

Sarah Bittleman

From: Birdsong, Jonathan
Sent: Friday, May 09, 2008 3:44 PM
To: Modaff, Pete; Miller, Ben; Levenshus, Jonathan; Whittlesey, Kevin; Brown, Susan Jane; Sarah Bittleman; Tillstrom, Nils; Benner, Janine; Dabbs, Michael; Steele, Josh; Phillips, Troy; Goedke, Jennifer; Trang, Eleen
Cc: Hunt, Ryan (Feinstein); john_watts@feinstein.senate.gov
Subject: !!!Salmon Disaster funds!!!
Attachments: FISHERIES_001_xml.pdf

Importance: High

I need to let you all know that the **Farm Bill** will include **\$170 million** in disaster funds for the commercial and recreational salmon fishing closure on the West Coast. Speaker Pelosi was able to get it in this bill. It is still up in the air what section it will be in, but the attached language is that we worked out with the committee. It essentially mirrors the language that was included in last year's emergency supplemental with the exception that recreational fishermen are identified as an eligible recipient.

You should also know that I've been notified by the Speaker's office that the Republican's may target this funding as unnecessary and inappropriate for the Farm Bill. They are under the impression that this benefits only Pelosi's district. I don't need to tell any of you that this is not the case. Please make sure your respective boss's are prepared to defend this disaster funding in the bill. I am collecting some anecdotal stories of hardship from fishing families all along the coast, and will get you that information as it comes in.

Thanks and please let me know if you have any questions or comments.

Jonathan Birdsong
Legislative Director for
Congressman Mike Thompson (CA-01)
231 Cannon House Office Building
Washington, DC 20515
(202) 225-3311
(202) 225-4335 - FAX
<http://mikethompson.house.gov/>

[DISCUSSION DRAFT]

1 **SEC. ____ . FISHERIES DISASTER ASSISTANCE.**

2 Of the funds of the Commodity Credit Corporation,
3 the Secretary of Agriculture shall transfer to the Secretary
4 of Commerce \$170,000,000 for fiscal year 2008 for the
5 National Marine Fisheries Service to distribute to com-
6 mercial and recreational members of the fishing commu-
7 nities affected by the salmon fishery failure in the States
8 of California, Oregon, and Washington designated under
9 section 312(a) of the Magnuson-Stevens Fishery Con-
10 servation and Management Act (16 U.S.C. 1861a(a)) on
11 May 1, 2008, in accordance with such section.

KLAMATH RIVER SALMON DISASTER FUNDS DISBURSEMENT

(As of February 20, 2008)

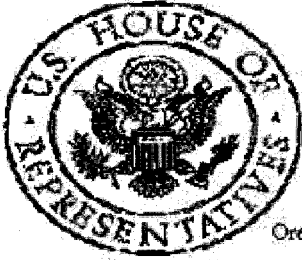
	Amounts Paid	# of Fishermen Paid
OREGON:		
Fishermen: Loss of Personal Income	\$10,675,818.47	494
Safety/Vessel Maintenance	3,293,307.24	500
Wholesale Fish Dealers	804,374.00	38
Business Owners	617,154.21	19
Outreach/Coordination (Port Specialists)	27,651.79	
Genetic Stock Identification	70,318.00	
Oregon Subtotal	\$15,488,623.71	

CALIFORNIA:		
Fishermen	\$15,742,081.47	
Lost Personal Income (LPI)		655
CA Resident License Reimbursement		1,055
Received both LPI and Resident License Reimbursement		578
Wholesale Fish Dealers/Processors	\$5,848,851.00	169
Business Owners	564,225.73	12
Commercial Charter Boats	904,812.86	28
Outreach/Coordination	116,951.32	
In-River: Outreach/Coordination	19,643.00	
Businesses	320,048.21	22
Genetic Stock Identification	70,673.59	
California Subtotal	\$23,587,287.18	

TOTAL DISBURSEMENT

\$39,075,910.89

(As of February 20, 2008)



News from Congresswoman Darlene Hooley

Oregon's 5th District • 2430 Rayburn HOB • Washington, DC 20515 • Toll Free: (888) 446-6539

Immediate Release
May 14, 2008

Contact: Joan Evans
202-226-8018

Representative Darlene Hooley Applauds Passage of \$170 Million for Disaster Relief for West Coast Salmon Fishers

Washington, D.C.—Today Representative Darlene Hooley (OR-5) voted for passage of the Farm Bill, including \$170 million for disaster relief for West Coast salmon fishers, for which Representative Hooley strongly advocated. The disaster, declared earlier this month, is the single largest fishery disaster to hit the West Coast, spanning the entire U.S. Pacific coast.

"Today Congress did what was necessary to preserve the future of our Pacific salmon fisheries," Hooley said. "The Farm Bill's provision of \$170 million for disaster assistance for West Coast salmon fisheries will provide much-needed relief for the families and communities affected by this disaster."

Farm Bill funding for salmon disaster relief covers fishers and fishing related-businesses along the West Coast, from Mexico to Canada, hit hard by the fisheries disaster. Typically, hundreds of thousands of fall Chinook salmon return to the Sacramento River each year to spawn. This year, scientists are estimating that fewer than 60,000 adult Chinook will return to the Sacramento River. It is this dramatic decrease in the salmon stock that has prompted the closure of the West Coast fisheries. This is the second salmon fisheries disaster declared on the West Coast in the last three years.

In addition to today's action, Representative Hooley previously led a number of other West Coast members in the effort to urge U.S. Secretary of Commerce Carlos Gutierrez to make the official disaster declaration in a timely manner. That declaration was made May 1, 2008.

Hooley will encourage swift passage by the Senate, and the President's signature, of the Farm Bill in an effort to get the funds to the fishing communities as soon as possible.

**OregonLive.com**

Everything Oregon

The Oregonian

Salmon closure hits Winchester Bay hard

The whole Oregon coast will feel the pinch of the broadest shutdown ever, but the sportfishing town is particularly dependent on salmon

Monday, May 12, 2008

SCOTT LEARN

The Oregonian

WINCHESTER BAY -- When Scott Howard was a boy, his dad ran charter boats out of Winchester Bay, tapping his only son first as a fish cleaner and, from age 15 on, as a deckhand all summer long.

His mom ran the Salmon Harbor Cafe on the waterfront, steps from the docks and the metal tables where long lines of tourists and sport anglers waited to clean their haul.

When he was older, Howard decided to run charter boats, too. Now he has three of them, worth \$160,000 total.

But this year, he has almost no salmon to catch.

The closure of nearly all ocean salmon fishing this year is the biggest hit to Oregon's coastal sportfishing in at least 15 years. Salmon are largely off limits for charter operators such as Howard -- and for sport anglers who bring their boats to the coast by the thousands, pumping millions of dollars into local businesses, from motels to taverns to tackle shops.

All told, the state projects \$22 million in losses to businesses that support recreational fishing, mostly in coastal towns. And that's on top of \$23 million in projected commercial fishing losses.

Howard, 44, feels the effects. "I'm still getting some calls and traffic," he says. "But I'm way down. And the bills keep coming."

Rocky reefs

Chinook salmon returns in the Sacramento River are projected to be far lower than normal this year, prompting federal regulators to shut down salmon fishing on the ocean from Cape Falcon, south of Astoria, to the Mexican border -- save for a small amount of coho salmon recreational fishing this summer. North of Cape Falcon, recreational salmon fishing is open but severely limited.

Winchester Bay will still draw tourists for prime crabbing, clamming, RV camping, lake and river fishing, and to the Oregon Dunes National Recreation Area. Like other coastal towns, it has diversified its attractions, holding an art fair, a crab bounty hunt, a car show and a chain-saw sculpting contest over the summer to bring visitors to town.

But this year, when it comes to ocean fishing, the town is in a particularly tough spot.

Last year, the state estimates, salmon accounted for less than a quarter of the sport catch in Garibaldi, Newport and Brookings, the other big recreational salmon ports in the closure area. With salmon counts low, the main catch was reef-dwelling rockfish, also known as red snapper, along with halibut and albacore.

The challenge for Winchester Bay, like Astoria and nearby Florence, is that its rocky reefs are mostly farther out in the ocean, beyond a 40-fathom line that is the cutoff for rockfish restrictions. Regulators began to limit the rockfish catch in the late 1990s because of concern about overfishing and depleted stocks in deeper water.

Last year, Newport's sport anglers landed about 8,500 salmon and nearly 70,000 rockfish. Winchester Bay's landed about 10,000 salmon, the state estimates -- and fewer than 100 rockfish. The rockfish number is probably an underestimate, Howard says, but it's a fair indication of the disparity.

"The places that are going to be hardest hit are places like Winchester Bay and Florence," says Eric Schindler, who leads the Oregon Department of Fish and Wildlife's ocean sampling project. "Really, that's what they do; they salmon fish."

Trip cancellations

Sportfishing groups and charter operators in other ports say the pain of the closure is spreading.

In part that's because the negative news leads some tourists to conclude that fishing is shut down across the board, increasing trip cancellations coastwide. The Northwest Sportfishing Industry Association says it's even hearing of closure-related trip cancellations on inland rivers with healthy stocks.

The salmon closure also is likely to spur more pursuit of rockfish, which could close that important season early if the catch hits regulatory ceilings.

Trey Carskadon, government affairs director for the sportfishing association, says his group has been trying to let anglers know there are plenty of fish to be caught this year. The ocean forecast includes sportfishing opportunities for rockfish, halibut, albacore and, starting June 22, a coho salmon season that will end Aug. 31, or earlier if a small 9,000-fish limit is reached.

But the long-term trend isn't good, Carskadon says.

Concerns about depleted stocks on the West Coast are multiplying, along with regulatory restrictions, even though the take from fishing is much lower than historical levels.

"On the one hand, we need to be cheerleaders. There are good fishing opportunities this summer," Carskadon says. "At the same time, we have to let people know that the resource is broken. These situations are becoming more frequent, more volatile, more widespread."

"Fishing all day long"

When Howard was a boy, at least a dozen charters operated out of the bay. "I grew up salmon fishing all day long," he says. "When I was a kid, all my friends would go to concerts and the lake all summer. I never did that."

Winchester Bay, where the Umpqua River meets the Pacific, is ideal for salmon, the locals say. The fish are usually available around the port's entrance buoys two miles from the dock, making for short, successful trips that keep customers happy and bring charter boats in quickly for the next load.

Howard and his wife, Casey, went into charter fishing after he graduated from college with a business degree, then had to bail out during the coho crisis of the mid-1990s. With jobs scarce on the coast, Howard worked as a car salesman, then got back into the business on rockfish, adding salmon when the restrictions loosened.

Chinook fishing took a strong turn up in 2001, though still well below historical levels. Scientists were optimistic about Sacramento River stocks. Then came this year's unexpected crash.

Howard figures he'll river-guide and ocean-fish in a smaller boat with less overhead this summer, even though that brings in far less revenue. He's let his skippers know they're out of work.

He wants to fish for a living the rest of his life, but he no longer can sink the money into boats and employees that his parents did, he says, "not with the uncertainty of the fisheries."

Effect on businesses

Salmon angler trips in the Coos Bay catch area, which includes Winchester Bay, dropped from 97,000 in 1980 to 23,000 last year, the state says.

"I almost feel ashamed that I'm in the shape I'm in," Howard says. "I grew up doing it. My parents did it before I was born, and they taught me everything they knew. I just haven't been able to weather this."

One of Howard's skippers, 23-year-old Alisha Hoile, will work in her father's general store just off U.S. 101, where she expects to see a drop in sales because of the salmon fishing closure.

Down the road, Kristy Benson, owner of Adrenalin Junkies Oasis Restaurant & Lounge, has cut hours for

her five employees and fears she won't make enough money this summer to stay open next winter.

Bill Karcher, owner of Sportsmen's Cannery & Smokehouse on the waterfront (and Howard's high school science teacher), is hoping for a strong albacore year, like last year. Otherwise, he says, "we'll be devastated."

The Howards have one child, 9-year-old Alec. Alec's favorite thing to do is fish, his dad says. But he also gets straight A's and likes playing baseball and the guitar. They live in Reedsport, four miles up the road and a great place to raise a child, the couple say.

Ideally, Howard says, Alec would go into medicine. "I just want him to have a lot of choices. I'm doing everything I can to make sure he doesn't follow in my footsteps."

Scott Learn: 503-294-7657; scottlearn@news.oregonian.com For environment news, go to oregonlive.com/environment

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Sarah Bittleman

From: Gilly Lyons [gilly@wildsalmon.org]
Sent: Friday, May 09, 2008 5:04 PM
To: Miranda, Michele (Wyden); Brown, Susan Jane; Sarah Bittleman; Girard, Jamie; Benner, Janine; Barbour, Hillary; Tillstrom, Nils; Marx, Stephen; Mahar-Piersma, Auke
Subject: NYT: Salmon Gone, Fishermen Try to Adapt on a Changing Coast

Hi there --

I thought you might be interested in this story from today's NY Times on the salmon closure, and specifically the impact it's having on Oregon's south coast (and elsewhere too). As you and your bosses know all too well, it's pretty depressing stuff...

Thanks,

Gilly

<http://www.nytimes.com/2008/05/09/us/09salmon.html>

May 9, 2008

Salmon Gone, Fishermen Try to Adapt on a Changing Coast

By WILLIAM YARDLEY

CHARLESTON, Ore. — So long, salmon. Steve Wilson is refitting his 51-foot troller to fish for the future. No longer will he cast for the conflicted symbol of Northwest abundance and bitterness. No more fishing for a myth.

His new pursuit?

“Prawns,” said Mr. Wilson, nearly bursting out laughing because, here in Salmon Nation, he could not quite believe things had come to this. “It’s what you call a ‘developmental fishery.’ We don’t know if we’ll make any money in it, but we figured we could either go broke sitting still or we could go broke working.”

With most of Oregon and California’s commercial salmon fishery shut down because of sharp declines in the number of the fish returning to the Sacramento River to spawn, Mr. Wilson and many other fishermen are looking for almost any alternative, trying to diversify along with the rest of the regional economy. In some cases, they are investing money they received from the federal government because of a partial shutdown of salmon fishing in 2006.

This year, the governors of the three West Coast states, citing what they say will be a \$290 million economic loss, have asked Congress to again provide disaster relief.

Mr. Wilson said he would spend at least \$15,000 to convert his boats. If the pursuit of prawns lacks the local lore of hooking Chinook salmon, at least it might pay. Prawns, Mr. Wilson noted, are something of an upper-crust crustacean, "for the high-end market, high-end restaurants."

That just happens to be the same market that is slowly making tourism and retirees as important as fishing and logging once were on the Oregon coast, even here on the remote and misty southwestern shore.

"You can't even find these around here," Mr. Wilson said as he and two crew members carried newly delivered traps out to his boat. "I've been talking to Canadian fishermen, been looking on the Internet. We've gone from not knowing anything about prawns to probably knowing more about prawns than anybody else on the southwest coast."

With the shutdown this year, a slow year in 2007 and the partial closing in 2006, salmon fishermen in Oregon and California are facing the third straight year of trying to find other ways to make a living in the summer. Some have gotten out of fishing altogether, while others have tried to stretch out the winter crab season or go after typically less reliable and profitable black cod or tuna. Farther up the coast, in Newport, Ore., some plan to plow north to near the Washington border, where a very limited salmon season has just opened. Still others say they will head to Alaska.

In a strong season, a top-performing salmon fisherman might gross as much as \$100,000. But the forecast for next year is dim, too, and questions over ocean temperatures, the health of Northwest rivers, environmental restrictions and disputes over water rights make some fishermen and economists question what kind of future commercial salmon fishing has here.

While recreational fishing has held relatively steady, the number of commercial salmon boats bringing in significant catches has shrunk. Of the 1,200 or so boats licensed to fish for salmon in Oregon, only about 150 have caught more than \$30,000 worth of salmon each year in the decade before 2006, according to Hans Radtke, an economist who analyzes commercial fishing in Oregon.

"As a producing commodity for salmon, we haven't been there for 20 or 30 years, and it's not going to be there," Mr. Radtke said.

