

# SALMON RUN



## *Press Kit*

APPLIED  
CREATION

1401 Ocean Avenue, Suite 301  
Santa Monica CA 90401

TEL: +01(310)721-0829 FAX: +01(310)319-9501

[www.appliedcreation.com](http://www.appliedcreation.com)

Copyright © 2003 Applied Creation

# CONTENTS

Technical Specs & Crew List.....	3
Synopsis .....	4
Farmed Salmon Controversy .....	5
Salmon Fisherman’s Dilemma .....	8
Catching Wild Salmon.....	11
Production Notes .....	14
Filmmaker Technology .....	17
Interview Biographies .....	19
Crew Biographies.....	23
Fish Farms Become Feedlots of the Sea.....	26
Should You Eat Fish? .....	31

# Technical Specs & Crew List

<b>RUNTIME</b>	44 minutes (1 hour television)
<b>FORMAT</b>	NTSC 4:3
<b>SOUND</b>	Dolby LTRT - LCRS
<b>DELIVERY</b>	DigiBeta
.....	
<b>FILMING LOCATION</b>	Naknek, Alaska
.....	
<b>COMPANY</b>	Applied Creation
<b>PRODUCERS</b>	Christopher Sutton David Solomini
<b>DIRECTOR</b>	Christopher Sutton
<b>HOST</b>	David Solomini
<b>NARRATOR</b>	Troy Webster
<b>COMPOSERS</b>	John Beal Chris Wilson Jed Ojeda

*ALL TERRITORIES, ALL RIGHTS AVAILABLE*

# Synopsis

***Salmon Run* focuses on the impact that farm raised Atlantic salmon has on a small fishing community in Naknek, Alaska, a town dependent on the annual wild salmon run.**



Follow David Solomini, a young man from the lower 48, on his journey to the wild 49th state. He discovers fascinating people and participates in a way of life that has been nearly unchanged for hundreds of years.

The relatively new industry of salmon farming is blurring the line between natural and artificial with deceptive marketing. Corporate grocers have favored farmed salmon over wild salmon and given farmed salmon a misleading label, Atlantic salmon.

The American consumer is understandably confused and is being sold an inferior product for the same price that they would pay for wild Alaskan salmon. Wild Alaskan salmon is not widely available to Americans. Most of the salmon caught in Naknek, Alaska is sold to Japan for far less than Americans pay for farmed salmon.

Our government has turned a blind eye to this problem and a small community is being financially strangled. The continued devaluation of wild Alaskan salmon puts a way of life at risk.

Each generation has difficult questions they must answer. David's generation must decide whether to try to preserve an age old way of life or accept newer technology and corporate profits as a way of life.

In David's own words, "So this is the life here in Naknek. You're born; you work hard; and die young. It's gotta be worth more than forty cents a pound."

You too will come to see the salmon on the grocery shelves differently and gain a new respect for the food on your plate.



# Farmed Salmon Controversy

We eat farmed chicken, farmed cattle, farmed wheat - in short, we do not go into the woods to make our salad. The farm raised salmon controversy is trumped up, because without farms, the world population would be a fraction of its size.



FARM RAISED ATLANTIC SALMON BEING FILLETED

Farmed food is not optional, but a requirement, and in third world countries, salmon is the number one source of protein. Farmed raised Atlantic salmon has played an important role in addressing world malnutrition. There is not enough wild salmon to feed billions, even if every single one was harvested.

But in every controversy, there are two sides with two different views of the same problem. This controversy has those who farm Atlantic salmon on one side and those who harvest wild Pacific salmon on the other ... and then there are those who make a living off controversies. I will call them the 'paid to complain people' and the paid to complain people help neither group because they missed the problem and instead, focused on the sensationalized.

These paid to complain people have things to say - like pollution, like lice in the meat, and other unpleasant observations about the fish farming industry. There are some grounds to their concerns, but the same things can be said about all of the products in our refrigerator. Every bite we take comes with the risk of disease, insect manifestation and environmental degradation. Case in point, the *Food and Drug Administration* has a requirement for the maximum number of insect body parts in a pizza and that requirement is not zero.

It is remarkable, albeit inevitable, that man learned how to farm the ocean. The ocean was the last, great piece of real estate to be harvested and only ten years ago did ocean farming

SALMON RUN PRESS KIT



*NORWEGIAN SALMON FARM* - On the left, is a salmon cage. On the right, a worker fertilizes the eggs.

become commercially viable. Presently, salmon farms are in Washington, Norway, British Colombia and Chile, and for the time being, the world’s desire for fresh salmon year round has been satiated.

In ten years the market for wild Alaskan salmon has been replaced by farmed raised Atlantic Salmon. Why? One reason is wild Pacific salmon is in season only one month a year. The other eleven months, wild salmon is only available frozen or in a can. Not many opt for canned salmon when fresh salmon is at the seafood counter ready to be wrapped in white paper.



But what is in that white paper? The natural flesh color of farmed Atlantic salmon is an unappetizing and unmarketable whitish gray. Salmon farmers add chemicals to the food pills, which causes the flesh to become pink. You can see the difference in color when wild and farmed salmon fillets are placed side by side. Farmed salmon is peach colored, not red, and wild salmon is a deep red.

Though the difference is obvious when the two are side by side, the consumer can not see the difference in grocery stores because special lighting is used. To the unwary buyer, it is just another choice of fresh fish available in the winter months, summer too. Even smoked salmon, a staple of Jewish diet, is farmed.

When tasting farm raised salmon in comparison to wild Pacific salmon, the taste is different. Farmed salmon does not have the same texture or taste as wild salmon. That is because farmed salmon is caged and does not have to survive four years in the ocean.

Some describe farmed salmon as having a ‘mashed potato’ texture and “taste like a fish, but don’t know the kind.” You know wild salmon when you taste it.



*Wild salmon, ready to be smoked*



*Fillet of red salmon, species common to Bristol Bay*

But given the shortcomings of farmed salmon, those shortcomings can be made to magically disappear in the consumer's eyes with an effective marketing program and farmed salmon marketing voodoo starts with the name, *Atlantic salmon*.

Atlantic salmon sounds wild. In fact, the name is not a lie. Atlantic salmon are the species the farmers grow because they can not keep Pacific salmon alive in cages.

Atlantic salmon is not a true salmon. It is of the trout family. It is common knowledge that salmon die after spawning, but Atlantic salmon are different.

Both species are born in fresh water. Both swim in the ocean. Both return to where they were born to start anew. But the similarities end there. Atlantic salmon swim again after spawning. Pacific salmon do not.

Are there wild Atlantic salmon? Yes, but they are in trouble on the developed eastern coast of the US. The pristine fresh water, which they need to spawn, has been polluted or the rivers blocked with dams making the annual salmon run an impossible event. Salmon do not choose new spawning grounds. They just grow old and die, without reproducing.

Few wild Atlantic salmon are left. A troubled river in Maine had one salmon return - a male, the loneliest fish on the planet.

Marketing farmed Atlantic salmon is an operation of deception. Taking the name of an endangered wild fish for a man-made product is a questionable tactic. The consumer is confused and the fish farm operators want them that way.

The paid to complain people have much to say, but the point of the controversy is money. Wouldn't you pay more for a wild fish, over something farmed? Most would, but the marketing firms would rather not make the distinction between farm raised Atlantic salmon and wild Pacific salmon. During the month of June and July, when wild salmon is available fresh, consumers still choose farmed salmon because they do not know the difference.

Wild salmon or anything wild for that matter, should be priced at a premium because the supply of natural things is finite. Conservation only works if pricing reflects the supply. That is not happening with wild Pacific salmon.



