked to exploit the pencil industry for their own profit.

The Foundation believes there are a vast number of industry sectors who will eventually profit from pollock development, and therefore are potential participants in this project.

For example, imagine Ace Food Co. learns from its research lab that an imitation crab-flavored snack dip would do well on the market. The company president realizes that such a product could be easily manufactured from Alaskan pollock, but he has no idea how to make it.

The Foundation connects Ace Food Co. with Worldco, an extrusion equipment manufacturer, who is delighted to help figure out how to make snack dip from pollock using their equipment, because the success of such a product would mean Worldco would sell more equipment.

But during the process, Worldco runs into problems with the formulations. The Foundation then puts them in contact with Biffle, a food ingredients manufacturer, who in turn can profit if the product works, because it would bring more contracts for food ingredients production.

None of these firms are involved because they're interested in pollock development; they're involved because they're interested in making money.

As the Friedmans said, "It is a startling idea that economic order can emerge as the unintended consequence of the actions of many people, each seeking his own interest."

This network of profit-seeking individuals and firms is the market. The U.S. pollock market of the future will be forged in some measure of the

business relationships catalyzed by the Foundation's efforts.

Using the natural forces of the market rather than forcing a product idea through the process is what ensures success. This is why communication among the firms involved is so important. The lively exchange of information is the glue that holds the process together.

According to the Foundation's plan, those participating in the free connection of information and innovations will be the ones who gain most in this venture.



the First Word From Akutan

The Normar II docks alongside the Trident processing plant in Akutan.



For Trident Seafoods Corporation and the AFDF membership, the Foundation staff has prepared an operational analysis charting the progress of Trident's Akutan white fish processing plant. After only nine months of full production, it is still too early for decisive conclusions on the viability of America's largest cod producing shore-based facility. But, the report assures, fish going through the plant not only pay the bills, but are also the raw material of the learning experience in a business that is entirely new to the industry.

The plant processed 29.5 million pounds of Pacific cod between June 1982 and March 1983. September was the slowest month, with landings of 907,000 pounds of raw cod.



January's purchases of raw cod were nearly three million pounds, and the total in February leapt to over 8.5 million pounds.

Though the monthly bottom line figures in the report have only recently emerged in black, the earlier losses actually represent 1) an investment in future market shares for Trident, and 2) an investment in a crucial education for the Alaska seafood industry.

Further conclusions are premature at this point, but Trident and the Foundation are constantly analyzing the errors and opportunities realized at Akutan, with the hope of helping the emerging Alaska white fish industry to survive and expand.

A crustacean by any other name . . .

Giant Seafoods and other artificial crab importers report sales in the U.S. haven't been high, especially in the private or restaurant markets.

One of the biggest problems, importers say, is labelling the imitation crab legs. Giant markets frozen Ocean

Magic Seafood Pieces, but has also labelled some of its artificial product "Crab Meat," which the Bureau of Environmental Health says is a flagrant violation of labelling regulations.

Other companies have named their brands "Seafood Sections," "Sea Legs," and "Ocean Pieces," with varying degrees of success on the market.

Diane Boratyn of the National Marine Fisheries Service was quoted in a Washington Post article saying, "The American public would accept this product, because they accept things like hot dogs. But the way to market it is to tell everybody what it is."

The Post went on to quote Eugene Newberry of the FDA's Bureau of Foods, who said he fears there may be misunderstandings even with accurate labelling of the Pollock-based seafood. "Pollock is unfamiliar to many Americans," he said, "and the consumers may not understand it's a fish."

It's not the only thing consumers may not understand. They also may be confused about how to eat simulated crab legs. Jac Creative Foods, who manufactures King Krab, gives recipe ideas with its promotional material explaining how to use simulated seafood in dips, soups, and salads.

Even so, marketing advisers say, the product is better suited to institutional markets than retail, at least until the buying public becomes more educated.

"The product doesn't sell at white-tablecloth restaurants, which can afford to serve the real thing," the Post article explains.

Meanwhile, Jac Seafoods and other companies are developing simulated scallops, and there are reports that simulated abalone, shrimp and lobster are on their way.

Call them imitation, call them "hybrids," a crustacean by any other name would taste, producers hope, like crab.