Unlike in 2006, when the partial shutdown affected only commercial fishermen, the shutdown this year also applies to recreational fishermen. Here in Charleston and the rest of the southwestern coast, there is particular uncertainty as the region faces a familiar Northwest struggle. As commercial fishing has steadily declined, logging has plummeted because of environmental fights and market changes. Small one-industry towns ache for renewal.

The small port town of Bandon has remade itself as a tourism destination, with big houses built high on oceanfront cliffs and a golf course in the dunes. Over in Coos Bay, an old lumber mill has been converted to an Indian casino, the Mill.

Yet wages in the new economy are much lower than they were in fishing and logging, economists said, even as housing, gasoline and grocery prices have risen. And unlike some coastal areas to the north in Oregon, the southwestern coast, however stunning, is several hours from any major population center, much less an affluent one.

“We like to say that one of our strong points is that we’re rural and remote and one of our curses is that we’re rural and remote,” said Les Cohen, head of the Chamber of Commerce in Brookings, just north of the California border.

Mr. Cohen said the region had been successful at drawing a mix of retirees, owners of recreation vehicles and eco-tourists. He noted, too, that other kinds of recreational fishing are still allowed in the ocean this summer.

But with gasoline prices high and the housing market in trouble, Mr. Cohen said, news of the salmon shutdown “was like, ‘Oh, my God, how much can happen?’”

The shutdown in recreational salmon fishing has hurt marine supply shops, charter boats, hotels and restaurants that cater to fishing tourists.

Since late last summer, nearly \$60 million in federal money has been dispensed to about 1,200 fishermen in Oregon and California, an unprecedented payout, according to Randy Fisher, executive director of the Pacific States Marine Fisheries Commission, which administered the program. The direct payments have ranged from a few thousand dollars to more than \$60,000 in some cases.

The payments, while welcome, have also stirred tension, with some fishermen upset that generally only boat owners received the money.

While the money helped some fishermen, like Mr. Wilson, invest in other endeavors, others invested in salmon fishing gear only to have the 2008 season shut down.

Adding what many say is a cruel extra kick, the Oregon Department of Fish and Wildlife is proposing to raise the cost of commercial fishing licenses, to \$350 from \$200.

“We’ve got to have something to pay it with,” one longtime fisherman, Paul Merz, said at a recent meeting in Coos Bay where state officials outlined the proposal. “My wallet’s empty.”

The Register-Guard: *CityRegion: City/Region*

Fishermen to receive disaster assistance

By Winston Ross

The Register-Guard

Published: May 2, 2008 12:00AM

Perhaps to blunt the news of an unprecedented salmon fishery closure along the West Coast, the federal government paired its announcement of a final decision on this year's salmon season Thursday with a heartening dispatch: The fleet can expect tens of millions, if not hundreds of millions, of dollars in disaster assistance this year.

U.S. Secretary of Commerce Carlos Gutierrez declared a commercial fishing failure and fishery resource disaster for ocean salmon fishing off the coasts of Oregon, Washington and California, which allows Congress to appropriate direct aid to the fleet and other affected businesses, depending on how much cash is made available.

The exact figure could range anywhere from \$61 million — federal officials' estimate of the direct losses the three states can expect without a salmon season this year — to \$289 million, the amount requested by those states after factoring in ripple effects to tackle shops and other related businesses along the coast.

What number Congress arrives at will depend on what Northwest lawmakers can convince their colleagues is reasonable, said Sen. Gordon Smith, R-Ore. Oregon has asked for \$45 million.

"The six senators from the affected states are of one mind on this," Smith said. "Beyond that, we have to go with the support of our colleagues."

The first shot at an actual appropriation comes with Congress' consideration of a supplemental appropriations bill to fund the ongoing Iraq war, which is how \$60 million in disaster funds won approval in 2006.

The White House is opposed to adding spending unrelated to war spending to the bill, Smith said.

"This is a federal government declaration, and there is therefore a federal government obligation," he said.

"(The Iraq war bill) is the next vehicle leaving the station, but there's going to be a lot of pressure to keep anything unrelated to the war out of that."

The disaster declaration was welcome news to 29-year-old Stuart Schuttpelz, a

Charleston troller who took out a \$160,000 loan to buy a salmon boat in 2005 after fishing with his father in Alaska for the previous 10 years.

Schuttpelz said he wanted to stay closer to home to spend more time with his three young children.

Soon after Schuttpelz's gamble, however, salmon stocks on the Klamath River collapsed, and now that they're on the mend, the lowest returns in the history of the bigger, more important Sacramento River have crippled the region's fishery.

Meager returns from Dungeness crab and tuna won't make up for the salmon losses or cover the \$22,000 mortgage payment due in September, Schuttpelz said.

"I had to refinance the loan just to afford refrigeration this year," Schuttpelz said.

In 2006, he made the mortgage payment with help from a \$29,000 assistance payment from that year's disaster declaration, which is the only reason he is still in business, he said.

"I really couldn't imagine not getting financial aid," Schuttpelz said. "It's not a hurricane; we didn't get our houses blown down, but we legitimately don't have jobs, because of the lack of salmon."

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Congress of the United States

Washington, DC 20515

April 18, 2008

The Honorable Carlos M. Gutierrez
Secretary
Department of Commerce
140 1 Constitution Ave, NW
Washington, D.C. 20230

Dear Secretary Gutierrez:

The Pacific Marine Fisheries Council (PMFC) has made their historic formal recommendations on the 2008 season of the West Coast salmon for the single largest salmon fishery closure ever. We request you immediately declare a "fishery failure" for the region.

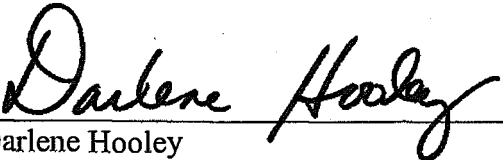
The fall Chinook run on the Sacramento River is the driver for salmon fisheries off of the West Coast. While their returns have historically supported a catch of more than 800,000 Chinook, this year's class of returning adults is projected to fall to below 60,000 fish. This return, a record breaking low, has prompted the PMFC to take the drastic step of recommending a near total closure of the commercial and recreational fisheries.

The West Coast salmon fisheries infuse our state economies with millions of dollars. Clearly, that revenue is lost this year and the effects of this economic loss will reverberate through our economies for years to come.

We are working closely with our Governors to determine the full extent of the economic emergency in our states but without your emergency declaration our work is stymied. We ask that you also work with the Governors from the affected states to assess the impacts and declare a "fishery failure" pursuant to your authority under section 312(a) of the Magnuson-Stevens Fishery Conservation and Management Act. This declaration will provide the official authorization needed for Congress to provide disaster assistance for affected communities.

We thank you for your attention to this matter and hope to work closely with you in the coming months to ensure an appropriate federal response to this devastating closure.

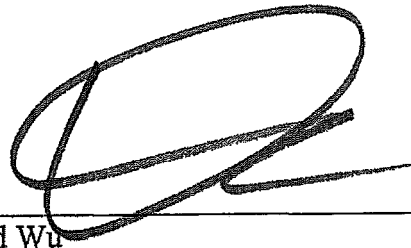
Sincerely,


Darlene Hooley
Member of Congress


Mike Thompson
Member of Congress



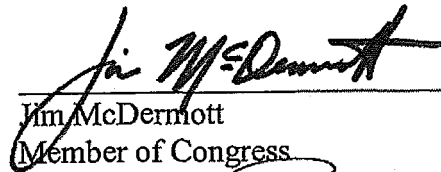
Peter DeFazio
Member of Congress



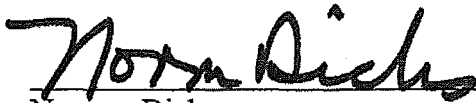
David Wu
Member of Congress



Earl Blumenauer
Member of Congress



Jim McDermott
Member of Congress



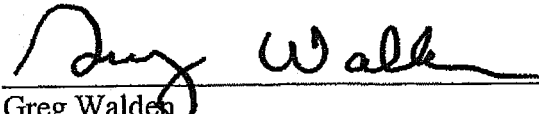
Norman Dicks
Member of Congress



Anna Eshoo
Member of Congress



Lynn Woolsey
Member of Congress



Greg Walden
Member of Congress

Congress of the United States
Washington, DC 20515

April 18, 2008

The Honorable Nancy Pelosi
Speaker of the House
H232, The Capitol
Washington, DC 20515

Dear Speaker Pelosi:

The imminent closure of the commercial and recreational Chinook salmon seasons in California and Oregon will seriously exacerbate the economic crisis currently facing these industries in our districts. We seek your assistance in providing these states with much-needed emergency disaster funding in the upcoming emergency supplemental appropriations bill.

On April 10th 2008, the Pacific Fishery Management Council (PFMC) recommended closing both the commercial and recreational fishing seasons of Chinook salmon for California and Oregon. *This is the single largest closure ever recommended by PFMC.* They did this because Chinook salmon returning to the Sacramento River system – considered the “driver” of wild salmon stocks in the continental U.S. – have reached historic lows. In 2006, an estimated 800,000 Chinook salmon returned to the Sacramento River system; but this year, PFMC estimates that less than 90,000 salmon will return.

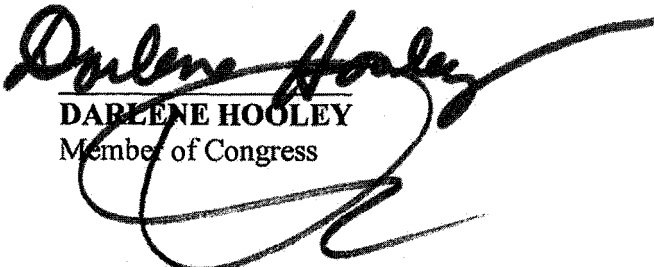
The State's of California and Oregon are compiling their economic impact estimates on the closure and we should have final numbers by Monday, April 21st. As the State's process these estimates, we respectfully request your assistance in including emergency disaster funding for these communities in the emergency supplemental appropriations bill.

Thank you in advance for your time and assistance.

Sincerely,



MIKE THOMPSON
Member of Congress

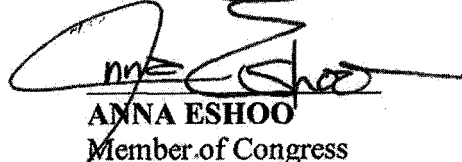


DARLENE HOOLEY
Member of Congress

DAVID WU
Member of Congress



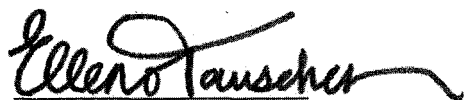
PETER DeFAZIO
Member of Congress

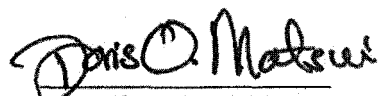


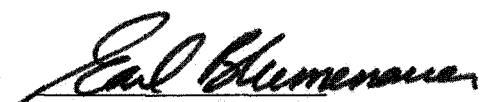
ANNA ESHOO
Member of Congress

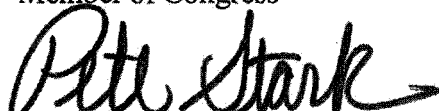


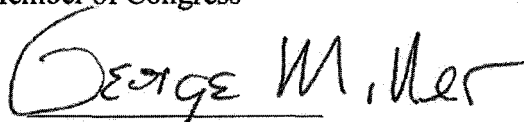
LOIS CAPPS
Member of Congress


ELLEN TAUSCHER
Member of Congress


DORIS O. MATSUI
Member of Congress


EARL BLUMENAUER
Member of Congress


PETE STARK
Member of Congress


GEORGE MILLER
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LYNN WOOLSEY
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GRACE NAPOLITANO
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WASHINGTON

April 21, 2008

The Honorable Nancy Pelosi
Speaker of the House
U.S. House of Representatives
Washington, DC 20515

Dear Madam Speaker,

As you are no doubt aware, the Sacramento River fall Chinook salmon population has been decimated, resulting for the first time in history in a Pacific Fisheries Management Council recommendation to close commercial and recreational fishing for this species. Additionally, populations of Columbia River Chinook and Coho are near record-low levels, and the Council has also significantly reduced fishing for these species. The economic impact on our three states totals \$290 million and includes the loss of more than 4,200 jobs.

As the federally designated conservation thresholds will not be met this year, our states have also taken action to eliminate recreational salmon fishing for this species in state waters. California has further had to eliminate inland recreational fishing in the Sacramento River system. This is a West Coast-wide issue, and our three states are united in working with you on behalf of our fishing communities.

These closures and reductions have had a catastrophic effect on both commercial and recreational fishermen and women, and the people, businesses and communities that they support. As a result, we have requested that Commerce Secretary Gutierrez declare a federal fishery resource disaster pursuant to Section 308(d) of the Interjurisdictional Fisheries Act of 1986, and a commercial fishery failure under Section 312a of the Magnuson-Stevens Fishery Conservation and Management Act of 1976.

Due to the particularly difficult impacts resulting from this closure in the State of California, the state has declared a state of emergency likely to exceed the capabilities of California to handle. Similarly, earlier this month Oregon declared a state of emergency in anticipation of the severe economic impacts of the closure on coastal counties. Oregon and Washington have also mobilized state agencies to work with the affected individuals and businesses to ensure that vital economic assistance reaches them.

We turn to you now for assistance in obtaining emergency appropriations to help our states address this economic emergency. We cannot sustain the affected families, businesses or communities without this much-needed federal support.

The Honorable Nancy Pelosi
April 21, 2008
Page two

Thank you very much for your help in addressing this very significant issue for our states. Please do not hesitate to contact any one of us if you require additional information or our further assistance in meeting this request.

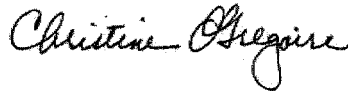
Sincerely,



Arnold Schwarzenegger
Governor of California



Theodore R. Kulongoski
Governor of Oregon



Christine O. Gregoire
Governor of Washington

cc: Members of the California Congressional Delegation
Members of the Oregon Congressional Delegation
Members of the Washington Congressional Delegation

Testimony of Richard Pool
Before the Sub Committee on Fisheries, Wildlife and Oceans
May, 15, 2008

My name is Richard Pool. I appreciate the opportunity to appear before this committee to discuss fishery issues. I also want to express appreciation for the leadership the committee is demonstrating in attempting to find answers to the severe fishery crisis now unfolding in California and the states of Oregon, Washington and Alaska.

I am here today representing my company, Pro-Troll Fishing Products which is a large producer of salmon fishing equipment. I am also representing The American Sportfishing Association (ASA) which is the National Trade Association that represents the sport fishing industry. Pro-Troll is headquartered in Concord California and ASA is headquartered in Alexandria Virginia.

I would like to discuss three subjects:

1. The collapse of the Central Valley salmon stocks as viewed by fishermen and our industry.
2. The economics of the West Coast sport fishing industry and the impact of the salmon closure.
3. The kinds of actions we believe are needed to recover these fish.

The Salmon Collapse

California faces an unprecedented collapse of its Central Valley Chinook salmon runs. We rank this as one of the top ten man-made fishery disasters in the country. The economic consequences of the loss are staggering and reach all the way to Alaska. We believe history will rank this disaster in the same category as the Exxon Valdez, the collapse of the New England Cod Fishery and the collapse of the Atlantic Striped Bass fishery in the 1980's. The steps leading to the collapse have been progressing for years but fishermen, biologists and environmental groups have been unable to impact the policies that could have prevented it. The disaster is now upon us. Unfortunately, now, there are no quick and easy fixes.

I have attached a chart called "The Rise and Fall of the Central Valley Chinook Salmon Returns". It summarizes the factors we see as the major contributors to the collapse. The chart shows the total number of Chinook salmon that returned to the Central valley by year. It starts in 1990 when the returns of the Winter Run

salmon became so low it was listed under the Federal Endangered Species Act. The Winter Run is one of four separate salmon sub species that return to the Sacramento River to spawn. At the time it was listed, it was virtually extinct. In 1992 only 191 Winter Run spawners returned to the Upper Sacramento River.