*Feeding food pills to farmed Atlantic salmon. The food pills contain antibiotics, pesticides and chemicals to change the color of their flesh.*



# Salmon Fisherman's Dilemma

**Naknek is a community with a local population of six-hundred, which grows to ten-thousand during the summer months. Naknek gets its name from one of the four rivers in Bristol Bay. Bristol Bay has the largest salmon run in the world. Millions of salmon return home to spawn and die.**



**NAKNEK RIVER**

Japan has little farm land and is dependent on the ocean for its existence. As the Japanese population grew, so did the strain on the local fishing grounds. Eventually, the ocean around Japan became virtually empty and the Japanese needed another source of food.

Bristol Bay, in the eighties, became their new fishing grounds. The Japanese, flush with money from their success in the automotive industry, flooded the community with money. They bought everything.

Like a drug dealer offering the first hit for free, the community embraced the Japanese. Loans were given freely, when no US bank would risk such loans, and new equipment and new boats bought at an alarming pace. The fishermen assumed a debt to a foreign nation without an eye to the future.

Soon, all the fish caught in Naknek were being sent to Japan. No one else would pay what the Japanese would pay - \$2.50/lb. The British, the Europeans and the Americans no longer bought Bristol Bay reds. Naknek had only one buyer for what they harvest.

In the nineties, the price began to fall. Without competition setting the price, the ugliest rules of monopoly came into play. The loans made in the eighties came back to haunt the community. Those who did not want to sell were forced to sell because they defaulted on their debts. Very soon, Naknek became a one company town.



*Drift fishermen fishing the Naknek River. There are hundreds of boats crammed in a small area.*



*Gill net being deployed*

Perhaps Naknek could have tried to raise the price by creating other markets, but Atlantic salmon suddenly appeared on the radar. The salmon market became flooded with a cheap and plentiful supply of salmon. The market for wild Pacific salmon was evaporating worldwide.

But the community fought back. A price fixing lawsuit was brought against the corporate canneries leaching Naknek. The lawsuit was doomed without government support, but the lawyers made a nice profit even though the outcome was not in the fishermen’s favor.

One of the few family canneries left in Naknek tried unsuccessfully to open a new market in the eastern US. They flew in thousands of pounds of processed fresh salmon. The corporate grocers would not buy, even though the product was far superior to the Atlantic salmon, which they were buying. The good-old-boy system worked against them and the new bully on the block had a big stick to swing. A marketing department was that stick and the family cannery did not have chance.

Two weeks later, there was still no buyer and the fish was no longer humanly eatable. It was sold as dog food for pennies on the pound and the rebel cannery declared bankruptcy. It bought by the Japanese for a song and subsequently closed.

The fishermen tried to strike. In the 90s, the fisherman stopped fishing. Three hundred boat crews crossed the picket lines and made a fortune. Vince Webster, a fisherman, said, “We’ll never do that again. We’ll work for nothing, rather than let those guys fish again.”

Americans were blaming Americans and accomplished nothing. The Japanese still had salmon that year and many of those who did strike had loans they could not pay because they missed a whole season. They were forced out of the business and the remaining fishermen were not willing to further anger their only employer. There were no more strikes.

The Japanese knew the salmon in Bristol Bay was far superior to the Atlantic imitation. They kept buying when no one else would and forcing the price down every year. By 1998, the price dipped below a dollar per pound.

The community was faced with difficult decisions. Schools and services had to be cut. Taxes had to be raised. Despite the increased burden, the community learned to live without. The teachers volunteered their time and schools stayed open. Doctors and nurses kept the clinic operating. To the outsider, Naknek appeared to be a normal, functioning community when it was anything but.

About the same time, Copper River figured out a way to market their product in the US. Copper River is south of Bristol Bay and they get the first salmon returning to Alaska. Anyone in a fancy seafood restaurant is familiar with the success of the Copper River marketing campaign. On the menu is salmon, priced sky high, with the words “Copper River King” next to it.

The consumer pays the premium because they understand the value of wild salmon and the Copper River fishermen reaped the benefits. Their



Copper Kings went to over a dollar a pound, while the Bristol Bay Reds were far below. Naknek did not have the money for an expensive marketing campaign.

By 2000, the next nail in Naknek's coffin was struck. The Japanese economy began to slide. The Yen did not have the buying power it did in the 80's. The Japanese could no longer pay a fair price; and in a competitive market, they would be out of the game, but they had an ace in the hole. They still controlled the town and the fish was theirs, no matter the price.

The price dropped to an all-time low of 40¢ a pound. The fishermen were being paid less than their grandfathers, who fished the Naknek fifty years ago.

Now the fishermen had to catch more fish to pay even the basics. The strain on the wild resource grew. Fewer fish were returning because too many were taken in prior years.

When the price of something wild is devaluated to worthless, not only does a way of life disappear, but the fish too might also be gone. The largest wild salmon in the world may be no more because only one country knows the value of the fish that return every year to Bristol Bay. American treasures should not be given so freely.



*David, the host, looking at headstones in Naknek's oldest cemetery. A family is buried together.*



# Catching Wild Salmon

There are three types of Salmon fishermen in Naknek: the set netters, the drifters and the sportsman. Of all three, songs and stories are written about the drifters. It is the most exciting, glamorous and deadly profession in Naknek. Every year, at least two drift fishermen die.



*Gill net spooling out from the stern of drift fishing boat. Rapid spool out and retrieval is key to a profitable boat.*

The mothballed Air Force base near the Naknek River had another purpose besides defending US soil from the red scare - generals would vacation there and catch a big king salmon. Sports fishing is one of the success stories in Naknek. The relatively young marketing program has already renamed it as “Eco-Tourism,” but it is still sports fishing by another other name.

The draw of Alaskan sports fishing is worldwide. People come from as far as Germany and Russia to catch an American treasure and none leave empty handed.

Surprisingly, salmon no longer eat when they make their final run to the spawning grounds. Tasty offerings on a line do not work. Sports fishing technique involves irritating, not enticing the salmon to bite. The salmon are in such a rush to mate, they knock whatever is in the path out of the way. Loud, colorful artificial lures are the choice of the sports fisherman and the more irritating the bait, the better.

Commercial fishing is a different beast all together. The *Department of Fish & Game* regulates the catch to ensure the future supply.

The operating word of *Fish & Game* is “escapement.” Escapement is how many salmon make it past the commercial fishing fleet and the sports fishermen to spawn. Escaped salmon do not have a free run home. They still have to swim past a gauntlet of hungry brown bears, eating nonstop to build a fatty coat for the winter slumber.

In 2002, 19 million salmon returned to the four river systems in Bristol Bay. Of that, 11 million were harvested and 8 million was the ‘escapement.’



*Counting Towers used by Fish & Game. The salmon are counted with a low-tech technique. The fish counter wears polarized sunglasses to better see through the water and the salmon are visually counted. Long hand math, multiplying the number of salmon seen in 10 minutes on both banks, by the number ‘6’ finish the job.*

To regulate the catch, *Fish & Game* tackles the problem from two different angles. One, the department limits the fishing time. Two, they count the fish escaping and adjust fishing times accordingly.

Salmon come in on the tides because it is easier for them to enter the river when the tide is coming in, rather than out. With Naknek's 23 foot tides, the salmon get a good push, courtesy of the moon, to their spawning grounds.

The commercial fishing fleet is on-call 24/7 while the salmon are running. The fleet can remain idle for days and fishing openings may only have an hour notice. Normal sleep patterns are not taken into account. The call may come at 1:00 AM after three days of no fishing.

Commercial fishermen come in two flavors, *set netters* and *drifters*, and while one is fishing, the other can not.