POLITICS

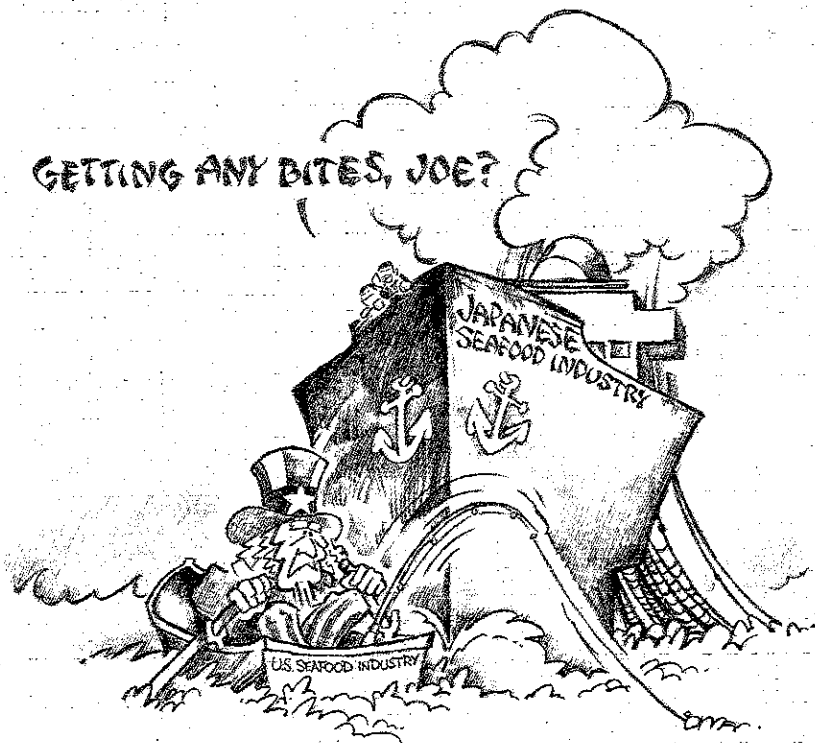


ALASKA'S FISHING INDUSTRY GAINED two victories from the Senate Commerce Committee when they approved a provision to continue the fishermen's guaranteed loan fund without restrictions, and later approved an amendment to

channel all Saltonstall-Kennedy funds to be used for fisheries development. Both moves were sponsored by Alaska's Sen. Ted Stevens, who maintains Reagan's efforts to restrict the fishermen's fund to \$25 million annually will decrease its usefulness to Alaskan fishermen.

The Commerce Department has issued new regulations to allow federal loan guarantees to be used by shore-based processing plants. Trident Seafoods Corp. is recipient of the first processing loan guarantee under this program, in the amount of \$9.4 million. The government handed over this loan in April, a full two years after Congress passed the American Fisheries Promotion Act, which provided for the loan guarantee.

GETTING ANY BITES, JOE?



Editor's Turn

TRIAL and TRIUMPH

All of us have entered into that blissful state of experiment at one time or another. We've mixed gunpowder with the neighbor's mailbox to create home-built bombs. Or added paprika with cooking sherry to "personalize" a dinner recipe. These gestures are commonly called "trial and error," and when they're finished they're often called mistakes.

But it's this splendid appetite humans have for the experiment itself that keeps the world leaping forward, the human mind dancing.

Lewis Thomas, biologist and author, cites the DNA molecule's propensity for error as the sole reason for evolution. Things go on as normal for a few generations until, for instance, some DNA molecule makes a horrible blunder and some poor rabbit somewhere grows long ears. It suddenly becomes more auditorily sensitive, and can better hear the perils of the world as they approach. After that moment—that monumental mistake—the rabbit is better able to survive. Eureka!

"We get along in life this way," Thomas writes. "We are built to make mistakes, coded for error." Thomas has titled this process not trial and error, but trial and triumph.

Fisheries development is necessarily an adventure into the future. Our industry is the perfect forum for the "trial and triumph" method, the controlled experiment, the adventure into the unknown.

In order for this to succeed, the Foundation must be the center of a network of communication lively enough and varied enough to keep the system working.