Following the listing, The National Marine Fisheries Service supported by the other agencies implemented a highly successful Winter Run Recovery Program. Four major projects costing \$1 billion were implemented in the Sacramento River. The projects not only helped the Winter Run but also dramatically improved the other three runs. Salmon responded as they will when their habitat is right and by 2002 - 780,000 spawners from all four Sacramento runs returned. It appeared we had a major success story.

Unfortunately, after 2002, the delta collapse took over. Increased export pumping and river flow management for exports rather than for fish along with badly polluted delta waters took a heavy toll on salmon. The graph shows the crash starting after 2002 with the final poor ocean conditions of 2005 and 2006 wiping out the balance of the weakened runs. There are two major conclusions to this graph.

1. The rapid rise from 1992 shows that given good habitat conditions, salmon can recovery quickly. If we do the right things, this pattern can be repeated.
2. The crash started well before the problem with ocean conditions in 2005 and 2006.

My second chart shows the decline of other species of fish which reside in the delta. In every instance the decline is dramatic. Unlike salmon, most of these fish do not migrate to the ocean. This is strong evidence that the primary fishery problems are associated with the delta. Over pumping, harmful water movements and pollution have taken their toll.

Fishermen concur that there were several factors that led to the salmon collapse. However, we believe the evidence is overpowering that the excess delta pumping is the leading cause of the decline. Heavy pumping and the associated detrimental water movements cause many other problems with river flows and temperatures that are harmful to salmon. We believe the salmon can be recovered but it will not be easy or inexpensive. The runs are now so low and the collapse is so complete that every run of Central Valley salmon could now be a candidate for Endangered Species listing.

The Economics of California Sportfishing

Fishing is huge in California. There are 2.4 million recreational fishermen in the state. Each year they spend \$2.7 billion in equipment purchases. The full economic impact of the activity is \$4.8 billion. The industry supports 41,000 jobs and pays \$1.6 billion in wages and salaries.

California has been second only to Florida in fishing equipment purchases. Salmon and Striped Bass are the top economic generators in the bay, coastal and Central Valley regions of the state. The loss of these fisheries will bite heavily into these economics. Hardest hit will be coastal communities and small river communities that depend on income from salmon, steelhead and striped bass. Lodges, camps, restaurants, tackle shops, marinas, guides and charter operators will all lose substantial income. It is already happening. Scores of businesses have already failed and many others are barely hanging on.

I am aware of six major fishing tackle retailers in Northern California who are already calling it quits. Every major city is being hit from Sacramento to The Bay Area to San Jose and Santa Cruz. I can also speak for my own company. As a major salmon equipment producer we are in serious economic distress. We have been in business for 30 years and have never seen the kinds of sales drops we are currently experiencing.

The Economics of California Boating

Closely paralleling the economics of fishing is the Boating and Marine Industry. There are 894,000 registered boats in California. 70% of boat purchases are for fishing. Sales of boats in 2006 were \$1.2 billion and there are 83 boat manufacturers in the state. Salmon fishing requires a boat. Manufacturers and boat dealers are already reporting dramatic drops in sales. There will be huge economic losses in this sector.

I recently received a report from a sales group representing multiple boat lines in the 13 Western states. Two years ago their sales were \$60 million. In 2008 they expect \$32 to \$34 million. They attribute most of this drop to the salmon closure. Sales of offshore boats and river fishing boats are at a near standstill. One major boat dealer has already closed its doors and many more are teetering on the brink.

The following tables show the combined economics for California, Washington, Oregon and Idaho. The figures show that recreational fishing is a huge economic generator in the West.

West Coast Sport Fishing

	Millions of Fishermen	Billions in Equipment Purchases	Billions Economic Impact	Billions Wages & Salaries	Jobs
California	2.4	\$2.7	\$4.8	\$1.6	41,000
Washington	.7	1.0	1.7	.5	15,000
Oregon	.6	.6	1.0	.3	11,000
Idaho	.4	.3	.5	.2	6,000
Total	4.1	\$4.6	\$8.0	\$2.6	73,000

If sport fishing in the U.S. were ranked as a corporation, it would be #47 on the 2007 Fortune 500 list based on sales. That's well ahead of global giants such as Microsoft and Time Warner..

West Coast Marine Industry

	Boat Registrations	Billions Sales 2006	Boat Builders	Employees	Marinas
California	894,000	\$1.2	83	8,000	624
Washington	271,000	.6	70		343
Oregon	186,000	.3	35		141
Total	1,351,000	\$2.1	188		1,108

Water4Fish.org Advocacy Website

As California moved into the 21st century it became obvious to fishing leaders that the politics of water had changed radically. The corporate agricultural interests were demanding more and more water and they had the political muscle to get it. No costs were spared in political contributions, high paid lobbyists and teams of lawyers. The state and fishery agencies lost control of their ability to protect and enhance fisheries and the water agencies became more aggressive. Exceptions to laws were found and biological opinions were overruled to allow more water pumping. The largest salmon kill in history took place on the Klamath River in 2002 because of a ruling that took the flows away from salmon and steelhead.

In early 2007 a decision was made. The only way fishermen could fight back and represent themselves was to get organized politically. A website Water4Fish.org was established and petitions were developed asking our political leaders to

change water policies to protect fish. Over 100 major fishing groups and fishing business immediately signed on as sponsors of the campaign. When a fisherman or supporter signs onto the website, his name, address, email and political representatives are captured in a database. He can then send email letters to the governor, his Sacramento legislators and to congress

The campaign has been a success. As of the end of April a total of 56,574 letters and petitions have been generated.

15,532 have gone to the Governor
17,954 have gone to members of the House
16,022 have gone to Senators Feinstein and Boxer
17,573 have gone to the California Assembly
17,205 have gone to the California Senate

Supporters from all corners of the state have logged into the database. It is now the largest database of fishermen in the state. At the current rate we will have 100,000 signers by year's end. These fishermen are mad as hell and they have every right to be. Through no fault of their own, their heritage and rights to a public resource has been taken away.

What Fishermen Need from NOAA

Fishermen look to NOAA and the other fishery agencies for the policies and leadership needed to protect and enhance the fisheries. In the Central Valley salmon recovery of the 1990's, NOAA led the way. We highly commend the agency for its leadership at that time. An excellent recovery plan was developed, the proper permit requirements were put in place and the right projects were implemented. The payoff to the fishery and to the economies of California and the other West Coast states was huge.

The failures of NOAA since that time have been well documented by the collapse of the salmon fishery and the court decisions. Fishermen now look to NOAA to reverse these disasters and once again lead a recovery. We need strong NOAA directives in the Central Valley and we also need them on the Klamath River, the Columbia River and The Snake River where the runs have also collapsed. We need:

1. New biological opinions based on solid science, the full extent of the law and the current conditions of the fisheries. They should include rigid and enforceable permit requirements that will rebuild the stocks and avoid technicalities that would allow other interests to avoid compliance.

2. The biological opinions should not be shortcut. They need to be complete, well reviewed and comprehensive. They must stand up in court. If more time is needed to accomplish this, it should be granted.

3. The preponderance of science should dictate the actions. Weak maybes of secondary causes should not be a basis for no action. We believe that NOAA and the other fishery agencies are the proper place for fisheries management rather than the courts.

4. A strong recovery plan is needed for each watershed that not only focuses on endangered species but on all the runs that have collapsed. NOAA has the responsibility and obligation to protect all marine species.

We are deeply concerned about the NOAA resource capabilities to do this job particularly in the Southwest Region. The rapid and complete collapse of the Central Valley salmon and the complex nature of the problem have placed a huge burden on this region. We strongly support increased staffing and funding for this region. We look to congress to help see that the resources needed are made available to the Southwest office.

We are also concerned about the pending biological opinion for the Klamath River. We remain optimistic that the four dams currently blocking the migration paths will be removed but it may take 10 to 15 years for this to take place. In the meantime the endangered fish of the river must be protected from disease and lethal water conditions. We urge a strong opinion from NOAA that will ensure these fish have adequate water flows and habitat to survive under normal and drought conditions.

Proposed Recovery Actions

We believe that if a number of immediate steps are taken, a salmon fishing season is potentially possible again by 2010. Some of the steps are short range and some are longer. Substantial funding will be needed. We urge the committee to support these steps and others that will emerge as further studies are made. The steps are:

Take Emergency Recovery Steps to allow a salmon fishing season in 2010

There are so few fish currently in the ocean that no meaningful salmon fishing can occur in 2008 or likely in 2009. If several emergency steps are taken to get 2008 smolts to the ocean, it may be possible to have a season on two-year old fish in 2010.

Emergency Trucking of All Hatchery Salmon around the Delta starting in 2008 & 2009

This project could save the 2010 season. With the losses occurring in the delta, if hatchery fish are trucked around the delta to the bay and then held in adapting pens, survival rates can be improved by 5 to 1. This was recently proposed to The Calif. Dept. of Fish and Game and the agency agreed. The trucking of all state hatchery fish was started the week of April 7th. A parallel plan for the Federal Coleman hatchery fish is underway.

Reduce Delta Pumping and Increase Pulse Flows for All Outbound Smolt Migrations. Start in 2008 & 2009

Pumping schedules need radical changes. Currently, adjustments are sometimes made for endangered fish but other runs like the large fall run, which has been the backbone of the salmon fishery, suffer from poor flows and water conditions. Water managers have access to very good real time information as to when endangered and other fish are in the delta in large numbers and thus can and should be ordered to reduce or stop the pumping until the fish can move by. Secondly: The pumps are so powerful that they reverse the natural stream flows of the delta which are needed by juvenile salmon to get from the river to the sea. Current practice includes releasing small amounts of pulse flow water to help flush these young salmon safely out to sea but these pulses are too small to get the job done. They need to be longer in duration.

Close The Delta Cross Channel Gates During All Downstream Migrations. Start in 2008 & 2009

The cross channel is a man-made channel dug into the delta to facilitate the flow of water directly to the pumps. Young salmon are very susceptible to being pulled off course into the cross channel which usually results in their death. Closing the cross channel gates has been a major help to endangered species to keep them from being sucked out of the Sacramento River into the central delta to perish in sterile waters with no protective habitat. Closing the gates during all smolt migrations will have an immediate highly beneficial result in getting more fish to the ocean.

Install State of the Art Fish Salvage at the Delta Pumps

Fish of all species that bypass the louvers at the state and federal pumps are captured and held in tanks. Periodically the tanks are emptied into trucks and are hauled and dumped in the North delta. Survival could be dramatically improved with better handling and the use of adapting pens at the dumping sites. The small

fish are currently dumped in a highly stressed and weakened condition. Predator fish and birds kill a high percentage. Many of these fish are endangered species. The minor costs of doing this job right are insignificant in terms of the potential benefits to survival.

Develop a Longer Term Comprehensive Salmon Recovery Plan

Longer term plans are needed. There are hundreds of projects that can repair habitat, open new habitat, improve survival, improve water quality and allow better up and down stream migration. The fishery groups have a list and so do the fishery agencies. State and federal leadership is needed to see that these projects are set in priority, funded and implemented. One example is the retirement of the Red Bluff diversion dam with screened pumping installed as a replacement. Another is the removal of barriers blocking access to 32 miles of spawning grounds on Battle Creek on the upper Sacramento River. Early estimates indicate that up to a billion dollars will be required to implement the critical projects.

Require Full Mitigation for all Direct and Indirect losses at the state and federal pumps

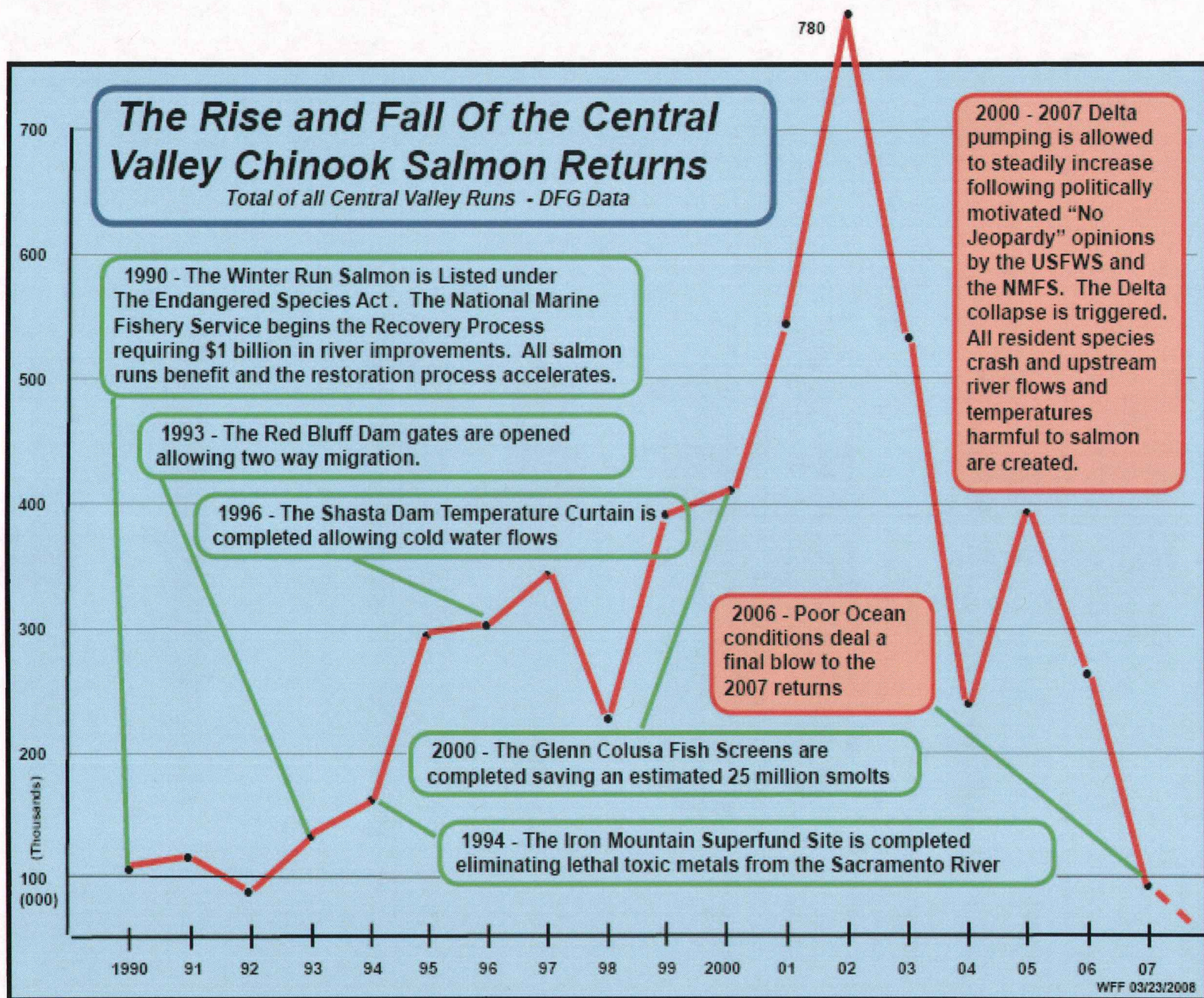
This action is long overdue. There is no question that the state and federal water projects have been destroying millions of game and non-game species annually for fifty years. When viewed from a cumulative perspective, this impact is a major factor in the decline of the Central Valley fisheries. There has been very little successful mitigation for the losses they created. The state provided some mitigation but only for direct losses of salmon, steelhead and striped bass. The federal pumps mitigated for direct losses for a few years but then withdrew from their written agreement with California Department of Fish and Game. Neither the state nor the federal pumps have ever mitigated for indirect losses. Indirect losses are fish that perish because they are pulled out of their normal migration paths and perish before they get to the pumping plants. Many biologists believe that indirect losses far exceed the direct losses. Mitigation funding used properly for habitat and water flow improvements, could go a long way towards the recovery of many species as was originally intended by the Central Valley Project Improvement Act. The California Assembly has a bill in process, AB1806, which would require mitigation for direct and indirect fishery losses caused by the operation of the by the state and federal Water Projects. The bill has passed the Water Parks and Wildlife Committee and is now at the Appropriations Committee for consideration. This action needs federal support and a possible parallel federal bill.