The set netters technique involves laying a net from the shore and into the river. The net is fixed at both ends with an anchor, thus the name "set net." The length of the net is limited and the size of the net mesh, the 'holes' in the net, is also regulated. The regulations are meant to control the catch and prevent unwanted species of fish from being caught.

The net is called a 'gill net' because the .6 meter mesh diameter is exactly the diameter of a mature red salmon's head, the species of fish that the fishermen want to catch. Red salmon become trapped in the netting by their gills, while other species of fish are too large or small to be trapped. They can swim safely through or free themselves from a gill net.

After the net is set, the fisherman travels up and down it to retrieve the catch. No motors are used. The set netter physically drags his skiff, or flat bottom boat, along the net by pulling. For hours on end, the fisherman pulls the 1,000 pound skiff from one end to the other and back again, retrieving his catch. It is backbreaking work.

Drift fishermen use a different technique. They have a powered boat and the net is not anchored, but flows freely from the stern. Drifters use the boat motor to place the net and then pull it in with an electric wench.

While this may seem easier than the set net technique, it is anything but. The money a boat can earn is directly related to how fast the crew can spool out the net and pull it back in. Drift fishing is like the *Minneapolis 500*. Boats run aground, run over nets and crash into each other with adrenaline pumping regularity.

Competition is fierce and the space between boats is scare. Boats will often try to steal another's fish by laying their net only a few feet upstream of another boat's net. When this happens, one boat catches all the fish and the other has an empty net. This is called "corking."



*Gill Net - A curtain-like net that has a float line on the top and a weighted line on the bottom. The mesh is just large enough to allow the head to pass through, and then the fish is "caught" in the netting. Gill net fishing can be either set net or drift net fishing.*



*Drift Fishermen. Three boats run parallel. The boat furthest right will catch all the fish while the other two will get none. This is called 'corking,' or stealing another boat's fish.*

The boats usually fish in the salt water vastness of Bristol Bay, where there is plenty of room to maneuver, but *Fish & Game* moved all the boats into the Naknek River to protect the fish entering another river system, the Kvichak River.

The Kvichak is not meeting its escapement goal and the salmon supply is being protected until it is returned to normal levels. Boats fishing the bay risk harvesting the problematic Kvichak River salmon because they travel past the Naknek of their way to the Kvichak.

*Game and Fish* set a line in the Naknek River, which the drift fisherman can not cross. This is called ***the line*** and boats will push up to ***the line*** because further upstream, the fish have already been caught. ***The line*** is where the fishermen want to be because that is where the fish are.

Fishing ***the line*** is one of the most dangerous places on the planet. Boats are also closely packed and moving at high speed. Mistakes happen and workers do get hurt. The clinic in Naknek does a brisk business with the drifters.

The fishermen must risk fishing ***the line*** because the price of salmon is so low that anything less than a huge catch, and the fisherman risks bankruptcy.



*Fish & Game* set a line, which the fisherman can not cross. The boats push up to ***the line*** because more fish can be caught. The further upstream from ***the line***, there are less fish because they have already been caught.



# Production Notes

After seeing *Salmon Run*, one's first thought might be, "I want to go to Alaska." Oddly enough, that was the same thought the filmmakers had, which inspired the documentary. It had nothing to do with farmed salmon and everything to do with adventure.



*Wild woof who came to see what the Hollywood film crew was doing in Alaska.*

We, a crew of three (Christopher Sutton - **Producer**, David Solomini - **Host** and Jonathon Millman - **Cinematographer**,) set out of an adventure and adventure we got. What you won't see in the film is a brown bear, about man height, interrupting the filming most unexpectedly or a wild wolf coming up to see how tasty a Hollywood film crew would be.

What you will see is a whole bunch of salmon and the people who harvest them. So the brown bear sounds more interesting? Well, you try to film while a large and hungry looking animal is walking toward you. We decided to run.

Problems filming in Alaska are many. For the Starbucks addicts, there are none in Naknek. McDonalds either, but insects there are plenty. They bite, leave blood and have a knack for flying into your ear canal while shouldering a camera.

If you look closely at the film, you'll see a haze of the infuriating bugs in every outdoor shot. It is said that they can cause caribou herds to stampede. Take note of the locals. They are used to them, but David, the host, has not learned the trick as yet.

The tenacious insects only have a few warm months to do what insects do and even *Deep Woods Off* seems to work only as an aphrodisiac to the Alaskan bugs.

Producing a film far from the lights of Hollywood has challenges. Getting there is the first problem. You can not drive to Naknek. You must fly. Rumor has it that Tom Hanks visited Naknek once to sports fish and got lost in a town with one road, which dead ends both directions.



*30 miles of highway connect Naknek to King Salmon. The highway is isolated and does not connect to any other highway. You can not drive from Los Angeles to Naknek. You must fly.*

There are no camera stores in the town, so if you forget anything, you just do without. David, arriving from hometown of San Diego, did not have a pair of pants that went below his knees. Luckily, that problem was caught before we left. Armed with sweaters, rain coats and a pair of overalls, which David took a fancy too, we thought we had everything.

One thing we did not account for was batteries. We brought enough to last the shoot and then some, but the weather is cold in Alaska and batteries last half as long in cold.

One week into filming, the battery supply was running low. An emergency call was put into Los Angeles and replacement batteries were sent in by *FedEx*. Next day, there were no batteries. Concerned, the package was tracked.

*FedEx* does not operate ‘officially’ in Naknek and a subcontractor handles the shipping. The package was mistakenly delivered to northern Alaska, near **ANWR** (Arctic National Wildlife Refuge.)



*David, the host, talking with painter Bob, a local writer. He was one of the more colorful locals we encountered.*

Ironically, **ANWR** was the location of the Alaskan oil drilling debate, and ANWR was 800 miles from us. The caribou probably had no idea what to do with the batteries.

Batteries eventually did come, but not after we used our body heat to protect what batteries we had left from the energy sapping cold.

The other surprise was the long days – 20 hours of daylight to be exact. One is aware of this from expressions like ‘midnight sun,’ but until the midnight sun is experienced, the havoc it plays on a visitor’s internal clock can not be conveyed in an expression.

We arrived on the plane at 8:00 AM and started filming. A ten hour work day is normal in the movie business. After filming some of Alaska’s many beauty shots (what we call in the industry “B-roll”,) the sun dial read three in the afternoon to our untrained eyes. In reality, it was much later. It was 10:00 PM and no one felt tired, nor had dinner.

For the first few days, a visitor new to Alaska’s ‘midnight sun’ feels like superman, but kryptonite is delivered by *FedEx* on the third day.

When the third day came, the exhaustion hit us harder than a thousand sheep jumping over our beds all at once. David said in an outtake, “I don’t care where the sun is - I’ll sleep good tonight.” Even though the sun shined as bright as day, we slept in.



*David exhausted after only two hours working with the set-net fishermen.*

The weather also threw us curve balls. If you look at a weather map, you'll notice the storms circling to the north. You don't think much of it because they are going away from you, unless, of course, you are in the north as we were.

The north is like a giant drain where all bad storms go and die, and we saw our share of bad storms in their death throws.

The wind was an incessant howl, which moved the whole building of the *Apple Haus Bed and Breakfast*, where we were staying. The rain came so hard it was as if someone redirected the Naknek River at our window. Look carefully outside the windows during the film, and you'll see the plants moving furiously.

We were forced to film indoors when the bad weather came. Luckily, the Naknekians build stout structures, but there were plenty of close calls with the big bad wolf that would "huff and puff and blow our bed and breakfast down."