The LodeStar is a vehicle of that philosophy. The LodeStar was designed to be a mixing bowl of ideas, an

expose of information, a sounding board through which readers can exchange ideas, express frustrations, explore problems, dabble in humor, and write all those "Dear Editor" letters you always wanted to write but knew your local family newspaper wouldn't print.

We will explore projects, trudge through political issues, consider economic uncertainties, sink our teeth into the food and health industries, and laugh at cartoons. We expect to take a thoughtful approach toward fisheries development, asking more questions than we answer. Where is the industry going? What do we need to learn next, and who do we turn to for examples? What's working, what isn't, and why?

We encourage, nay thrive on, any and all input into the LodeStar. This issue, futures specialist Ed Shadek contributed a fine article explaining how fishermen and processors can cut their losses by investing in the futures market. Letters to the editor are also welcome, whether they be criticisms, suggestions, discussions of articles, or just letting off steam.

Communication is the root of all learning. And we will have reached our goal at that moment when one idea collides head-on with another idea, and someone steps back and said, "Gee, will you look at that!"

That is the moment we look forward to. Hope to see you there.



Krys Holmes
Editor

Read any good titles lately?

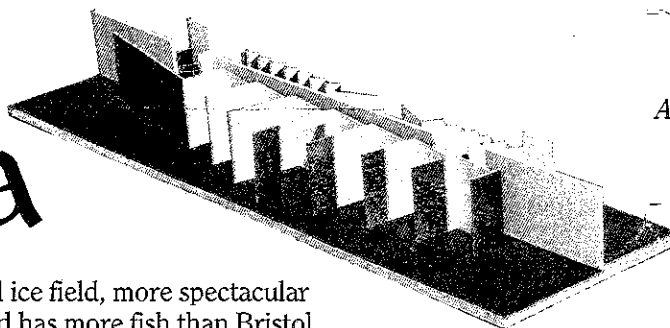
The constant flow of information within the industry is one of the primary concerns of AFDF. We therefore keep a healthy stock of printed reports that may provide helpful information to members of the fishing/food industry, and we'd be happy to share them.

The price following each title represents printing costs only. Please contact our office to order copies.

Alaska Fisheries Development Foundation 805 W. 3rd Avenue Anchorage, Alaska 99501 907/276-7315

Conversion of the Crabber "Aleutian Mistress" to an Auto-Longlining Catcher/Processor	\$ 5.00
Longline Demonstration Project, Interim Report ("Aleutian Mistress")	\$ 5.00
Conversion of the Crabber to an Auto-Longlining Catcher/Processor, Executive Summary	\$ 2.00
The Joint Venture Fishery for Yellowfin Sole, Bering Sea, Summer 1980, by Captain Barry Fisher	\$ 4.00
Fishing With the "Friedrich Busse," a West German Factory Trawler, in Alaskan Waters	\$ 5.00
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Proceedings From the Pollock Conference	\$15.00
Pacific Pollock, Resources, Fisheries, Products and Markets	\$ 9.00
Fisheries of Alaska 1981, AFDF Status Report	\$ 7.00
Commercial Fish Species of Pacific West Coast and Alaska	\$ 5.00
Exploratory Fishing for Rockfish in Southcentral Alaska, Using Jigging Machines	\$ 6.00
The LodeStar, Alaska Fisheries Development Foundation Quarterly Newsletter	\$ 5.00/yr.

Fair of Fares anuga



A scale model of the U.S. display area in the Anuga Food Fair shows each booth space designed for eye-catching visuals.

What's bigger than a glacial ice field, more spectacular than 90 miles of coastline, and has more fish than Bristol Bay in July?

It's the Anuga World Food Fair, the largest food fair in the world, held in Cologne, Germany October 15 to 20.

This year, the face of the fair will be different; the American seafood industry will have its own specially-designed pavilion on the fairgrounds, an emporium that will show off a spectacular display of America's seafood to the international market. The Fair expects half a million to a million people to attend.

AFDF and the five other fisheries development foundations across the country are designing a pavilion that would make the average fish peddler think he had died and gone to heaven. Project coordinator Michael Broili is embroiled in planning, designing, and tracing schedules for the year-long preparation. It will be, Broili stated simply, the largest and most comprehensive U.S. seafood display the world food market has ever seen.