Remove 4 Klamath River Dams

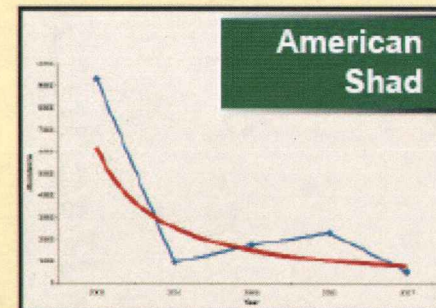
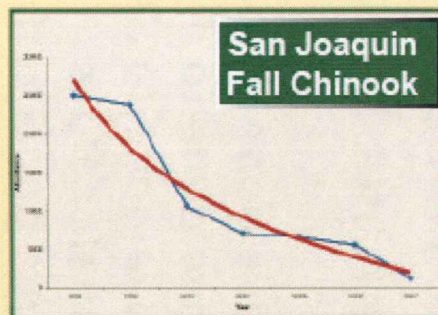
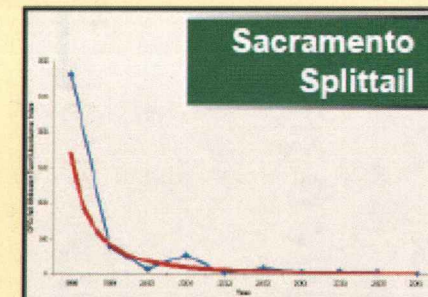
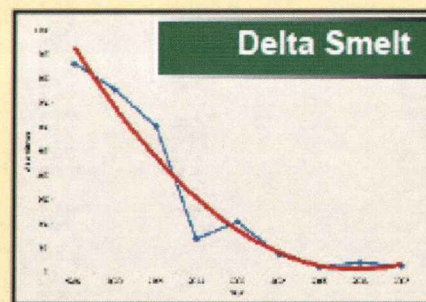
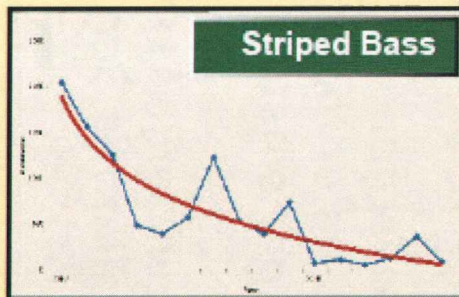
The Klamath River remains a salmon disaster. The fishery agencies, and virtually every fishery and tribal group agree that the best fishery solution and economic solution is the removal of four dams on the river. Continued state and federal leadership is needed to bring this about. In the meantime firm biological opinions are needed to see that the endangered fish in the river can survive until the dams are gone.

Install State of the Art Screening at the Delta Pumps

Hundreds of thousands of fish currently perish at the state and federal pumps. Some are salvaged and subsequently die and others are pulled through the louvers and perish in the canals. These pumps are crucial to future California water deliveries with or without a peripheral canal. The final answer is to separate the fish from the water with modern screens and solve the problem once and for all. Fish screens do this all over the world. The current louvers are archaic in terms of the current state of the art. They should be replaced with state of the art screens like those successfully operating at the GCID and Contra Costa water diversions.



Sacramento-San Joaquin Delta Fish Species



All Species of Small Fish in the Delta have crashed during the period of Increased Pumping



*Targeting California's
Water Management*



Water4Fish.org Website

- ***A Grassroots Political Action Program***
- ***The Only Recourse for Fishermen is to Organize***
- ***Letters are Sent to Political Leaders***
- ***Results – To date 56,574 letters and petitions have been sent to legislators***

15,532 have gone to the Governor

17,954 have gone to members of the House

***16,022 have gone to Senator Feinstein and
Senator Boxer***

17,573 have gone to the California Assembly

17,205 have gone to the California Senate

The Economics of Sportfishing in California

Fishing

<i>Fishermen</i>	<i>2.4 million</i>
<i>Annual Equipment Expenditures</i>	<i>\$2.7 billion</i>
<i>Full Economic Impact</i>	<i>\$4.8 billion</i>
<i>Wages and Salaries</i>	<i>\$1.6 billion</i>
<i>Jobs</i>	<i>41,000</i>

California has traditionally been second only to Florida in the purchase of fishing equipment

Boating and Marine

<i>Boat Registrations</i>	<i>894,000</i>
<i>Boats used for Fishing 70%</i>	<i>625,000</i>
<i>Boat and Marine Sales 2006</i>	<i>\$1.2 billion</i>
<i>Full Economic Impact</i>	<i>\$16.5 billion</i>
<i>Boat Builders in Calif.</i>	<i>83</i>
<i>Marinas in Calif.</i>	<i>624</i>
<i>Jobs related to Marine Industry</i>	<i>300,000</i>

California has the second highest number of registered boats in the nation

**WRITTEN TESTIMONY OF
RODNEY R. McINNIS
SOUTHWEST REGIONAL ADMINISTRATOR
NATIONAL MARINE FISHERIES SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE**

**BEFORE THE
COMMITTEE ON NATURAL RESOURCES
SUBCOMMITTEE ON FISHERIES, WILDLIFE AND OCEANS**

MAY 15, 2008

Good morning Madam Chairwoman and members of the Subcommittee. My name is Rodney McInnis, and I am the Regional Administrator for the Southwest Region of the National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration. Thank you for the opportunity to testify on the West Coast salmon fishery disaster and the actions being taken by NMFS to identify and address the causes of that disaster, as well as our actions to improve salmon survival in their freshwater environment. Your invitation to testify identified three major areas of particular interest: (1) the reasons for the collapse of the West Coast salmon fishery; (2) the state of science behind the court-determined inadequate biological opinions on the Sacramento, Klamath, and Columbia/Snake Rivers; and (3) linkages between river and fisheries management under the auspices of both the Endangered Species Act (ESA) and the Magnuson-Stevens Act. I will address each of these areas in turn.

REASONS FOR THE COLLAPSE OF THE WEST COAST SALMON FISHERY

The West Coast ocean salmon fishery is regulated according to the provisions of a fishery management plan (plan) developed by the Pacific Fishery Management Council and approved by the Secretary of Commerce. The plan calls for fishing seasons and quotas for the ocean salmon fisheries to be set annually based on the availability of salmon for harvest. To determine the number of salmon available for harvest each year, abundance forecasts made in February are compared to the number of spawning salmon deemed necessary under the plan to provide for the next generation. Abundance forecasts for 2008 were generally very low along the entire West Coast.

The most problematic forecast for the ocean fisheries was for California Central Valley fall-run Chinook salmon return in 2008. Absent any fishing in the ocean or in the rivers, the number of spawners expected to return to the Central Valley is one-third to one-half the number required to meet the spawning goal. The abundance of spawners is forecast to be fewer than 60,000 fish compared with the goal range of 122,000 to 180,000 fish. As recently as 2002, nearly 800,000 fall Chinook returned to the Central Valley. Commercial and recreational salmon fisheries in the ocean off Oregon and California

depend very heavily on the fall run of Central Valley Chinook, as this run accounts for as much as 80 to 90 percent of the catch off these two states. Because of the low abundance of fall Chinook and the great dependence of the ocean fisheries on this run, the Council recommended a complete closure of the ocean commercial salmon fisheries from near the Columbia River south to the Mexican border to protect spawners for future reproduction. The only recreational fishery recommended to be open for this area is a small fishery off Oregon targeted on hatchery-produced coho salmon. On May 1, NMFS approved and implemented these recommendations. At the same time, the Secretary of Commerce determined that there is a resource disaster and a commercial fishery failure under the Magnuson-Stevens and the Interjurisdictional Fisheries Acts due to the extremely low abundance of fall Chinook which, even if fishing were allowed, would result in severe economic impacts.

NMFS scientists conducted a preliminary inquiry into the potential causes for the sudden low population levels of Central Valley fall Chinook. They found that ocean conditions from 2003 through 2005 were the most likely immediate cause of the rapid decline in abundance. This finding was based on an examination of the factors indicating the presence of food for salmon at the time the fish emerged from the rivers into the ocean. At this critical time for salmon survival, the availability of prey is normally high along the West Coast due to upwelling, when nutrient-rich deep waters rise to the surface. The salmon that would have supported this year's fisheries emerged into an ocean without abundant prey and likely had a low survival rate as a result. Survival of salmon from other watersheds was poor during this period as well, with the negative effects being strongest in the south and lessening to the north.

This preliminary evaluation does not exclude other contributing causes. Many natural and human-caused factors in the freshwater environment influence the survival of salmon. The ESA listings of winter-run and spring-run Chinook and steelhead in the Central Valley identified many freshwater habitat threats that contributed to the declines of those populations. NOAA scientists are undertaking a more focused investigation of the Central Valley fall Chinook ecology, and this new study will be completed within the next few months.

Some parties have hypothesized that increased pumping of water from the Sacramento/San Joaquin Delta and ensuing entrainment mortality at the pumps is partially to blame for the decline of salmon. However, loss of all juvenile Chinook salmon at the Delta pumps was below average in 2004–2005, and below the incidental take limits for listed populations. Although NMFS cannot verify the degree Delta pumping rates played a part in the decline of salmon in the Central Valley, NMFS scientists noted that salmon in other river systems along the coast suffered similar declines. Therefore, the cause of the decline is likely a survival factor common to salmon runs from different rivers and consistent with the poor ocean conditions hypothesis being the major causative factor.

THE STATE OF SCIENCE BEHIND THE COURT-DETERMINED INADEQUATE BIOLOGICAL OPINIONS ON THE SACRAMENTO, KLAMATH, AND COLUMBIA/SNAKE RIVERS

NMFS has taken strong steps to improve its biological opinions in the recent past and to clarify review procedures. First, NMFS has more strictly defined the internal review and clearance procedures for biological opinions. Second, NMFS has adopted a practice of using independent scientific reviews as a part of the development of some complex and controversial biological opinions, such as those in the Klamath, Central Valley, and Columbia/Snake Rivers.

Section 7 of the ESA provides NMFS tools and a responsibility for protecting threatened and endangered species. All federal agencies that authorize, fund, or permit activities that “may affect” ESA-listed species are required to consult with the agency responsible for that species. In the case of salmon, NMFS is the responsible agency. The end product of the consultation is a biological opinion that provides an analysis as to whether the federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of designated critical habitat. Should the impact of a project reach the level of jeopardizing the continued existence of a listed species or result in adverse modification to the critical habitat for that species, the project may be able to proceed with modifications by adopting a reasonable and prudent alternative to the project as initially proposed. Proposed projects and the ESA consultations related to them range from simple and local to very complex and far-reaching.

The biological opinions for the Sacramento, Klamath, and Columbia/Snake Rivers are among the most complex and far-reaching that NMFS has addressed. In each case, NMFS staff has used the best scientific information available at the time of the consultation to determine the impact of those ongoing activities on the listed salmon populations and their designated critical habitats. The quality and extent of available information has varied among projects and has improved over time. However, in each case, a Federal Court found that the biological opinion or the incidental take statement did not fully meet the requirements of the law and implementing regulations. NMFS has committed to expanding the body of science related to salmon. To aid in this improvement, NMFS has more broadly used independent scientists at various stages in the consultation and in development of the biological opinion. These independent reviews have been helpful, and many of the recommendations from the reviews have been adopted immediately. For example, NMFS Science Centers and teams convened for the purposes of providing recommendations for the conservation of listed salmon have developed information NMFS now uses to assess the impacts of all proposed federal actions. This analytical framework, built around the concepts of long-term, self-sustaining salmon populations—also known as viable salmonid populations—provides a solid scientific foundation for NMFS’ analysis. In addition, this framework allows NMFS to consider the role of climate change in the species’ conservation, as the long-term self-sustaining salmon population is also resilient to environmental variation. Some

independent review recommendations require more time to develop and will be incorporated in future consultations.

In the case of the Sacramento River (Central Valley Project) water management, the most recent consultation was completed in 2004. The biological opinion on this controversial project proposal became controversial itself. In April 2008, a Federal Court found that the opinion did not use the best science available, did not apply a clear analytical framework, and reached conclusions that were not supported by the analysis contained in the opinion. NMFS is involved in a new consultation with the federal action agency on this project (Bureau of Reclamation) and their co-operator, the California State Department of Water Resources. NMFS expects to complete this new consultation in March 2009. The consultation will incorporate a clear analytical framework, more detailed data on flow and temperature management, updated modeling, impacts of climate change on future water flow levels, and additional current science related to the impact of climate change on salmon populations. These are among the many recommendations NMFS received from independent scientific reviews of the 2004 biological opinion before the Court decision.

The new consultation for the Central Valley Project operations will have independent reviews during its preparation. The first review has been commissioned by the Bureau of Reclamation for the preparation of its biological assessment of the impact of its ongoing operations on listed salmon, green sturgeon, and designated critical habitat. Once the Bureau of Reclamation completes its assessment including the independent review, NMFS will begin its consultation and its own assessment of the impact of water management on salmon, sturgeon, and their critical habitat. NMFS has scheduled into its consultation process an independent scientific review of its draft biological opinion before rendering a final biological opinion on the project.

For the Klamath River, a new consultation is nearing completion and a preliminary draft biological opinion is currently undergoing an independent scientific review. Previous critical reviews of NMFS biological opinions on the Klamath Project of the Bureau of Reclamation have provided recommendations for improving the science and the use of science that are incorporated into this current consultation. Two recent reports have enhanced our understanding of the instream flow needs of coho salmon in the Klamath River Basin: (1) the Phase II Instream Flow Report and (2) the subsequent review of the Report by the National Research Council. These reports highlight the need for a basin-wide science plan to support policy and decision-making for the basin's hydrological and ecological resources.

On May 5, 2008, three major biological opinions were issued for the Columbia River and its tributaries. They cover the operations of the 14 major federal hydropower projects on the Columbia and Snake River systems, which provide nearly half of the electric power for the Northwest, the Bureau of Reclamation dams that provide much of the water for irrigated agriculture in Idaho, and the state and tribal salmon harvest in the Columbia River and its tributaries.

All three opinions rely on the same comprehensive scientific analysis—the product of more than 25 years of ongoing research on the specific factors limiting Columbia River salmon. Much of this research has been published in peer-reviewed journals or has been the subject of independent scientific review. The analysis examines in great detail all of the effects of the proposed actions, both the adverse impacts and the proposed improvements. The opinions look at all major factors, including the effects of the hydropower system, harvest, hatchery operation, and habitat condition, and include significant improvements in each of these areas.

In developing these opinions, NMFS and the federal agencies operating the dams were urged by a federal judge to take a collaborative approach. The judge had rejected the agency's earlier biological opinions for both hydropower operations and the irrigation projects. In response, the federal agencies have worked closely with states and tribes to develop these opinions, holding over 200 meetings and work group sessions over the past two years. The new opinions are supported by three of the four northwestern states, and by four of the seven Indian tribes involved in the previous litigation.

The shifting direction provided by the federal court system involving regulatory and statutory interpretations of the ESA and its implementing regulations has been a significant issue regarding the use of science. For example, two significant questions are how to accurately characterize environmental baseline conditions and define critical habitat. In these instances, even the most well intended biologist has difficulty navigating the maze of Circuit Court cases, regulatory direction, and agency policy, especially on projects as complicated as the Columbia/Snake River, Klamath, and Central Valley. How to address the role of millions of ESA-listed hatchery fish in the jeopardy analysis is another area with complicated and conflicting judicial rulings that make an ESA analysis challenging.

LINKAGE BETWEEN RIVER AND FISHERIES MANAGEMENT UNDER THE AUSPICES OF BOTH THE ENDANGERED SPECIES ACT AND THE MAGNUSON-STEVENSON ACT

Salmon live in both the marine and freshwater environment, and therefore depend on the resources and space within both environments to persist in the face of changing climatic conditions. The health of salmon populations depends on the overall functioning of their ecosystem, not simply the resources or conditions provided in one place or by one variable. NMFS recognizes this need and considers the health and function of these environments when managing both ESA-listed and commercially harvested salmon species. At the same time, human use of freshwater and marine resources adds an additional level of complexity to the task of managing these environments and species. NMFS views the authorities related to salmon protection and fisheries management under the ESA and the Magnuson-Stevens Act as complementary. The non-listed target salmon fishery is allowed an incidental catch of listed salmon that commingle in the ocean with the non-listed target populations. NMFS is required to examine the probable impact of

ocean salmon fisheries on the ESA-listed salmon to ensure that the fishing will not jeopardize their continued existence.