Sadly, the American flag flying high over the Apple Haus did not fare so well. It was in tatters by the time the remarkable adventure in Naknek had come to an end.



# Filmmaker Technology

**Salmon Run** was filmed using the technology of digital video. Despite the promise of “bringing movie making to the masses,” there are many limitations to digital video. The picture is years away from being as good as film.



An example of this limitation is the sky. When filming someone with sky in the background, digital video makes the sky white, not blue. This is because the sky is too bright compared to the person standing in front of it.



The human eye is an amazing feat of evolution, and not even film can approach what the eye can see. Digital video is several steps down from film.

This limitation was a serious problem in *Salmon Run*. One unique aspect of Alaska is the sky. Without delving into a scientific explanation, the atmosphere is not as thick in Alaska as it is in the lower forty-eight because the state is so far north. The sky seems so close that you feel you could touch it.

You may not be aware when watching the film, but visual effects was used to change the color of the sky to its proper color of blue. Everything you see in *Salmon Run* is real, except for the sky.

**BEFORE**

**AFTER**



Visual Effects were used to change the sky color from white to blue. The left image is what the camera saw (The white sky is truly blue, but white because of a limitation of digital video.) On the right, the image is corrected for what the eye would see.

Digital video does have many advantages though. Cost is one of them. Movies made on film require a crew of a small army. The crew of *Salmon Run* was only three.

Cost aside, there is another appealing aspect of digital video. Look at the people in *Salmon Run*. They are seemingly unaware of the camera. There are no lights and the crew of two seems to vanish into the walls. Forgetting a couple of guys with funny headphones is easy for the guests of the show. After a while, they even forgot the camera was there (each tape is one hour long.)

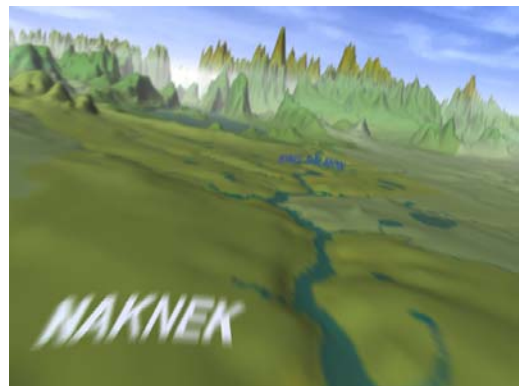


*David, the host, having lunch with the local Italian fishermen*

Digital video, unlike another other format, lets the audience be a voyeur into an event. The picture may not be as good as film, but the real story of Naknek could not have been filmed any other way.

There are other ‘ohs’ and ‘ahs’ in *Salmon Run*. The informational graphics are spiffy moving images. Certainly, you have seen better computer generated images in *Toy Story*, but that was a hundred million dollar film with a crew of hundreds. All the graphics in *Salmon Run* took one person and costs nothing other than the time and sweat needed to create them.

One shot in particular from *Salmon Run* is called “four rivers.” The sequence starts with the audience flying over the Naknek river to rise up and reveal the four river systems in Bristol Bay.



*Alaska terrain data from the space shuttle was used to create this graphic.*

The terrain is the actual terrain from Alaska. Every hill is represented, and the mountains are in the right place and the correct height (artistically correct - some adjustment was done to accentuate the mountains so they are visible.)

Obviously, the filmmakers did not go out and measure the heights of the mountains. The space shuttle was used instead.

In 2000, the space shuttle flew a radar array up in space and mapped the earth. Much like submarines used sonar to see the ocean floor, radar was used to see the whole of our aged blue marble, with all its wrinkles, and this data is public domain on the US Geological Survey’s website. With an internet connection, some 3D software and a little ‘know how,’ you too can fly over your city with your computer. Hopefully you live near mountains, because it makes for more interesting flying.

# Interview Biographies

**Vince & Sheryl Webster** (Fishing family) Vince and his wife, Sheryl, did not start as fishermen. Vince started as an enlisted man in the *Air Force*. The *Air Force* has a base in Naknek, a relic of Soviet era defense. The base is no longer operating, but many of those who served would not have discovered Naknek otherwise. Vince and his wife found Naknek because of the military and decided to raise a family there after his service was over.



**Troy Webster** (Narrator / Vince Webster’s son) Troy was raised in Naknek and currently lives in Los Angeles. He works in the television industry as commercial film crew. He also has an interest in acting. With his everyman’s look, he might just make it as an actor. He returns every summer to help his family fish and to get his ‘salmon fix,’ as he put it. Note the similarity between father and son.

**Thomas Alyesworth** (Head Chef, Ocean Avenue Seafood) Thomas began his career as a fishing guide in Mexico, but changed to a culinary career. He is the head chef at the *Ocean Avenue Seafood* restaurant in Santa Monica, CA. It is among Los Angeles’ top five seafood restaurants, no doubt, because of Thomas’ wild Alaskan salmon Pinot Noir sauce. A little secret - it’s made with raisins.



**Anthony Russo** (Fisherman) Anthony fishes the western US coast, from Alaska to California. During the winter months, he catches tuna and sardines; and the summer he catches salmon. He is part of the large Italian fishing community in Naknek and serves his calamari in the same size bowl as his pasta. Eating with Italians is never a bad idea and an Italian fisherman makes it all the better.

**John & Yvonne Kopy** (Fishing Guide) John and his wife, Yvonne, run a fishing guide service in Naknek and in New York. A local guide showed John the ropes and now he and his wife return every summer. The famous and not so famous are his clients. He has a reputation for finding the ‘big fish’ and a 30-50 pound King Salmon falls into that category.



**Lowell Fair** (Drift Boat Captain) Lowell has been a drift fishing captain for 20 years. He has a reputation for bringing in the most fish. His typical catch is 3,000 pounds of fish, a full 1,000 pounds more than the average catch. He did not want to divulge his secret technique on camera.



**Mary Shawback** (Resident) Mrs. Shawback is the community matriarch. Her business, *Bristol Bay Contractors*, is one of the few success stories in Naknek. Her son runs the business now and she is heavily involved in community activities - from schools to religious institutions. Behind any good town is a woman and Mrs. Shawback is that woman.

**Jeremy Tombs** (Cannery Worker) Jeremy, like many young men and women, come to Naknek for college money. The cannery jobs are posted in most university offices and many students heed to call. Most are not aware of the long hours, but none leave without a lifetime memory of Alaska. He is majoring in English studies and has a knack for poetry. He is a native of Kentucky.



**Walt Lemcool** (Cannery Worker) Walt is a seasonal cannery worker and during the winter months, he hauls lumber in Oregon. His claim to fame is he started the ‘drive-by’ wave phenomenon in Naknek. The locals dispute that claim.

**Sam Liberati** (Retired Fisherman) Sam retired in 2000 and now host other fishermen. They need a place to rest and his home has extra rooms for those who need it. Sam also spearheaded the price fixing lawsuit against the canneries.



**Mike Swain** (Mayor) Mr. Swain owns one of the three bars and in a town with no movie theaters, bars do a good business. He won the mayor race by only one vote and they did check for hanging chads. After he accepted the office, the community gave him a unique nickname, ‘Landslide Mike.’



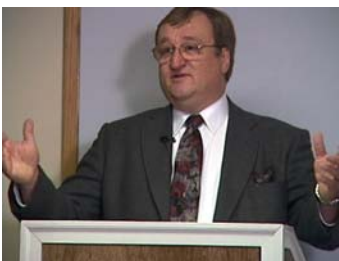
**Dan O'Hara** (Pastor) Pastor O'Hara runs one of the larger churches in Naknek. His music tastes are not traditional. The church does not have a pipe organ. He energizes his congregation with a selection of rock tunes. He is a professional pilot. In a state with isolated communities, piloting is a brisk business. Pastor O'Hara ran against Mayor Swain. Bars and churches represented in the mayor's race reflect the interesting community dichotomy.