Information packets are now available to interested U.S. exporters. Potential participants should contact the

Foundation immediately. Display space in the pavilion is quickly being reserved, Broili said.

The world's two largest food fairs alternate annually between SIAL in Paris and Anuga in Cologne. Last November's Paris fair brought \$20 million in product orders for U.S. seafood exporters, and over 1,400 sales leads for the participants. Those figures are about double what the U.S. industry reaped during the 1981 Anuga fair.

This year, the U.S. plans to top its attention-getting display of 1981 and its 20 foot long freezer of fresh fish. A full-time French chef will prepare tasty samples for visitors, and the Foundation has chartered the 88-room hotelship "Helvetia" to house Anuga guests in luxury afloat on the Rhine.

The 20 or so people involved in planning this "show of shows" say this year there will be more participants, more displays, more fish, and more worldwide recognition of America's vivacity in the seafood industry.

Keep an eye on this. America just may make a big splash in the seafood market.

RIGS & THINGAMAJIGS

JUST LIKE KIDS TO OPEN THE PACKAGE AND PLAY WITH THE BOX . . . But

processors have found the Pers plastic trawl box worth paying attention to, according to the New England Fisheries Development Foundation. After fish are bled and gutted, they're stored on ice in the rugged boxes and stacked in the hold until lifted out by a grip claw forklift device specially designed in Iceland.

These claws can lift 1,000 lbs. every two minutes—up to 15 tons per hour—for rapid transport of fish from the hold to an onshore filleting line without mangling the fish. The Baader Co. projects four- to six-percent increase in true yield on boxed round fish, and a labor savings of 30 to 40% . . .

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FOOD & HEALTH



YOU EAT 72% of the seafood you pay for. In contrast, you eat 44% of the beef you pay for—after bones and trimmings are removed and the meat is cooked. Only 9% of the U.S. population doesn't eat beef, according to a recent survey; many say beef is the best buy at the meat market. But comparing dollar value of the cooked product, seafood becomes the better dollar value. Next time anyone from the 50% of the population who says they don't eat fish speaks up, stand up for the fishing industry . . .

GRANDMA NEVER HAD IT SO GOOD: Murazen Co. of Japan says its "Karupuro" fish bone cookie is doing well in the natural food market. The cod-and-pollock cookie made of bones, seaweed and vegetable flavoring is high in protein and calcium, and attracting the eye of health nuts everywhere. (Let's see how it stacks up next to milk in Grandma's kitchen . . .)

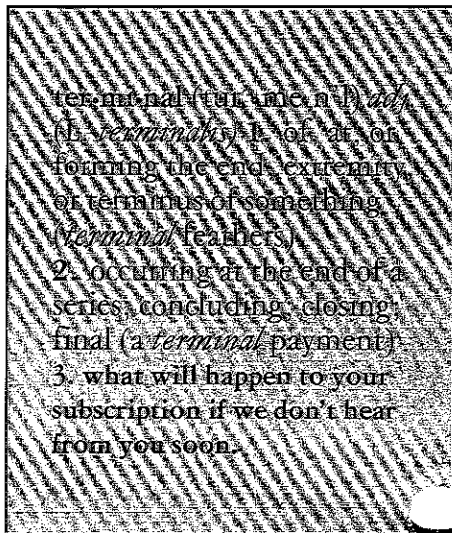
POCKET CHANGE



CAN THE INVENTION OF THE LIGHT BULB shed new light on the current economic distress in the world today? An MIT group thinks so. The System Dynamics Group is evaluating the

theory that technological innovations come in clusters, and usually occur in times of economic depression when "reservations about untried, risky new ideas disappear with the sense that relief might come from anywhere," according to group member Gerhard Mensch, quoted in Business Week magazine. Believers cite the invention of the incandescent light bulb in 1879 and the telephone in 1881—during a 24 year depression—as an example.

Case is furthered by the commercialization of railroads in the 1930's, and new innovations in aerodynamics that led to the commercial success of the DC-3 in 1935. What's wrong with technology today, they say, is that too much money is being pumped into the wrong industries. New innovations in technology are needed to blow the economy out of the doldrums—and that will happen when certain technical obstacles are overcome, and when the trend cycle repeats itself, Group members say. In the meantime, the nation is on a definite decline . . .



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