Throughout the salmon range on the West Coast, including the rivers, NMFS has authority under ESA to require that federally conducted, funded, or permitted activities are carried out in a manner that does not jeopardize the continued existence of or adversely modify the critical habitat of ESA-listed fish. Should NMFS find that a project is likely to cause such harm to a species or critical habitat, NMFS provides reasonable and prudent alternatives for achieving the objectives of the project while protecting salmon. For projects not likely to jeopardize the continued existence of listed salmon or result in the destruction or adverse modification of critical habitat, NMFS also has authority to require additional protective measures for listed salmon as terms and conditions of the incidental take permit issued for the project.

Using this authority under ESA, NMFS has required many protective actions for listed salmon. NMFS has improved the future outlook for salmon by restoring or improving passage for salmon beyond dams, mandating minimum river flows below dams, requiring screening of diversions, improving water quality, reducing the negative impact of land-based activities on the streams, and rebuilding suitable spawning and rearing habitat for ESA-listed salmon. In the Central Valley, the timing and temperature of water releases from Shasta Dam, the opening of the Red Bluff Diversion Dam, improved screening on major diversions, and removal of multiple migration barriers on tributaries have substantially improved the conditions for winter- and spring-run Chinook since their listings. The populations of these salmon improved from the 1990s until 2006. Habitat improvement and favorable ocean conditions contributed to the reversal of the declines that motivated the ESA listings. Unfortunately, the 2007 estimate of winter Chinook was far below the estimates of recent years, which hopefully will return to increasing trends with improved ocean conditions.

For salmon populations not listed under ESA, NMFS has authority under the Magnuson-Stevens Act to define the essential habitat for those fish. NMFS reviews federal projects for their likely impacts on the essential habitat of salmon and recommends measures that would provide needed protection of the populations of salmon not listed under ESA. This review is concurrent with the ESA review if both listed and non-listed salmon are present in the area of the project. The Magnuson-Stevens Act recommendations to protect essential fish habitat are not binding on the federal agencies, but other federal agencies are required to respond within 30 days as to whether they accept NMFS' conservation recommendations.

Differences in the level of protection among salmon populations in the same watershed can pose a challenge. In most situations, both the ESA-listed and non-listed salmon populations benefit from the measures required by NMFS for protection under ESA. Screening diversions, reopening historic habitat lost because of impassible dams, and measures that reduce the harm to the streams from activities upslope from the river benefit all salmon and other aquatic species in the watershed. In circumstances such as those in the Central Valley, the more urgent priority for the protection of ESA-listed

species takes precedence over the protection of the fall Chinook run when the question at hand involves the timing of delivery of limited cold water to spawning and rearing habitat or the timing of diversions of water from the river for other uses. NMFS has examined those circumstances carefully and sought to provide for the needs of all salmon. But the project modifications NMFS believes are necessary are only recommendations with respect to protection of non-listed fish, while they are binding requirements for the ESA-listed fish and actions necessary to conserve critical habitat.

NMFS also can improve salmon populations under the authority of the Federal Power Act to prescribe mandatory fish passage at dams licensed by the Federal Energy Regulatory Commission (FERC). NMFS recently used this authority to require the hydroelectric power dams on the Klamath River to be retrofitted to provide passage for anadromous fish into the upper basin. When completed, this action will restore salmon to over 300 miles of spawning and rearing habitat from which they have been excluded for a century. In the Klamath and other basins, the FERC dam relicensing process has provided opportunities to negotiate broad agreements that will provide benefits to salmon. These benefits derived under the Federal Power Act apply to all fish and not just the ESA-listed populations.

CONCLUSION

The West Coast salmon fishery disaster was likely driven primarily by poor ocean conditions for salmon survival, although scientists acknowledge that conditions in the freshwater habitat for salmon have had an impact on the population's resilience to natural cycles in the ocean conditions. NMFS will conduct a study during the next few months that will focus on the contributing causes to the Sacramento fall Chinook collapse.

NMFS has made substantial improvements in the internal and external review processes for biological opinions. Independent scientific review will be a part of the consultation process for complex and controversial projects. The science available for consideration in the new biological opinions for the Columbia, Klamath and Sacramento Rivers is expanded from that available a few years ago. This improved scientific base relating river flow to salmon habitat availability is being employed in the nearly complete Klamath River biological opinion. The biological opinion on the Sacramento River water management will include new temperature modeling with finer time increments and will consider impacts of global climate change on future salmon populations.

NMFS is using its authority under the ESA and the Magnuson-Stevens Act to protect salmon and the habitats on which they depend. While most often the ESA-listed and non-listed salmon enjoy the benefits of habitat improvements in a river, occasionally the listed salmon receive priority attention in water management decisions to the potential detriment of the non-listed salmon. The authority to protect essential fish habitat under the Magnuson-Stevens Act is limited to recommendations, while protections under ESA are binding.

Finally, salmon depend on the health of a broad ecosystem including the ocean, rivers, and the watersheds that feed the rivers. While NMFS uses the authorities provided in the ESA and the Magnuson-Stevens Act to ensure that salmon are protected on a project-by-project basis, more comprehensive approaches are needed to reach the most effective and enduring solutions to the often competing needs of people and fish. Striking a balance between competing demands for water in overallocated western river basins is nearly impossible, even under the best of conditions. Although NMFS is doing its best to improve the scientific rigor underpinning its analyses, and has taken meaningful steps to add clarity to its internal review procedures, there are many variables outside of our control. Finding long-term solutions to these vexing problems will require a shared vision among parties with differing views (e.g., Klamath Restoration Agreement), continued investments in habitat restoration, long-term conservation planning (e.g., Bay-Delta Habitat Conservation Plan), and other conservation programs.

Thank you again for this opportunity to present NMFS' views on these matters. I would be pleased to answer any questions.

**Testimony of Dr. Jack E. Williams
Senior Scientist, Trout Unlimited**

**before the
House Subcommittee on Fisheries, Wildlife and Oceans
Washington, D.C.**

May 15, 2008

Madam Chairman, members of the Committee, I appreciate the opportunity to appear before you today to provide my view as Senior Scientist for Trout Unlimited on "*A Perfect Storm: How Faulty Science, River Mismanagement, and Ocean Conditions are Impacting West Coast Salmon Fisheries.*" I think we all share a strong concern for the health of salmon populations, which form an integral part of the ecological, social, and economic fabric of California and the Pacific Northwest.

Trout Unlimited (TU) is the nation's largest coldwater fisheries conservation group dedicated to the protection and restoration of our nation's trout and salmon resources and the watersheds that sustain them. TU has more than 150,000 members in 400 chapters across the United States. Our members generally are trout and salmon anglers who give back to the waters they love by contributing substantial amounts of their personal time and resources to fisheries habitat protection and restoration. The average TU chapter donates 1,000 hours of volunteer time on an annual basis.

My name is Jack Williams and I serve as Senior Scientist for Trout Unlimited. Prior to working for TU, I was privileged to serve in a number of research and management positions in the federal government, including Endangered Species Specialist for the U.S. Fish and Wildlife Service, National Fisheries Program Manager for the Bureau of Land Management (BLM), Science Advisor to the Director of the BLM, Deputy Forest Supervisor on the Boise National Forest, and Forest Supervisor on the Rogue River and Siskiyou national forests. I have also served as a Professor at Southern Oregon University and retain the title of Adjunct Professor at that institution.

In my testimony today, I would like to briefly describe the current status of Pacific salmon and what will be required to maintain salmon and steelhead populations in light of existing stressors, which will be compounded by impacts from a rapidly changing climate. In particular, I would like to make four primary points, which I will highlight now before proceeding with my full testimony.

First, the long-term survival of salmon and steelhead depends upon the conservation of the genetic and ecological diversity of remaining stocks and the habitats that support them.

Second, climate change will pose significant new challenges to conservation of salmon and steelhead in both freshwater and marine environments. But, our only near-term opportunities to improve habitat conditions occur in freshwater habitats, where larger and lower-elevation rivers have been the most degraded and therefore need the most attention.

Third, we cannot solve the problems of salmon through reliance on artificial measures that not only fail to address the root causes of declines but create a new suite of problems in and of themselves. We need science-based and landscape-scale changes, particularly in the mainstem river reaches.

And finally, we need bold action and commitment to save our salmon. We must think bigger and involve more partners in solutions than we have before, including novel approaches towards protecting the best remaining ecosystems and restoring others to better health.

The Survival of Salmon

Salmon are remarkable animals. During their long migrations between spawning habitats in headwater streams and feeding grounds in the ocean, they encounter many natural and human-induced sources of mortality. The good news is that salmon are wonderfully resilient, having survived environmental change for thousands of years. If given a decent chance, they can persist even in the face of growing human populations and rapid climate change.

Salmon are able to adapt to change because of their high reproductive rates, remarkable life history, and the great diversity of local populations, or stocks, that provide the building blocks for local adaptation. In salmon, adaptation to local watersheds builds into a stock a set of unique characteristics that increase fitness in the local environment.

Diversity is the key to long-term survival in any species. The only way we can maintain the fitness and evolutionary potential of salmon is to protect the individual stocks and the habitats that support their life histories.

In 1991, the scientific community was put on notice that a substantial amount of this diversity was eroding on a coast-wide basis. That year, the American Fisheries Society published the first coast-wide review of stocks at risk of Pacific salmon, steelhead, and sea-run cutthroat (Nehlsen et al. 1991). Of 214 stocks examined in California, Idaho, Oregon, and Washington, 102 were considered to be at a high risk of extinction and another 58 at moderate risk of extinction. Perhaps more alarming was a list of 106 additional stocks from this same four-state region that were considered to be extinct.

A subsequent review of 192 populations of salmon, steelhead, and sea-run cutthroat trout within the Columbia River basin yielded the following results: 35% of populations were

extinct, 19% at high risk of extinction, 7% at moderate risk, 13% of special concern, and only 26% were secure (Williams et al. 1992). As more and more of these populations become endangered or extinct, the capacity of future generations of salmon and steelhead to adapt to changing environmental conditions weakens.

A more comprehensive review published in 2007 has updated our knowledge of salmon status. Historically, the six species of Pacific salmon comprised approximately 1,400 Pacific populations that occurred in the Columbia River basin and coastal drainages in Washington, Oregon, and California, and according to the 2007 review, an estimated 29% or 406 of these have become extinct since Euro-American contact (Gustafson et al. 2007). Relative to geography, there is a greater proportion of extinctions in those populations that spawn the farthest south, that is in California, and those populations that spawn farthest inland, such as the Snake River populations. Relative to species, coho salmon, stream-maturing types of Chinook salmon, and sockeye salmon have been especially hard hit.

In salmon, there are three major lines of diversity that are critical to persistence: genetic, ecological, and life history. Scientists from the National Marine Fisheries Service, who authored the 2007 report (Gustafson et al. 2007), estimate losses of 33% of the ecological diversity, 15% of the life history diversity, and 29% of the genetic diversity within Pacific salmon. Many of the remaining populations, which are lumped into Evolutionarily Significant Units for purposes of administration by the Endangered Species Act, are listed as threatened or endangered. These facts demonstrate the substantial threat for salmon in this region.

It is tempting to believe that improved technologies in the form of new hatcheries, or transportation devices, or other such artificial means, will enable salmon to survive and prosper into the future. Unfortunately this is not the case. Hatchery programs for salmon have not proven sustainable and often cause more harm than good because of artificial selection of detrimental genes, introduction of diseases, and numerous other problems (Hilborn 1992; Lichatowich 1999). In fact, in the long term, hatcheries depend on wild fish for brood stock. As Dr. Gary Meffe (1992) aptly described it, "A management strategy that has as a centerpiece artificial propagation and restocking of a species that has declined as a result of environmental degradation and over exploitation, without correcting the causes for decline, is not facing biological reality."

There are no silver bullets, no slick new transportation programs that will solve our problems. New technologies can help us, but for salmon to survive in the future they must encounter at least minimum acceptable habitat conditions:

- in spawning streams for successful spawning, egg incubation and rearing of young
- in mainstem river habitats for successful migration between headwaters and the ocean; and
- in estuaries and oceans to allow for growth and return to natal streams.

Long-term survival of salmon and steelhead depends upon maintenance of genetic and ecological diversity of existing stocks and the habitats that support them.

Rapid Climate Change in Freshwater and Ocean Environments

Salmon are especially vulnerable to climate change and global warming because they are dependent on an abundance of clear, cold water. As coldwater habitats warm, rising temperatures will negatively impact a variety of salmon life history phases – from eggs to juveniles and adults. For those populations already listed as endangered or threatened, climate change is likely to push them further to the brink of extinction. Impacts of climate change are an additive stressor to systems already degraded by too many roads, too many dams, and too much water diversion.

For Pacific salmon and steelhead, climate change will result in warmer waters, reduced snowpacks, earlier spring runoff, reduced summer flows, more floods, more drought, and more wildfires in their watersheds (Poff et al. 2002; Battin et al. 2007). Changes in wind patterns will in turn impact oceanic currents and offshore conditions. In recent years, for example, a “dead zone” nearly devoid of dissolved oxygen has appeared off the Oregon coast. This is not a dead zone resulting from some form of pollution but rather from changes in ocean currents that are consistent with predictions of climate change (Oregon State University 2007 Press Release). In 2006 until winds changed and conditions improved, the dead zone comprised an area equivalent to the state of Rhode Island.

For salmon populations to persist, they must sustain suitable spawning numbers and survival of progeny in the face of changing ocean and freshwater conditions. Historically, populations have survived and even thrived during times of environmental change. In the past, ocean productivity has oscillated in response to coastal currents resulting in substantial interannual variation in survival of out-migrating salmon. During some years conditions would be poor for migrating salmon but in other years conditions would improve. Poor ocean survival can be offset to a lesser or greater degree by increased survival in the freshwater system. The ability of the freshwater system to offset poor ocean survival depends on the quality of the freshwater environment and the severity of the oceanic environment.

Unfortunately for salmon, the rate of environmental change is growing rapidly. The impacts of climate change already are evident in freshwater and ocean environments. Over the next two to three decades, we have little opportunity to change ocean conditions. In fact, they are likely to get worse. If both freshwater and ocean habitats continually decline, we have created an extinction vortex from which salmon cannot escape. If ocean conditions are beyond our control, at least in the near term, we still have the ability to change freshwater conditions. Simply stated, we must address the fundamental stressors in freshwater environments including mainstem river and lower-elevation valley bottom habitats.

In an article published in the Proceedings of the National Academy of Sciences (Battin et al. 2007), scientists demonstrated that the impacts of climate change in the freshwater environment could be offset by restoration of lower-elevation river corridors. That is, the larger, valley river systems that have been most impacted by human activities also are the areas where we have the most to gain from restoration efforts. If restoration efforts are accelerated, they predicted that the impacts of climate change, at least in the freshwater portion of the life cycle, could be completely mitigated through ecologically sound restorative programs.

Sound Science Must Drive Decisions

Proper administration of the Endangered Species Act is dependent upon proper application of the best available scientific information. The drafters of the ESA recognized this need, for example, by requiring that listing decisions be made “solely on the basis of the best scientific and commercial data available...” {Sec 4(b)(1)(a)}. Endangered and threatened salmon are among the more scientifically and socially complex of species managed pursuant to the ESA because of their long migrations across multiple jurisdictions and threats, multiple and overlapping generations, and stock structure.