**Allen Gilliland** (Police Officer) Allen is one of two full-time police officers working in Naknek. In his spare time, he pilots and owns his own plane. The spare time has paid off. He finds 50 year old glass Japanese fishing floats on beaches from his plane. They lasted so long because the Alaskan beaches are impossible to reach by car or foot. The floats are also known by the name "Jewels of the Pacific" and he sells them on ebay.



**Steve Morstead** (Marine Biologist) Steve grew up in Iowa and had a passion for Alaska and the field of marine biology. He attended Fairbanks University and now runs the Naknek *Game and Fish Department*. The locals have nicknamed him 'Slim,' because only outsiders are called by their family name in Alaska. With his new name, came real responsibility. He controls the number of Salmon harvested to maintain the supply for next year.

**Ryan Bill** (Fish & Game) Ryan grew up in Naknek and is currently pursuing a degree in biology from the *University of Hawaii*. He has one semester left to complete. He works during the summer with the *Department of Game and Fish*, earning extra income and expanding his college education with real world experience. His job has been to ensure enough salmon get to the spawning beds so the future salmon supply is maintained.



**Joe Duray** (Pastor) Pastor Duray runs one of the smaller, more traditional churches in Naknek. Locals and seasonals alike come to hear his sermons. His sermons are so popular, visitors from years past often request audio tapes so they can keep current with the teachings at *Soul's Harbor*. He works with the local phone company while not preaching the gospel.

**William 'Bill' Hill** (Teacher) Bill is a father of two and one of Naknek's teachers. He decided to break from his teaching role to help David with a little boat jousting. David was a good 'young grasshopper' and learned well from his teacher. They won two, but lost the final round.



**Robert Lynn** (Local Writer) The locals know him as ‘Painter Bob.’ No great mystery how he got that nickname. He was a painter serving in the Air Force. The enlisted men loved his stories so much, that they encouraged him to write a book. *Spots Along the Trail* had a run of 7,000 and sold out. If you ask Painter Bob, he will say, with a wink, that his collection of short stories are “all true.”



**Brian Whilden** (Airport Manager) Brian was another member of the *Air Force* who decided to stay in Naknek after being stationed at the base there. He was a fighter pilot and now runs the civilian part of the airport. F16s still land there and in case the military is short a pilot, Brian can take the stick.

**Susan Hankard & Jeanie Thompson** (Business Owners) Susan and Jeanie came up with a remarkable product modernizing a centuries old fishing tradition - salmon smoking. They named their version of smoked salmon *Bristol Bay Gold*. Jeanie came up with the secret recipe and it truly is remarkable, but only available in Naknek. They say their secret is fresh salmon. They smoke the salmon, which their husbands catch, on the same day.



**Al & Linda Bernarda / Pete & Diane Lusich** (Vacationing Non-locals) These are a few of John Kopy’s, the fishing guide, clients. The end of the day is salmon on a grill and trading fish stories. The Bernarda’s own a wine and spirits distribution company. Nothing goes better with fresh caught salmon than a California chardonnay and the Bernarda’s bring the best chardonnay’s for everyone at the table.

**Ashley Lawrence** (Resident) Ashley was David’s, the host, “date” in Naknek. She is pursuing a medical career and works at the local clinic. Like most young people in Naknek, she plans to leave and pursue her ambitions in a larger city.



## Crew Biographies

**CHRISTOPHER SUTTON** (Producer / Director)  
Chris has been working in Hollywood for eleven years now. Having worked on a number of studio and independent films, documentary filmmaking came by accident.

Troy Webster, a co-worker and the voice of *Salmon Run*, mentioned that he went to Alaska every summer to help his family fish. Chris, who is from Texas, loved a good fishing story and thought instead of a summer vacation, he would go to Alaska and make a little movie.



**Chris and David during filming**

A week before they were scheduled to leave, Chris received an email from his Alaskan contact about a fire and possible arson. A cannery had been burned and insurance appeared to be the reason. He was about to leave the laid back life-style of southern California to go film an event with a dark undercurrent. This was going to be more than a “little movie.”



**PAF Cannery arson**

The salmon were beginning to run, two weeks early, so the production schedule was moved forward. The whole film came together on instinct and sometimes, instinct is not always the best course for the inexperienced.

Upon returning with hours upon hours of footage, the first major problem hit like a big fish taking the line. The editing equipment Chris owned was not ready to handle such a large project. Documentaries, unlike feature films, have a lot more footage. His last film was twice as long, but *Salmon Run* had four times the raw footage.

He knew he had an incredible film, but the film was going to cost more than he makes in a year and no one would fund him because, to use an analogy, it is difficult to sell a cake when all you have is flour. The only solution was time.

When Chris left for his little movie, he did not know the trip would take two years. He returned different – with less hair, a few new wrinkles and a new respect of those who dare to pick up a camera and film something real.

As one well known movie critic once told him, “It is never a complete waste of time to watch a documentary. I can not say the same about what Hollywood makes.”

**DAVID SOLOMINI** (Host / Producer) Of all the crew, David was the one who had to work the hardest and was in the most danger. He departed from his career in acting in such films as *Back Lot Murders* and *Letters* to host a documentary.



*David was almost seriously hurt by this fish scale when it moved unexpectedly toward his head*

Alaska is far different from his native San Diego, where any direction you look, something man-made is on the horizon. There are places in Alaska where you can turn 360 degrees and see only lush green plains, snow capped mountains and perhaps a caribou herd following a well worn migratory path.

The production could afford only one fishing license and David got it. The grunting and groaning is real effort, not acting. The one-hundred pound metal fish scale swinging dangerously close to David's head is real also.

Despite the danger, there was many of those unexpected moments, which turns a job into a life changing experience. A bear, a wolf and an bald eagle all came to greet David. Some of the experiences were caught on camera and others were written into memory.



*David positioning a local in front of a Ditch Witch during an interview. The local did not know he was being moved for the best shot.*

Hosting a documentary, unlike acting, is an exercise in ad-lib. It is acting without the safety net because there is no script and the unexpected is the expected.

Even the usual role of the director is in the background. When the camera rolled, David was on his own. Not only did he have to know the subject of salmon, he also had to subtly control the camera. The interviewee was never aware David was moving to get the best background for subject of the conversation.

The Naknek struggle became his struggle and he did not hesitate experiencing the fisherman's life and all that such a life entails - hard work, long days and being cold and wet for hours. Only then could he

bring the true story of Naknek to the audience.

When the camera stopped, David did not stop thinking of ways he could help. His motivation did not have a dollar sign attached. His motivation was always the next interview and the next question, which he hoped would make a difference.

**John Beal** (composer) Award winning composer John Beal's music has been selected for the President of the United States of America's AIR FORCE ONE, he has scored 35 theatrical or television films and documentaries and 26 major network television series or specials. As a composer for theatrical marketing, John has contributed original music to over 500 theatrical trailers and 2,000 commercials for films,



including thirty of the top grossing films of all time, such as *The Matrix*, *Forrest Gump*, *Aladdin* and *Braveheart*. John also enjoys a successful career in advertising as a music producer for over 35 national advertisers, including Intel, MCI, Microsoft, Dr. Pepper, AMGEN, Ben & Jerry's, and NASDAQ.