Despite the widely recognized importance of science to watershed and salmon management, and the wealth of well-respected scientists employed by agencies charged with implementing the ESA, federal courts have determined that NOAA has failed in its responsibility to protect salmon from jeopardy in the Sacramento, Snake, and Klamath river systems. Most recently on May 5, 2008, NOAA’s National Marine Fisheries Service issued their court-remanded, final biological opinion to federal agencies responsible for management of the Federal Columbia River Power System. Despite in-river mortality estimates for juveniles migrating downstream through the Snake/Columbia hydropower system as high as 91.8% for listed Snake River sockeye salmon and 92.5% for listed Snake River steelhead, the National Marine Fisheries Service appears satisfied with circumventing the dams by moving fish downstream via barges and offsetting mortality by “improvements” to headwater habitats, many of which already are in excellent condition and are located in wilderness or inventoried roadless areas of National Forests (National Marine Fisheries Service 2008).

In 1990, Forest Service scientist Russ Thurow who has studied salmon and steelhead in central Idaho for more than 20 years, provided the following testimony before the U.S. Senate Committee on the flawed logic behind our failure to address the “dam problem” and our insistence on focusing instead on headwater habitat improvements. Thurow said:

“If freshwater habitats were the primary cause for declines, then stocks in high quality habitats should be faring substantially better than stocks in degraded habitats. The preponderance of evidence demonstrates this is not the case. Snake River Chinook salmon redd counts in both wilderness and degraded habitats have similarly declined since the mid-1970s.”

Unfortunately, agency managers responsible for implementing the Endangered Species Act seem to have learned little since that time and have repeatedly ignored the biological reality of the problems imposed by the lower Snake River dams on migrating salmon and steelhead despite considerable scientific evidence to the contrary. At the 1999 meeting of the Idaho Chapter of the American Fisheries Society, more than 90% of the fish biologists and aquatic ecologists in attendance supported dam breaching as the single most effective management strategy for long-term survival of Snake River salmon and steelhead. A similar measure was unanimously adopted by the Oregon Chapter of the American Fisheries Society at their 2000 annual meeting (Dombeck et al. 2003).

Restoring Resistance and Resilience to Disturbances

Existing stressors of salmon are often classified by the shorthand nomenclature of the “4-H’s”: Habitat, Harvest, Hatcheries, and Hydropower. Each factor -- habitat degradation, over harvest, hatchery production, and dams and diversions -- has resulted in sufficient population and habitat declines to cause many remaining populations to be listed as threatened or endangered species. The combination of rapidly changing climate with existing stress of the 4-H’s is likely to cause significant further erosion of diversity in salmon and steelhead unless proactive habitat protection and restoration measures are implemented at a watershed scale.

To help salmon survive the effects of rapid climate change, there needs to be an active and integrated effort to **protect** the best remaining populations and their habitats, to **reconnect** headwater streams with mainstem rivers by removing instream barriers and providing normal flow regimes, and to **restore** vital mainstem river and riparian habitats. For these efforts to be sustainable they must be founded in the best available science and implemented at local, state and regional levels.

The following figure illustrates a paired watershed where the protect-reconnect-restore strategy has been implemented to produce conditions shown on the right half of the graphic that strengthen resilience to disturbance and reduce existing stressors.

The Protect-Reconnect-Restore approach provides a general model based on accepted principles of conservation biology and restoration ecology. This approach should be tailored to the specific needs of each endangered or threatened population. Successful restoration must treat the root causes of the decline, not just the symptoms, and be implemented at the scale of entire watersheds (Williams et al. 1997). Monitoring and adaptive management is the final necessary strategy that will ensure that we continue to learn and adapt to the uncertainties of a growing human population and changing climate.

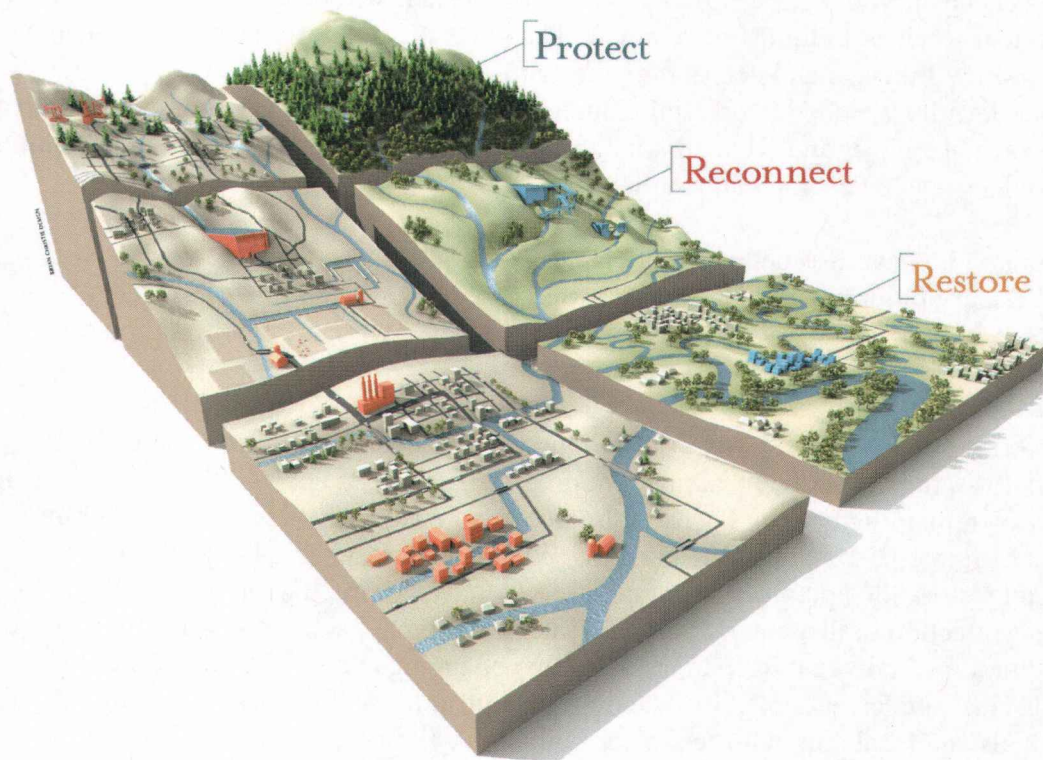


Figure 1. The Protect-Reconnect-Restore approach to building resistance and resilience to climate change in watersheds supporting trout and salmon. Graphic courtesy Trout Unlimited and Bryan Christie Design.

In the Sacramento, Snake, and Klamath river systems, the best remaining habitats occur at higher elevation public lands, where protection is the most logical strategy although some lands certainly would benefit from restoration efforts as well. The most degraded fishery habitats occur along the valley bottom and mainstem river corridors where land has been converted from wildlands to agriculture, hydropower, industry and urban development. While these mainstem corridors are the most altered, they also provide the most important opportunities for reconnection and restoration. In fact, it is because they are the most altered that the fundamental causes of their declines must be adequately addressed.

We cannot solve the problems of salmon through reliance on artificial measures that not only fail to address the root causes of declines but create a new suite of problems in and of themselves. That is what has happened on the Columbia and Snake systems with our reliance on barging to move juvenile salmon around dams. The long-standing consensus within the scientific community has been to breach the lower four Snake River dams as the single most important step needed to restore Snake and Salmon River salmon and steelhead populations. A similar situation exists in the Klamath River where passage for

anadromous fishes must be provided around dams on the river and access to historical habitat is necessary to restore Klamath River salmon and steelhead. Many dams provide vital human services and must be retained. But dams are not designed to be permanent structures. As they age and deteriorate, the economic and ecological costs and benefits must be carefully weighed to determine their most appropriate future. In the instances of the lower Snake River and Klamath, dam breaching or removal is likely the only solution that provides needed ecological benefits.

In summary, however, something more is needed to address the current West Coast salmon fishery failure than a focus on just one variable, or one of the 4-Hs. This something more must go beyond the status quo. It starts with employing sound science for management decisions, but it goes further.

Bold action is needed. Building broad alliances and unique coalitions of unlikely partners for salmon and steelhead restoration must become the norm. We must focus on supporting remaining healthy Pacific salmon ecosystems, such as through the North American Salmon Stronghold Partnership. We must think bigger about salmon and steelhead restoration and protection than we ever have before, like on the Klamath River where a collection of disparate voices and interests are proposing a brighter future based on restoration. And, we must pursue landscape changing events like removal of the lower four Snake River dams. But we must also push for real and lasting solutions with individuals and local communities. Such solutions will prove to be the most durable and effective in the long run for ensuring place-based models to protect, reconnect, and restore our western rivers and watersheds, and in the process, recover our remarkable salmon and steelhead. Today's salmon crisis is a shared crisis. Now we need shared solutions.

On behalf of Trout Unlimited, I would like to thank you for the invitation to submit testimony and participate in today's hearing, and for your time in consideration of these issues.

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Testimony of Michael Rode
Retired CDFG Senior Fishery Biologist/Staff Environmental Scientist

To the U.S. House Natural Resources Committee,
Subcommittee on Fisheries, Wildlife and Oceans

Oversight Hearing entitled: *"A Perfect Storm: How Faulty Science, River Management,
and Ocean Conditions Are Impacting West Coast Salmon Fisheries"*

Thursday, May 15, 2008

Chairwoman Bordallo and Subcommittee members, thank you for providing me the opportunity to testify before you today. My name is Michael Rode. I worked for the California Department of Fish and Game (CDFG) for twenty eight years as a fishery biologist and environmental scientist before retiring in December, 2005. During the last fifteen years of my employment with the CDFG, my job title was Klamath River Coordinator. In that capacity, I was the lead scientist for the CDFG review of U.S. Bureau of Reclamation (BOR) Klamath Project Environmental Impact Statements (EISs), annual Klamath Project Operations Plans (KPOP)s and Biological Assessments (BAs) as well as review of National Marine Fisheries Service (NMFS) Biological Opinions (BOs) on the effects of Klamath Project Operations on Southern Oregon/Northern California Coasts (SONCC) threatened coho salmon.

My intent today is to concentrate my testimony on the NMFS 2002 10-year Coho BO (emphasizing the period 2002-2005) that currently governs flows in the Klamath River below Iron Gate Dam (IGD) (River Mile 190) and to show that the 2002 BO has adversely affected not only Klamath River coho, but also Chinook salmon. Although my analysis of the 2002 BO occurred during DFG employment, my comments and conclusions today are entirely my own.

There are five main points I would like to make today:

- (1) Although ocean conditions are an important factor in salmon survival, weak Klamath coho and Chinook salmon stocks have constrained west coast mixed stock ocean salmon fisheries for more than twenty years, even when other salmon stocks were robust and ocean conditions were favorable. This strongly indicates that unfavorable inriver environmental conditions have played a major role in suppressing Klamath coho and Chinook salmon numbers.
- (2) The 2002 Coho BO does not avoid jeopardy to the continued existence of threatened SONCC coho salmon, nor prevent the destruction or adverse modification of critically designated SONCC coho salmon habitat, as required under the Endangered Species Act (ESA).
- (3) The mandates of the Magnuson-Stevens Fishery Conservation and Management Act, as amended, have not been met by BOR or NMFS for coho or Chinook Essential Fish Habitat (EFH) in the Klamath River.
- (4) The 2002 Coho BO is not based on the best scientific data available.

- (5) Klamath River flow management below IGD is governed solely by the 2002 Coho BO, thus it constitutes single species management and does not consider the flow and habitat needs of other fish species in the Klamath River, including Chinook salmon

Background

IGD, constructed in 1962 as the last downstream facility of PacifiCorp's Klamath Hydroelectric Project (FERC Project No. 2082), acts as the upper limit of anadromous fish distribution in the mainstem Klamath River. The Federal Energy Regulatory Commission (FERC) established minimum flows at IGD as part of the 1956 Klamath Hydroelectric Project licensing process, but those flows were only partially based on limited fishery information and were generally insufficient for protection of downstream fishery resources. Furthermore, even though PacifiCorp operates the six mainstem Klamath River dams within the Hydroelectric Project, downstream water availability during periods of water shortage has been decided by the BOR's Klamath Project per agreement with PacifiCorp that gives BOR control of releases at Link River Dam (the outlet to Upper Klamath Lake). Thus, the FERC minimum flows, which, to begin with, were insufficient for protection of most life stages of coho and Chinook salmon, were frequently and regularly not met at IGD during the 1962-1996 period, often during times of high vulnerability for coho and Chinook salmon early life history stages. During severe droughts such as occurred in 1992 and 1994, flows were frequently and suddenly drastically reduced below FERC minimums with little or no warning. Since 1996, PacifiCorp has operated its facilities in accordance with BOR's annual KPOP flow schedule. The general BOR management pattern during this period was to fully meet agricultural irrigation needs in the upper Klamath Basin under all conditions, frequently at the expense of maintaining and protecting downstream anadromous fish and their habitat.

On June 6, 1997, SONCC coho salmon were federally listed as a threatened species. In 1999, coho critical habitat was identified for the Klamath River and the first coho BO was completed by NMFS on July 12, 1999, providing ESA coverage for Klamath Project operations from April 1, 1999 through March 31, 2000.

The Hardy Phase I Final Flow Study Report, which was contracted by the Department of Interior (DOI), was released on August 5, 1999. The report's main objective was to quickly "provide interim minimum monthly flow recommendations for the main stem Klamath River below Iron Gate Dam downstream to the Scott River" with the expectation that the flow recommendations would be used for ESA Section 7 consultations for year 2000 and subsequent operations of the BOR's Klamath Project. However, this report was summarily dismissed and criticized by upper Klamath Basin water users, the BOR and NMFS for not including site-specific data suitable for analysis and evaluation using habitat based modeling, even though such data were unavailable at that time. A more important reason that the Phase I flow recommendations were not implemented may have been that they were considered to be too high by BOR and NMFS staff and would, thus, impact irrigation deliveries. Out of these criticisms was born the

Hardy Phase II Flow Study, again contracted by DOI, and which was begun in 1999 and would result in the most comprehensive study ever conducted on the Klamath River to address anadromous salmonid habitat and flow requirements.

A second Coho BO was released on April 6, 2001 amidst a severe drought in the upper Klamath Basin. A determination was made by the U.S. Fish and Wildlife Service (USFWS) and NMFS that inflows to Upper Klamath Lake (UKL) would not be sufficient to provide for Klamath Project agricultural deliveries as well as meet UKL elevation requirements for two species of endangered suckers and IGD flow releases for threatened coho salmon. Thus were born the 2001 water wars and the Klamath Basin became the poster child for what supposedly was wrong with the ESA.

The 2002 Coho Biological Opinion

The 2002 Coho BO marked a radical departure from the two prior BOs. On May 31, 2002, for the first time, NMFS approved ESA coverage for Klamath Project operations for a 10-year period. The CDFG, and many others, stated in written comments that the period of coverage should be much shorter so that new scientific findings and other information could be incorporated into BO revisions on a regular basis. We were concerned that the BOR and NMFS would be reluctant to reinitiate ESA Section 7 consultation in mid-water year that would result in meaningful changes to the BO and, thus far, that has proven to be the case.

Flow releases at IGD were predicted by the 2002 Coho BO to be increased in three phases but not reach levels that would avoid jeopardy until 2010, eight years after issuance of the BO. Furthermore, the BOR was taking responsibility for only 57% of the flow targets required in each phase of the plan, based on their conclusion that the Klamath Project only irrigated 57% of the total irrigable acreage in the upper Klamath Basin, even though the BOR controlled 100% of the water released from the upper basin. Even so, BOR acknowledged that they could not even meet their 57% portion of the RPA flows until 2006 without building a 100,000-acre-feet water bank and taking other measures and actions (that were unspecified) to make up any difference that might occur. The other 43% of the RPA flows would be made up outside the boundaries of the Klamath Project by stepping up enforcement of water rights and water right laws, voluntary conservation measures and programs to increase flows in the tributaries, actions that were highly unlikely to occur by the year 2010. Even more untenable was the fact that NMFS recognized that this approach "may not avoid jeopardy over the 10-year period of proposed project operations and therefore would not constitute a viable RPA (p 55, 2002 Coho BO). Never-the-less, NMFS approved the RPA based on what appeared to be wishful thinking, that to date has not substantially materialized.

One of the major, but erroneous, conclusions that NMFS reached was that coho salmon adults spawn and juveniles rear only in tributaries and, thus, the mainstem Klamath River's only function, as far as coho are concerned (and the BO is concerned), is to provide upstream adult migration and downstream smolt migration. The 2002 Coho BO RPA flows attempt to address only the adult and smolt migratory life history phases of

coho, even though monitoring and research data show some coho salmon do spawn (albeit limited due to the threatened status of coho) and significant numbers of coho fry rear in the mainstem. But more importantly, from a sustainable fisheries perspective, the RPA flows do not, and are not even intended to, protect or sustain Chinook salmon which use the mainstem Klamath River extensively for spawning, egg incubation, fry rearing and juvenile outmigration at times of the year that differ from coho salmon. The result of this regulatory (ESA) oversight is that we have poor single species management on the Klamath River for a complex of fish stocks that requires a more comprehensive and holistic approach for these fisheries to thrive into the future.

The scientific community and down-river fishery managers were stunned by this radical change in approach to protection of threatened coho salmon and its implications on other fish species, especially since ongoing research was strongly suggesting that Klamath River anadromous fish required more water than was being provided, not less.

Essential Fish Habitat

Essential Fish Habitat (EFH) was identified and described for Chinook and coho salmon in the Klamath River and its tributaries upstream to IGD by the Pacific Fisheries Management Council (PFMC) under Amendment 14 to the Pacific Coast Salmon Fishery Management Plan. Under provisions of the Magnuson-Stevens Fishery Conservation and Management Act, regulations require that Federal action agencies, in this case BOR, consult with NMFS and provide them with a written statement on the effects of their action on EFH. But, because BOR failed to do this, NMFS relied on the 2002 Coho BO in preparing its EFH conservation recommendations. Upon receipt of the recommendations, the action agency is then required to provide a detailed written response within thirty days describing how they intend to avoid, mitigate or offset the impacts of their activity on EFH. This course of events did not occur.

Instead, NMFS determined that the proposed action:

“will adversely affect spawning, rearing and migratory EFH functions of Pacific Salmon currently or previously managed under the Magnuson-Stevens Act. Primarily NMFS thinks that the proposed project would result in a continued decline in EFH conditions in the Klamath River over time, and thereby preclude rebuilding of the coho salmon population and reduce habitat required to support a sustainable Chinook fishery.”

However, NMFS concluded that implementation of the BO's RPA and the terms and conditions of the incidental take statement would constitute necessary conditions for conserving Klamath River Chinook and coho EFH. As we shall see, the RPA has not delivered the conservation of EFH as promised in the Coho BO.

A major issue is that NMFS has not felt obligated to give any real consideration to protection, much less enhancement, of unlisted species, even though their public trust and

tribal trust responsibilities would suggest that they should. For instance, the NMFS Southwest Region web site states the following:

"Flow releases at Iron Gate Dam are managed according to a biological opinion (BO) issued by NOAA Fisheries Service. The flow release operations under the BO are calculated to provide the necessary protections for the Endangered Species Act (ESA) listed coho salmon in the Klamath River and are not designed specifically to protect Chinook salmon, which are not listed under the ESA."
(emphasis mine)

.Best Available Science

Another major flaw of the 2002 Coho BO, and perhaps the most important one, is that NMFS did not use the best available science for formulating the RPA. The Hardy Phase II Flow study was started shortly after completion of the Phase I Report on August 5, 1999. The Final Phase II Report was reviewed by the public, interested agencies and all cooperators and then released on November 21, 2001, in time for potential use in developing the 2002 Coho BO. Although a number of ancillary findings of the Phase II Report were incorporated in the BO, its flow recommendations were not. The Phase II Report was reclassified as a draft report by DOI and shelved. The reason given was that the Upper Klamath Lake (UKL) inflow numbers (which were originally provided by BOR) used by the Phase II hydraulic modeling were not what BOR considered to be the most accurate or current version. However, BOR could not release the newer inflow numbers for Dr. Hardy's use, for an indeterminate period of time, because that data were being used as part of the upper Klamath Basin Oregon water rights adjudication. My understanding at the time was that if these UKL inflow data were used for any other purpose than the water rights adjudication, BOR claimed that they would be vulnerable to a law suite. In addition, the Draft Hardy Phase II Final Report was suddenly plagued by the inability to secure promised contractual funding from DOI and other bureaucratic machinations that delayed its final release for over four years and eight months. During this whole episode, BOR claimed the flow recommendations were unusable because they were still in draft form.

About the same time that the Draft Hardy Phase II Report was completed, the BOR started their own investigation to attempt to describe the natural outflows from Upper Klamath Lake and Keno prior to development of the upper Klamath Basin. Early drafts of their report, which were soundly criticized, erroneously suggested that natural flow accretions at these two points were significantly lower than formerly thought. A final report entitled *Natural Flow of the Upper Klamath River* was released in November, 2005. It was BOR's expectation that Dr. Hardy would use the impaired flows (flows after development) generated by this report as inputs for hydraulic modeling below IGD. Eventually, the unimpaired flows from the Natural Flows Report were used by Dr. Hardy instead and this may still be a point of contention.

The National Academy of Sciences National Research Council (NRC) Report: *Hydrology, Ecology, and Fishes of the Klamath River Basin* (NRC, 2007) concluded that:

"the Natural Flow Study did not adhere closely enough to standard scientific and engineering practice in the areas of calibration, testing, quality assurance, and quality control. These activities are prerequisites for confidence in the model products by users, including decision makers and other modelers." (p 149)

.The Hardy Phase II Final Report was finally completed on July 31, 2006 and to my knowledge its flow recommendations have still not been utilized to manage Klamath River flows at Iron Gate Dam. The sense one had during this turbulent period was that there were strong political forces at work at DOI that did not want to see the Phase II Report completed because its flow recommendations were perceived as a threat to irrigated agriculture.

The Phase II Flow Study was more than a state-of-the-art habit/flow relationship modeling effort. It drew upon and considered most all of the significant research and monitoring that had been conducted on the Klamath River below Iron Gate Dam and much of what had been done in the upper Klamath Basin to date and in many cases incorporated that information into the Final Phase II Report. There were many Federal, State, Tribal and private cooperators who provided fish, habitat, water chemistry, hydrologic and other needed data and who included in future work plans research projects and monitoring that would produce needed new data that would make the Phase II Study a success.

Another important aspect of the study was that Dr. Hardy created a Klamath Technical Review Team to assist in study design, data review and report review. The Technical Review Team included participation by the U.S. Fish and Wildlife Service, BOR, NOAA Fisheries, U.S. Geological Survey, Bureau of Indian Affairs; Yurok, Karuk, and Hoopa Tribes; Oregon Department of Fish and Wildlife, CDFG, and representatives of the Klamath Water Users Association.

The Hardy Phase II Final Report was developed for the Department of Interior:

*"to recommend instream flows on a monthly basis for specific reaches of the main stem Klamath River below Iron Gate Dam by different water year types. These recommendations specify flow regimes that will provide for the long-term protection, enhancement, and recovery of the aquatic resources within the main stem Klamath River in light of the Department of the Interior's trust responsibility to protect tribal rights and resources as well as other statutory responsibilities, such as the Endangered Species Act. The recommendations are made in consideration of all the anadromous species and life stages on a seasonal basis and **do not** focus on specific target species or life stages (i.e., coho)" (Hardy, et al, 2006).*

The Hardy Phase II Final Report is the definitive and most comprehensive work on Klamath River anadromous salmonid habitat and flow requirements. In a December 4, 2002 PFMC letter (from Radtke to Norton and Evans) it was stated that DOI had spent \$890,000 and other cooperators had contributed more than \$1 Million to the flow study

effort to date. No other similar flow studies have been conducted on the Klamath River and it is unlikely another similar effort could be justified.

Figure 1. in the Supplemental Information compares the Hardy Phase II recommended flows versus the 2002 Coho BO Phase III flows and the actual flows that occurred during water year 2007, a below average water year type.

The NRC Report had this to say about the Hardy Phase II Flow Study:

"The most important outcome of the IFS was that it indicated that increases in existing flows downstream from Iron Gate Dam probably would benefit fish populations through improved physical habitat associated with more water and through reduced water temperatures." (NRC, 2007, p 133) and "The committee concludes that the [Hardy Phase II] study enhances understanding of the Klamath River basin ecosystem and the flows required to sustain it. In their present form, if they are adopted, the recommended flows resulting from the study should be adopted on an interim basis pending the model improvements outlined below to overcome its limitations, and a more integrated assessment of the scientific needs of the basin as a whole. The recommended flow regimes offer improvements over existing monthly flows in that they include intra- and interannual variations and appear likely to enhance Chinook salmon growth and young-of-the-year production." (NRC, 2007, p 152).

A CDFG (letter of May 24, 2002, Koch to Sabo) commented on the May 16, 2002 draft of the Coho BO and advised BOR to implement the Hardy Phase II flow recommendations in the RPA, beginning in 2002 and that these flows would help meet EFH mandates. However, this recommendation was not implemented.

Fish-Kills

In September, 2002, less than four months after the 2002 Coho BO was released, at least 33,000 and perhaps as many as 70,000 adult salmonids died in the lower reaches of the Klamath River. By far, most of these fish were adult Chinook salmon, although hundreds of coho and steelhead also succumbed. This event was unprecedented for the Klamath River and likely one of the largest salmon mortalities ever experienced on the west coast.

The primary cause of the fish-kill was a disease epizootic from the ubiquitous pathogens *ich* and *columnaris*, but several factors combined that stressed the fish and allowed the epizootic to flourish. Warm water temperatures (which are normal for this time of year) combined with an above-average run of Chinook salmon and near-record low flows resulted in high fish densities and created ideal conditions for pathogens to infect salmon.

The CDFG 2002 Fish Kill Report summarizes its conclusions as to what caused the fish kill and what can be done to avoid future kills by stating:

“Flow is the only controllable factor and tool available in the Klamath Basin (Klamath and Trinity Rivers) to manage risks against future epizootics and major adult fish-kills. Increased flows when adult salmon are entering the Klamath River (particularly during low-flow years such as 2002) can improve water temperatures, increase water volume, increase water velocities, improve fish passage, provide migration cues, decrease fish densities and decrease pathogen transmission between fish.

That low flow was the primary causative factor leading to the September, 2002 fish-kill was supported by two other independent reports, one by the U.S. Fish and Wildlife Service, Arcata and the other by the Yurok Tribe.

Given the magnitude of the fish-kill and its close correlation to low flows, it would be expected that BOR would reinitiate consultation with NMFS on the Coho BO, but they did not.

As serious as the September, 2002 fish kill was, a more critical issue to the survival of Klamath River salmon is the repeated mortality of juvenile salmon during their spring and summer rearing and down stream migration phase. A number of juvenile fish kills, some numbering in the hundreds of thousands, have regularly occurred in recent years. Recent investigations have shown that two myxozoan parasites *Ceratomyxa Shasta* and *Parvicapsula minibicornis* have been a significant factor in mortality of juvenile Chinook salmon and can also cause disease in coho salmon. These parasites thrive in vegetated, silt-laden slow water environments and the primary remedy for their control is to increase the magnitude and variability of flow releases at IGD during these months. A 2005 report entitled:

FY 2004 Investigational Report: Health Monitoring of Juvenile Klamath River Chinook Salmon by the USFWS, California-Nevada Fish Health Center concluded that “*Depending on the Juvenile Klamath River salmon population size and smolt to adult ratio, the effective number of adult salmon lost to C. Shasta as juveniles could rival the 33,000+ adult salmon lost in the 2002 Klamath River fish die-off.*”

Since BOR and NMFS both knew about this threat to Chinook and coho salmon, why was ESA Sec. 7 consultation not reinitiated?

Figure 2 of the Supplemental Information compares grilse (2-yr. old) Chinook salmon returns versus outmigration flows that these fish experienced as juveniles (0+) two years previously. The graph shows a strong positive correlation between flow and the number of grilse returning two years hence; the greater the flow, the higher the returns. This correlation held well for years 2001–2004, but then fell apart in 2005, suggesting deteriorated ocean conditions may have had a greater influence that year.

A December 4, 2004 letter from the PFMC to DOI and Commerce (see Supplemental Information letter, Radke to Norton and Evans) summarized the concerns of the 2002

Coho BO and the fact that it was not protecting Klamath River fisheries. Another letter dated December 15, 2005 from the PFMC to BOR (Hansen to Keyes) indicated the same concerns still had not been resolved.

Federal Court Decisions

In the latest of a number of court decisions favoring increased protection for Klamath River coho salmon, the Ninth Circuit Court of Appeals, in March, 2007, reaffirmed a March, 2006 Federal District Court Order (Armstrong Decision) that found BOR and NMFS arbitrary and capricious and provided injunctive relief for the Plaintiffs by ordering BOR from making irrigation diversions at the Klamath Project unless flows in the Klamath River below Iron Gate Dam meet 100% of the flows called for in Phase III of the Klamath Irrigation Project Biological Opinion's Reasonable and Prudent Alternative (RPA) until a new biological opinion is completed pursuant to the Endangered Species Act ("ESA")§7(a)(2) and reviewed by the court. In the process the courts invalidated Phases I and II of the BO. In essence the courts struck down the entire premise of the 2002 Coho BO that RPA Jeopardy avoidance flows can be phased in slowly over many years without jeopardizing coho salmon. From this one, can conclude that for the first five years, the 2002 Coho BO did not meet the non-jeopardy standards of the ESA and did not protect and conserve critical coho habitat or coho and Chinook EFH (since EFH conservation was largely based on the 2002 Coho BO RPA).

2008 Klamath Project Operations and the 2008 Biological Assessment

The BOR released an Interim 2008 Klamath Project Operations Plan on April 3, 2008, indicating it would operate the Project consistent with the flow requirements of Phase III of the NMFS 2002 Coho BO and the water year type determined by the April 1, 2008 UKL inflow forecast by the Natural Resource Conservation Service. The Interim KPOP would stay in effect until NMFS finishes the new Coho BO that may provide new direction.

However, in contrast to the 2008 Interim KPOP, BOR is proposing something far less protective of coho salmon (and by implication, Chinook salmon). In an October 22, 2007 letter to NMFS that accompanied the Final BA on the proposed operations of the Klamath Project, from 2008 to 2018, BOR stated the following:

"The proposed action in the enclosed BA includes maintaining a minimum flow of 1300 cubic feet per second (cfs) in the Klamath River below Iron Gate Dam for the months of October through February, as contained in the Phase III Dry Year flows as described in Table 9 of the 2002 National Marine Fisheries Service (NMFS) Biological Opinion (BO). However, in an effort to provide maximum flexibility to meet coho salmon needs, we are evaluating the impacts of reducing the minimum flow discharge during these months at Iron Gate Dam from the proposed 1,300 cfs to 1,000 cfs during the months of October through February, and reducing late summer flows. This reduction in the minimum flow would provide the opportunity to shift available water to the March through June

period, which corresponds with the out-migration of coho salmon smolt. We will be providing further information regarding this modification to the proposed action and its effects at a later date and will work with your office and the U.S. Fish and Wildlife Service, as well as other interested parties, to further refine and analyze this potential flow regime during the formal consultation process. (emphasis mine).

The BOR is proposing to operate the Klamath Project for the next ten years under Dry Year (90% Exceedance) drought conditions, regardless of water year type. Furthermore, BOR is proposing to reduce the October through February flows at IGD to 1000 CFS, below any measure of adequacy, and to reduce late summer flows an unspecified amount below 1000 CFS. This is an attempt to meet needed rearing and outmigration flows by shifting needed water from one life history phase of coho salmon to another, while maintaining full irrigation deliveries for all water year types. The absolute minimum flow needed for adult coho and Chinook salmon mainstem migration and spawning is 1300 CFS at IGD. The minimum flow release at IGD needed during late summer to accommodate adult salmon entry into the lower Klamath River and to ameliorate high water temperature conditions, such as resulted in the 2002 fish kill, is 1000 CFS. Both of these standards were part of the 2002 BO Phase III RPA. Therefore, the BOR proposal falls far short of the requirements of the Armstrong Decision and the recommendations of the Hardy Final Phase II Report. Unless NMFS rejects the BOR ten year KPOP Klamath River flow proposal and implements the Hardy Final Phase II Report flow recommendations, we can expect continued deterioration of the Klamath River anadromous salmonid fishery resource.