John says scoring *Salmon Run* was a wonderful departure from his more typical assignments. "I've most often been asked to hit people hard with overt emotional triggers and bombastic or melodramatic devices. Working on *Salmon Run* was refreshing because our creative discussions were about finding the delicacy and simplicity of each scene. The problem is real and the voice of the people affected is clear. No embellishment was needed. I have been touched by this project and am very pleased for the opportunity to contribute to the sharing of an important American story."

**Chris Wilson & Jed Ojeda** (Composers) Chris has been performing, writing, producing and recording since the age of 18, and Jed has an extensive history in the music industry, as an artist, producer, A&R representative, and founder of the legendary L.A. blues club, *The Mint*. With Chris on harmonica and Jed on guitar, they gave *Salmon Run* its unique "front porch" blues sound. *Salmon Run* was their first venture into feature film scoring.

Jed and Chris learned the ropes of film scoring from veteran composer, John Beal. Their collaborative effort resulted in the two different, but seamlessly integrated, musical styles of *Salmon Run*.

The producers knew that a good blues score would not come from an air conditioned sound stage with iced lattes, so they opted to put the blues team in a 100+ degree garage in San Fernando Valley. It saved a few bucks and resulted in a great score.

With an acoustic guitar, a harmonica, a shaker made from a plastic Easter egg filled with nails and Chris' son's toy bongo drums, they produced all of *Salmon Run's* blues songs. Of course they made a few calls to John along the way. He couldn't help them with the latte, extra ice (because in Chris' words "This garage is freaking hot!"), but he did tell them about "extra tail." With a little advice and a lot of sweat, Chris and Jed gave Naknek's fishermen their musical voice.

Chris and Jed met at the *Backstage Café* in Beverly Hills. Jed had been called in as a last minute replacement guitarist for Chris' band, *The Barrelhouse Kings*. The pairing that night resulted in a year long stint as the house band, and they have been friends ever since.

## FISH FARMS BECOME FEEDLOTS OF THE SEA

**Like cattle pens, the salmon operations bring product to market cheaply. But harm to ocean life and possibly human health has experts worried.**

By Kenneth R. Weiss,  
Times Staff Writer  
December 9, 2002

PORT McNEILL, Canada -- If you bought a salmon filet in the supermarket recently or ordered one in a restaurant, chances are it was born in a plastic tray here, or a place just like it.

Instead of streaking through the ocean or leaping up rocky streams, it spent three years like a marine couch potato, circling lazily in pens, fattening up on pellets of salmon chow.

It was vaccinated as a small fry to survive the diseases that race through these oceanic feedlots, acres of net-covered pens tethered offshore. It was likely dosed with antibiotics to ward off infection or fed pesticides to shed a beard of bloodsucking sea lice.

For that rich, pink hue, the fish was given a steady diet of synthetic pigment. Without it, the flesh of these caged salmon would be an unappetizing, pale gray.

While many chefs and seafood lovers snub the feedlot variety as inferior to wild salmon, fish farming is booming. What was once a seasonal delicacy now is sometimes as cheap as chicken and available year-round. Now, the hidden costs of mass-producing these once-wild fish are coming into focus.



*The Salmofan allows fish farmers and big clients such as Costco and Safeway to pinpoint the exact pink or reddish color they want for the salmon flesh. Farmed-raised salmon, unlike their wild cousins, would have grayish white flesh without the carotenoid pigments added to their feed. The pharmaceutical giant Hoffman-LA Roche makes the synthetic pigment used in salmon food.*



*Young salmon swim in a freshwater pen at the Kokish Hatchery, owned by Stolt Sea Farm. The hatchery raises 2.5 million fry a year. These fish spend their first 18 months in freshwater, from an egg to the size called smolt, when they are ready for saltwater.*

## RELATED ARTICLES

Begun in Norway in the late 1960s, salmon farming has spread rapidly to cold-water inlets around the globe. Ninety-one salmon farms now operate in British Columbian waters. The number is expected to reach 200 or more in the next decade.

Industrial fish farming raises many of the same concerns about chemicals and pollutants that are associated with feedlot cattle and factory chicken farms. So far, however, government scientists worry less about the effects of antibiotics, pesticides and artificial dyes on human health than they do about damage to the marine environment.

"They're like floating pig farms," said Daniel Pauly, professor of fisheries at the University of British Columbia in Vancouver. "They consume a tremendous amount of highly concentrated protein pellets and they make a terrific mess."

Fish wastes and uneaten feed smother the sea floor beneath these farms, generating bacteria that consume oxygen vital to shellfish and other bottom-dwelling sea creatures.

Disease and parasites, which would normally exist in relatively low levels in fish scattered around the oceans, can run rampant in densely packed fish farms.

Pesticides fed to the fish and toxic copper sulfate used to keep nets free of algae are building up in sea-floor sediments. Antibiotics have created resistant strains of disease that infect both wild and domesticated fish.

Clouds of sea lice, incubated by captive fish on farms, swarm wild salmon as they swim past on their migration to the ocean.

Of all the concerns, the biggest turns out to be a problem fish farms were supposed to help alleviate: the depletion of marine life from overfishing.

These fish farms contribute to the problem because the captive salmon must be fed. Salmon are carnivores

and, unlike vegetarian catfish that are fed grain on farms, they need to eat fish to bulk up fast and remain healthy.

It takes about 2.4 pounds of wild fish to produce one pound of farmed salmon, according to Rosamond L. Naylor, an agricultural economist at Stanford's Center for Environmental Science and Policy.

That means grinding up a lot of sardines, anchovies, mackerel, herring and other fish to produce the oil and meal compressed into pellets of salmon chow.

"We are not taking strain off wild fisheries. We are adding to it," Naylor said. "This cannot be sustained forever."

In British Columbia, the industry, under pressure from environmentalists, marine scientists and local newspapers, is taking steps to mitigate some of the ecological problems.

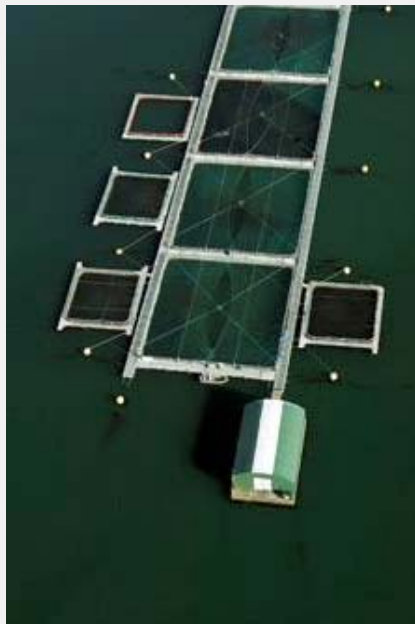
"We have made some mistakes in the past and we acknowledge them," said Mary Ellen Walling, executive director of the British Columbia Salmon Farmers Assn. "We feel the industry is sustainable, if well-managed, and we have a code of practices that is followed by all of our member companies."

Nearly 30 farms are preparing to move to less ecologically fragile areas, under orders from Canadian authorities.

Some farms have installed underwater video cameras to detect when fish quit feeding, so workers can stop scattering food pellets. Many farms are switching to sturdier nets to stop fish from escaping and keep out marauding sea lions, which are shot if they penetrate the perimeter.



Chile. About 80% of the salmon grown in British Columbia goes to markets from Seattle to Los Angeles.



*The submerged salmon pens measure 100 feet by 100 feet. Each farm is a cluster of pens, often interconnected by a metal walkway and tethered offshore with steel cables, floats and weights. Huge sacks of feed are stored in the farm's floating warehouse, seen in the lower part of the photo.*

Five international companies — three of them based in Norway — control most of the existing farms. Nearly all are situated around Vancouver Island, which begins outside Seattle's Puget Sound and extends up the coast for 300 miles.

It's a lightly populated place of stunning beauty. Cedar, hemlock and Douglas fir grow right down to the high-water mark.

## RELATED ARTICLES

The industry now recognizes that it will soon be pushing the limits of the ocean.

"There will come a time when our industry will use more of the fish oil and fish meal than is available," said Odd Grydeland, an executive at Heritage Salmon in British Columbia. "Our biggest challenge is to find substitute grains for fish meal and fish oil."

Farm-raised salmon now dominates West Coast markets, arriving daily from Canada and Chile. About 80% of the salmon grown in British Columbia goes to markets from Seattle to Los Angeles.

The salmon industry took off so fast in British Columbia in the 1980s that the provincial government, worried about the environmental toll, imposed a ban in 1995 on any new farms.

The industry responded by stuffing, on average, twice as many fish into each farm. Today, farms typically put 50,000 to 90,000 fish in a pen 100 feet by 100 feet. A single farm can grow 400,000 fish. Others raise a million or more.

The moratorium on new farms was lifted in September by the provincial government after voters elected a pro-business slate of lawmakers and administrators. As a result, 10 to 15 farms are expected to open each year over the next decade.



*An aerial view of the Midsummer Island Salmon Farm located in the Broughton of Vancouver Island in British Columbia, Canada. It is a typical farm in the region, one of several managed by Stolt Sea Farms Inc., a subsidiary of Stolt-Neilsen.*

Massive tides flush rich blue-green waters through the archipelago of islands, straits, bays and inlets, nurturing five types of wild salmon. These, in turn, attract seals, sea lions, white-sided dolphins and the world's best known pods of killer whales.

Residents rely on boats and seaplanes to reach surrounding islands that host many of the farms. Each farm is a cluster of pens, often interconnected by metal walkways and tethered offshore by a lattice of steel cables, floats and weights.

In the midst of this idyllic setting, signs of strain on the marine environment are bubbling to the surface much the way diseases and parasites, incubated in European salmon farms, fouled the fiords of Norway and the lochs of Scotland.

In Norway, parasites have so devastated wild fish that the government poisoned all aquatic life in dozens of rivers and streams in an effort to re-boot the ecological system.

"The Norwegian companies are transferring the same operations here that have been used in Europe," said Pauly, the fisheries professor. "So we can infer that every mistake that has been done in Norway and Scotland will be replicated here."

Dale Blackburn, vice president of West Coast operations for Norwegian-based Stolt Sea Farm, said his staff works very closely with its counterparts in Norway. But, he said, "It's ridiculous to think we don't learn from our mistakes and transfer technology blindly."

Still, more than a dozen farms in British Columbia have been stricken by infectious hematopoietic necrosis, a virus that attacks the kidneys and spleen of fish.

## RELATED ARTICLES

Jeanine Siemens, manager of a Stolt farm, said, "It was really hard for me and the crew" to oversee the killing of 900,000 young salmon last August because of a viral outbreak.

"We had a boat pumping dead fish every day," she said. "It took a couple of weeks. But it was the best decision. You are at risk of infecting other farms."

Farms are typically required to bury the dead in landfills to protect wild marine life and the environment. But Grieg Seafood recently got an emergency permit from the Canadian government to dump in the Pacific 900 tons of salmon killed by a toxic algae bloom. The emergency? The weight of the dead fish threatened to sink the entire farm.

About 1 million live Atlantic salmon — favored by farmers because they grow fast and can be packed in tight quarters — have escaped through holes in nets and storm-wrecked farms in the Pacific Northwest.

Biologists fear these invaders will out-compete Pacific salmon and trout for food and territory, hastening the demise of the native fish. An Atlantic salmon takeover could knock nature's balance out of whack and turn a healthy, diverse marine habitat into one dominated by a single invasive species.

Preserving diversity is essential, biologists say, because multiple species of salmon have a better chance of surviving than just one.

John Volpe, a fisheries ecologist at the University of Alberta, has been swimming rivers with snorkel and mask to document the spread of Atlantic salmon and their offspring.

"In the majority of rivers, I find Atlantic salmon," Volpe said. "We know they are out there; we just don't know how many, or what to do about them."

His research focuses on how Atlantic salmon can colonize, if given a chance. It has terrified the U.S. neighbors to the north. Alaskan officials banned fish farms in 1990 to protect their wild fishery. So they don't take kindly to British Columbian farms creeping toward their southern border.

Although native Pacific salmon are rare and endangered in the Lower 48, Alaska's salmon fisheries are so healthy they have earned the Marine Stewardship Council's eco-label

RELATED ARTICLES

as "sustainable." The council's labels are designed to guide consumers to species that are not being overharvested.

Recently, the prospect of genetically modified salmon that can grow six times faster than normal fish has heightened anxiety. Aqua Bounty Farms Inc., of Waltham, Mass., is seeking U.S. and Canadian approval to alter genes to produce a growth hormone that could shave a year off the usual 2½ to three years it takes to raise a market-size fish.

Commercial fishermen and other critics fear that these "frankenfish" will escape and pose an even greater danger to native species than do the Atlantic salmon.

"Nobody can predict just what that means for our wild salmon," Alaska Gov. Tony Knowles said. "We do see it as a threat."

Canadian commercial fishermen, initially supportive of salmon farms, have grown increasingly hostile. They were stunned in August when their nets came up nearly empty during the first day of the wild pink salmon season in the Broughton Archipelago at the northeast end of Vancouver Island.

"There should have been millions of pinks, but there were fewer than anyone can remember," said Calvin Siider, a salmon gill-netter. "We can't prove that sea lice caused it. But common sense tells you something, if they are covered by sea lice as babies, and they don't come back as adults."

Alexandra Morton, an independent biologist and critic of salmon farms, began examining sea lice in 2001 when a fishermen brought her two baby pink salmon covered with them.

Collecting more than 700 baby pink salmon around farms, she found that 78% were covered with a fatal load of sea lice, which burrow into fish and feed on skin, mucous and blood. Juvenile salmon she netted farther from the farms were largely lice-free.



*A worker checks the pen at the Englewood Packing Co. in Port McNeill, British Columbia. The Netting seen on the left keeps birds from sampling the fish. This is the final stop for the salmon before they are sucked through an underwater pipe onto a conveyor that brings the fish into the processing plant on Vancouver Island.*

Bud Graham, British Columbia's assistant deputy minister of agriculture, food and fisheries, called this a "unique phenomenon."

"We have not seen that before. We really don't understand it," he said. "We've not had sea lice problems in our waters, compared to Scotland and Ireland."

Salmon farmers point out that the sea louse exists in the wild. Their captive fish are unlikely hosts, the farmers say, because at the first sign of an outbreak, they add the pesticide emamectin benzoate to the feed.

Under Canadian rules, farmers must halt the use of pesticides 25 days before harvest to make sure all residues are flushed from the fish. If that's done, officials said, pesticides should pose no danger to consumers.

European health officials have debated whether there is any human health risk from synthetic pigment added to the feed to give farmed salmon their pink hue.

In the wild, salmon absorb carotenoid from eating pink krill. On the farm, they get canthaxanthin manufactured by Hoffman-La Roche. The pharmaceutical company distributes its trademarked SalmoFan, similar to paint store swatches, so fish farmers can choose among various shades.

Europeans are suspicious of canthaxanthin, which was linked to retinal damage in people when taken as a sunless tanning pill. The British banned its use as a tanning agent, but it's still available in the United States.

As for its use in animal feed, the European Commission scientific committee on animal nutrition issued a warning about the pigment and urged the industry to find an alternative. But in response, the British Food Standards Agency took the position that normal consumption of salmon poses no health risk. No government has banned the pigment from animal feed.

Scientists in the United States are far more concerned about a pair of preliminary studies — one in British Columbia and one in Great



*Salmon move along a conveyor that brings the fish into the Englewood Packing Co. in Port, McNeil, British Columbia. The salmon have their gills cut and are electrically stunned as they begin to move along the conveyor. The chilled water becomes foamy and turns pink as oxygen is released from the blood of the fish after their gills are cut.*

Britain — that showed farmed salmon accumulate more cancer-causing PCBs and toxic dioxins than wild salmon.

Scientists in the U.S. are trying to determine the extent of the contamination in salmon and what levels are safe for human consumption.

The culprit appears to be the salmon feed, which contains higher concentrations of fish oil — extracted from sardines, anchovies and other ground-up fish — than wild salmon normally consume. Man-made contaminants, PCBs and dioxins make their way into the ocean and are absorbed by marine life.

The pollutants accumulate in fat that is distilled into the concentrated fish oil, which, in turn, is a prime ingredient of the salmon feed.

Farmed salmon are far fatter than their wild cousins, although they do not contain as much of the beneficial omega-3 fatty acids.

The industry complains that environmental activists have misinterpreted the contaminant studies, needlessly frightening consumers.

"The concern is that people will stop eating fish," said Walling, of the British Columbia Salmon Farmers Assn. "Salmon is a healthy food choice. Our Canadian government says this is a safe food."

Environmentalists in British Columbia and Scotland recently launched campaigns urging consumers to boycott farmed salmon until the industry changes many of its practices.

At the least, they want the farms to switch to solid-walled pens with catch basins to

## RELATED ARTICLES

isolate farmed fish — and their diseases, pests and waste — from the environment. The ideal solution, they say, is to have the farmed stock raised in landlocked tanks.

Protests notwithstanding, the industry is expected to get a lot bigger. Demand for seafood is rising and will double by 2040, according to the U.N.'s Food and Agriculture Organization. Nearly half the world's wild fisheries are exhausted from overfishing, thus much of the supply will likely come from farmed seafood.

"Aquaculture is here to stay," said Rebecca Goldberg, a biologist who co-authored a report on the industry for the Pew Oceans Commission. "The challenge is to ensure that this young industry grows in a sustainable manner and does not cause serious ecological damage."



*Salmon on a conveyor is cleaned and gutted by a machine at the Englewood Packing processing plant on Vancouver Island.*

## Should You Eat Fish?

**Only when it's cooked like fish, not like steak.**

By Sara Dickerman  
March 12, 2003

I'm in the fifth year of my beluga boycott. Since the breakup of the U.S.S.R., it seems, Caspian sturgeon has been harvested to the extinction. So, I avoid imp (Actually, I avoid it unless I'm at a wedding where there's one of those icy caviar setups. Then I'll eat the beluga, just out of respect for the sturgeon.)

But what's a diner supposed to do about less precious seafood? The growing worldwide taste for seafood has run smack-dab into shrinking populations of wild fish, ham-fisted fishing techniques, international poaching, and environmental degradation. The main alternative to fishing the open ocean, fish farming, is fraught with complications: Vegetarian fish farming in tanks is seen as a great option for the environment, but farming salmon in the ocean creates enormous waste, and the mangy, lice-ridden farmed fish can escape and threaten wild salmon populations.

Eating and cooking fish have become political acts, but even the most bleeding-heart chefs and diners have a hard time sorting out which fish to serve and eat. Over the past five years, chefs have been asked by various environmental organizations to pledge not to serve problematic fish like swordfish, Chilean sea bass (actually Patagonian toothfish), and farmed salmon, as well as Caspian caviar. (It's even more confusing than the days of the on-again, off-again grape boycotts organized by César Chávez.)

Of course, listening to the average chef talk about fisheries management isn't pretty—not unlike hearing Sheryl Crow denounce the war on Iraq. In her



swordfishing memoir, Linda Greenlaw minced no words about chefs who signed on to the swordfish boycott. "In my opinion, little Chef Fancy Pants should work at perfecting his crème brulee and leave fisheries management to those who know more about swordfish than how to prepare it."

Greenlaw has a point: Chefs are trained to be epicures, not ethicists. But the food revolution of the past 30 years has made independent chefs into citizen consumers as much as kitchen technicians. It's in their interest, personal and commercial, to know where and how food has reached their kitchens. If it's a good story, they'll put it on the menu: grass-fed beef, free-range eggs, foraged greens. It helps sell food. The same holds true for seafood that's been harvested "artisanally": "diver's scallops" and "hook-and-line-caught cod," for example. But as with organic food, chefs are often selectively noble: They will stick to the environmentally correct option up to a certain price point.

Listing the provenance of seafood offerings has a certain tiresome virtue, but chefs can be even more effective in the kitchen than in their menu prose. One reason why we are depleting some stocks so rapidly is that we don't treat fish like fish. For this, blame both chefs and cagey consumers. Americans have long been wary about seafood. Fifty years ago, it was breaded and then frozen to help suspicious eaters forget about its origins.

Today, on the other hand, seafood is too often cooked and served like meat and chicken. Sole and trout, with their modest filets, used to be the standard restaurant fish, but these days, if a piscine can't yield a vast 6-ounce to 8-ounce serving, forget about it. Seared rare ahi is the steak-lover's fish—you could eat it with A-1 if you wanted. Chilean sea bass is the real chicken of

the sea, with mild flesh that can be loaded up with any number of undignified fruity sauces. I've even seen swordfish served with a bony handle, like a veal chop. And don't get me started on the teriyaki-slicked salmon that's invading chain restaurant menus.

Fish treated this way has lost touch with its fundamental fishness: It becomes a sort of briny tofu, a lower-fat stand-in for the missing meat. Even salmon farmers admit that their product is popular because it tastes less salmony than wild fish. It's the slow-growing sea giants—usually the most threatened fish—that are most vulnerable to the demand for massive chunks of mild, meaty fish.

Here is where chefs can make a difference; they can make customers try nearly anything. Ten years ago, no one would have imagined that beef cheeks and lamb tongues would be foxy items on the menus of chic urban bistros. Bony cuts like short ribs and oxtail used to be a bargain, and now their per-serving cost competes with roasts. I'm plugging for a similar revival in delicate, small-filleted fish, bony fish, and oily fish. From an aesthetic viewpoint, expanding a tiresome seafood repertoire is a chance to help Americans get over their seafood squeamishness—a job most cooks I know would relish. What's more, many of these fish live a rock 'n' roll life: They grow up fast, mate early, and die young, and thus they tend to be harder to deplete.

Right now I cook at a Basque-Spanish restaurant, and my chef, with great Iberian pride, imports fish I had never before handled: floppy eels, blushing red mullet, tiny cuttlefish that look exactly like space invaders, blue wings with iridescent butterfly fins. I don't know what the environmental organizations would say about these jet-setting fish, many of which don't land on their lists, but most customers dig the offbeat selection. They're willing to eat fish throats, fish livers, and whole fish whose

beady little eyes stare up from the plate. Those who can't be convinced to eat the unusual seafood turn to other parts of the menu. Which I'm sure is fine with the fish.



### Related on the Web

Outright boycotting is a hard sell, so environmental organizations have savvily responded to concerns about seafood by offering chefs and consumers downloadable seafood guides that grade fisheries on their sustainability. Here is one, a second one, and a third. The better guides are transparent about their sources and are updated frequently to accommodate rebounding fisheries as well as endangered ones. To see what seafood issues the government has been pursuing, visit NOAA. Some fishermen have other views about the environmental agenda.