Recommendation

The NMFS should require in their next Coho BO that the Hardy Final Phase II flow recommendations be implemented on an interim basis until further studies can refine the model, as recommended by the 2007 NRC Report. These flows are a necessary starting point and foundation for basin-wide anadromous fish restoration that cannot otherwise be successful. Fund and implement the data improvements recommended by the 2007 NRC Report.

Thank you for taking my testimony. I will be glad to answer questions.

Figure 1.

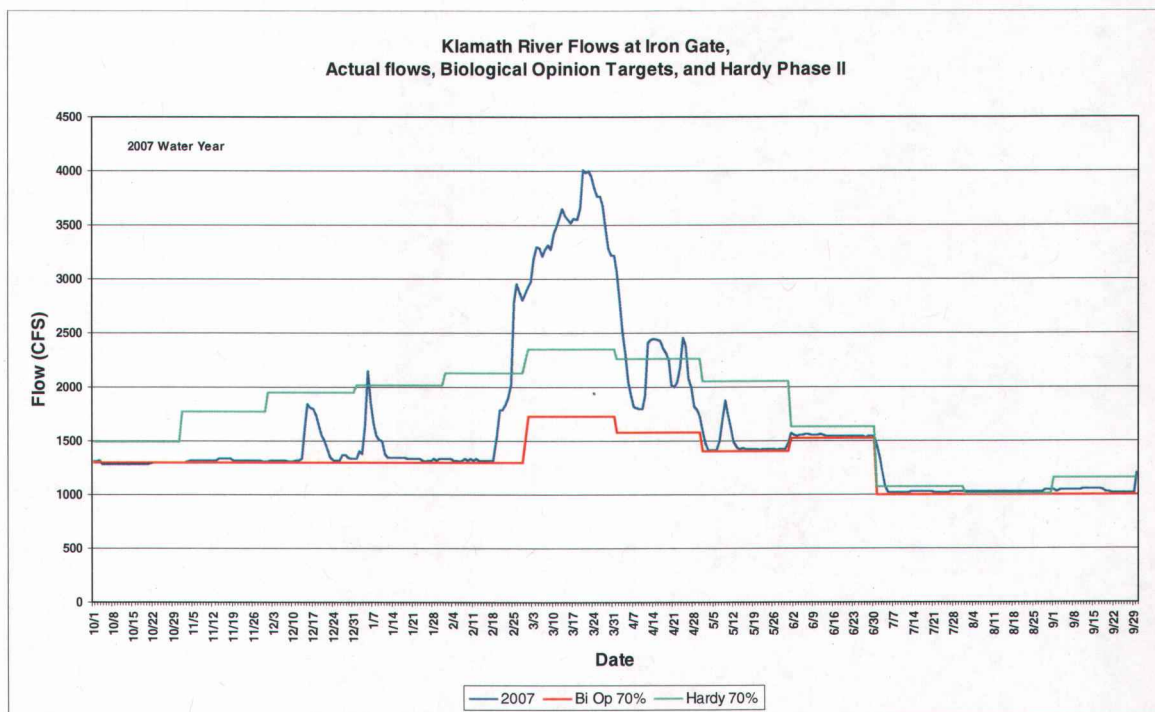
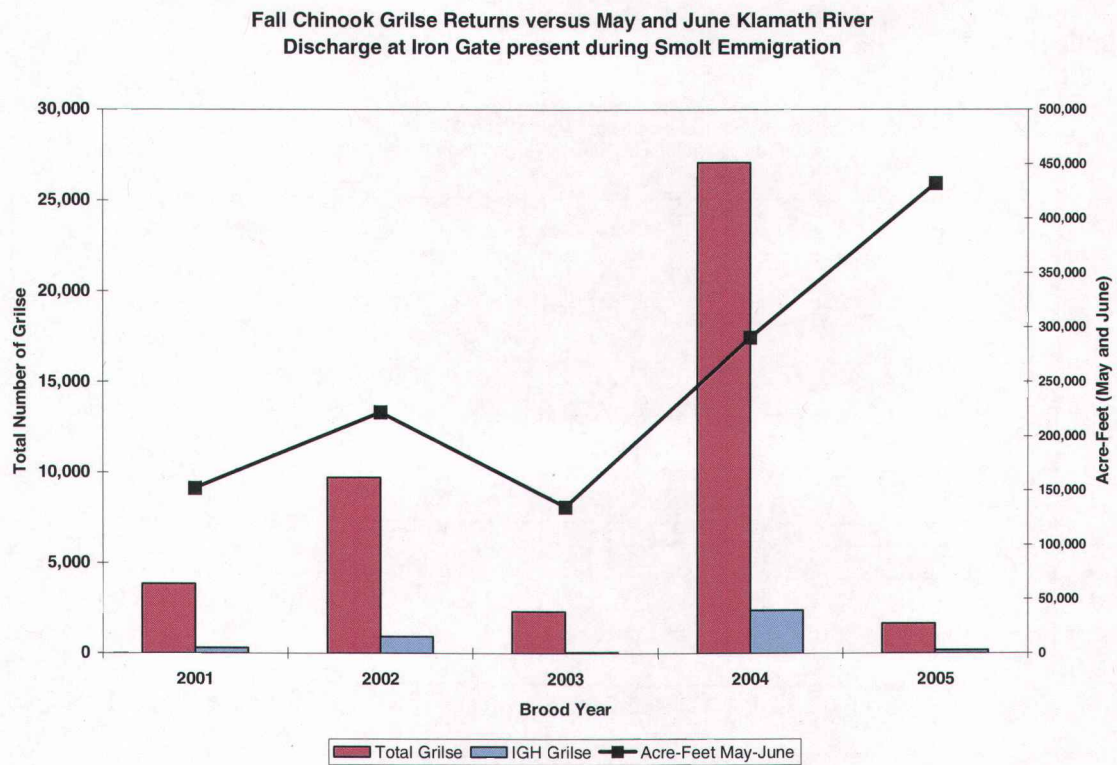


Figure 2.



Supplemental Information

PACIFIC FISHERY MANAGEMENT COUNCIL

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December 4, 2002

Secretary Gale Norton

United States Department of the Interior

1849 C. Street N.W.

Washington, DC 20240

Secretary Donald Evans

United States Department of Commerce

14th and Constitution Avenue N.W.

Washington, D.C. 20230

Dear Secretary Norton and Secretary Evans:

The Pacific Fishery Management Council (Council) has grave concerns regarding the adverse

effects of reduced flows on the anadromous salmonid fish populations of the Klamath River.

The May 31, 2002, National Marine Fisheries Service (NMFS) Final Biological Opinion (BO) on

the effects of the U.S. Bureau of Reclamation (Bureau) Klamath Project on Southern Oregon/Northern California Coasts (SONCC) coho salmon contains a "reasonable and prudent

alternative" (RPA) that prescribes flows are so low the Klamath River will be placed in a state of

perpetual drought. Such low flows will jeopardize the continued existence of coho salmon in the

Klamath Basin and will result in destruction or harm to its critical habitat. SONCC coho salmon

are listed as threatened under the federal Endangered Species Act (ESA), and the California Fish and Game Commission recently determined that coho salmon from San Francisco Bay to

the Oregon border are warranted for listing under the California Endangered Species Act.

Furthermore, these extremely low flows will cause adverse impacts to the essential fish habitat

(EFH) of coho and chinook salmon, which are managed by the Council. Therefore, *the Council*

urges the Bureau and NMFS to immediately reinstate Section 7 ESA consultation regarding Klamath Project effects on SONCC coho salmon and its critical habitat, and to reinstate consultation on Klamath Project effects on coho and chinook salmon EFH.

Background

The Council was created by the Magnuson-Stevens Fishery Conservation and Management Act

in 1976 with the primary role of developing, monitoring, and revising management plans for fisheries conducted within federal waters off Washington, Oregon and California.

Subsequent

congressional amendments added emphasis to the Council's role in fish habitat protection.

Amendments in 1996 directed NMFS and the regional fishery management councils to develop

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conservation recommendations for agency activities that may affect the EFH of the fish they manage. In 1999 the Council identified and described EFH for chinook and coho salmon under

Amendment 14 to the Pacific Coast Salmon Fishery Management Plan.

The operational plans of the Klamath Project have a direct influence on the EFH of coho and chinook salmon. Such habitat includes the water quantity and quality conditions necessary for

successful migration and holding, spawning, egg-to-fry survival, fry rearing, smolt migration, and

estuarine rearing of juvenile coho and chinook salmon.

The BO covers Klamath Project operations for ten years (April 1, 2002 - March 31, 2012).

Thus,

the Project's negative impacts to anadromous fish will be both short-term and long-term in nature. The BO forms the basis for both the USBR 2002 Project Annual Operations Plan and a

Long-Term (ten-year) Project Operations Plan that propose to divert, store and deliver irrigation

water. Flow releases at Iron Gate Dam are not part of the action, but would result from the action. It is notable that *while full irrigation deliveries are planned for all water year types during*

the ten-year period, improvements to flows for fish will depend solely on small, incremental, and

uncertain developments of new water. The Council believes this approach to water management works against the numerous and expensive federal, state, and tribal efforts aimed

at restoring anadromous fish habitat in the Klamath Basin, including regulatory efforts to minimize fishery impacts on weak salmon stocks.

Constraining Nature of Klamath Stocks

Since the early 1980s, the depleted status of Klamath River Basin natural coho and fall chinook

stocks has constrained management of ocean fisheries from Northern Oregon to south of San

Francisco. In order to protect these stocks, on many occasions the Council has had to reduce

the harvest of all salmon in otherwise healthy mixed-stock fisheries where Klamath salmon occur. Despite complete closures to the harvest of Klamath Basin coho salmon in the Southern

Oregon and California ocean commercial fisheries since 1993 and the ocean recreational fishery since 1994, the continued decline of this species resulted in the listing of SONCC coho

salmon as threatened under the ESA in May, 1997.

Recent Fish Kill

An unprecedented and disastrous fish kill in the lower Klamath River in September, 2002, resulted in a conservatively estimated loss of more than 30,000 returning adult salmon, according to the U.S. Fish and Wildlife Service. Most of the mortalities were fall chinook salmon,

although hundreds of coho salmon and steelhead trout were also killed. In 2002, ocean and inriver fisheries have been managed to allow a fall chinook spawning escapement to the

Klamath basin of 57,000 adults, of which 35,000 were expected to spawn in natural areas and the rest at Iron Gate and Trinity River hatcheries. The fish kill will likely make it impossible to meet the escapement goal this year, and the loss of the reproductive potential of these fish will

result in diminished returns three, four and five years into the future. In addition, given the variable run timing for Klamath Basin substocks, escapement to some subbasins may be severely impacted. The 2002 inriver fisheries have already been severely affected as evidenced

by the Yurok Tribe's early closure of their fall chinook salmon fishery.

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1/ USGS Gage 11530500 Klamath R NR Klamath CA.

2/ BO, Table 5, p 33.

3/ USGS Gage 11516530 Klamath R BL Iron Gate Dam CA.

Although disease was the ultimate cause of death for most of the fish killed, low flows in the lower Klamath River acted as a barrier to upstream migration, resulting in large concentrations

of stressed fish that quickly became infected. Average flows in the lower Klamath River during

September, 2002 were the fifth lowest on record since 1951^{1/}. A significant portion of the September flows were released at Iron Gate Dam, which is controlled by the Bureau according

to its annual Project operations plans. In 2001, 39.4% of the flow at the mouth of the Klamath River was due to Iron Gate Dam releases.

The 2002 Project Annual Operations Plan flow prescriptions at Iron Gate Dam are based on the

NMFS BO's RPA, which purportedly avoids jeopardy to SONCC coho salmon by providing flow

releases at Iron Gate Dam that approximate the *minimum monthly flows attained during the 1990-1999 period of Project operations* for each respective water year type (above average, average, dry and critically dry)^{2/}. In 2001 (a critically dry water year type) the average flow at Iron

Gate Dam was 1,026 cubic feet per second (cfs)^{3/}. In September 2002, (a dry water year type),

an average flow of 762 cfs was released at Iron Gate Dam before a pulsed flow was initiated on

September 28 (USGS unpublished records). The 2002 flows were 34.6 per cent less than in 2001. Even though the total fall chinook run was much greater in 2001 than projected for 2002,

and 2001 was a drier water year type, an adult fish kill did not occur. Thus, there is a strong correlation between the low flows prescribed by the BO and implemented by the 2002

Project

Operations Plan and the September 2002 fish kill.

In the latter stages of the fish kill, additional water (the pulsed flow) was provided by PacifiCorp

to the Klamath River for a two-week period from September 28 to October 10. The water came

from hydro generating facilities at Copco and Iron Gate reservoirs, and increased the flows at Iron Gate Dam by approximately 71% to 1300 cfs. This pulsed flow appeared to facilitate the dispersal and upstream migration of surviving salmon and steelhead trout. However, flows have

since been reduced by the Bureau to approximately 879 cfs, and are expected to stay at that

level through Spring 2003 unless precipitation and runoff in the basin improve significantly (Klamath Project 2002 Operations Plan, USGS Records).

The fish kill will likely delay recovery of Klamath basin coho and chinook salmon to levels that

can sustain full fishing, and will result in continued economic and social hardship to Klamath Basin and coastal communities that depend on commercial and recreational fishing. The depleted status of these fisheries will also cause severe economic, social, and cultural impacts

on the Yurok, Hoopa Valley, and Karuk Tribes of the lower basin.

Need for Flow Management Advisory Committee

The Council is very concerned that existing and proposed low flows between now and April 2003

will harm chinook and coho salmon spawning, egg incubation, fry emergence, and fry rearing in

the Klamath River mainstem. Our concern is heightened by the fact these impacts will occur on

populations that are already severely affected by the fish kill. To adequately address these concerns and to explore immediate solutions to the Klamath River flow shortage problem, the

Council recommends the Bureau of Reclamation form a flow management advisory committee,

consisting of tribal, state, and federal representatives having co-manager responsibilities for Klamath River fishery resources, as soon as possible. Convening such a group by mid-September in below average and dry years is a part of the BO RPA (BO, p 69), but the Bureau

of Reclamation does not plan to implement this committee until 2010.

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Need for Timely Completion of a Supplemental Environmental Impact Statement

Flows in the lower Klamath River are also influenced by accretions from the Trinity River, the Klamath River's largest tributary. Implementation of a recent Department of Interior Trinity River

Record of Decision, which would have increased flows significantly, has been delayed by litigation. A court order has required the preparation of a Supplemental Environmental Impact Report (SEIS), the completion of which has been delayed by the Bureau of Reclamation. The Council urges the Bureau to complete the SEIS so that the higher Trinity River flows can be implemented in a timely fashion to benefit lower Klamath River flows.

Need for Reinitiation of Endangered Species Act Consultation

The Council believes by revealing how Klamath Project operations may have adversely affected

threatened SONCC coho salmon and its critical habitat, the fish kill represents important new information not considered in the BO. Further, the fish kill may have resulted in incidental take

that exceeds the amount or extent of take anticipated by the BO's Incidental Take Statement. Both of these concerns warrant reinitiation of consultation under 50 CFR '402.16 (BO, p. 74).

The Council strongly recommends the Bureau of Reclamation and NMFS reinitiate consultation

as soon as possible regarding the effects of Klamath Project operations on SONCC coho salmon and its critical habitat.

The Council is also deeply concerned the BO covers project operations for a ten-year period, between April 1, 2002 and March 31, 2012. The Bureau is presently developing an

Environmental Impact Statement (EIS) that would support preparation of a Long-Term Project

Operations Plan that would incorporate the 2002 BO as its basis for forming Project operations.

We believe that long-term commitments, once made, are difficult to change. Thus, it would be

prudent for the Bureau and NMFS to reinitiate Section 7, ESA consultation prior to finalizing the

EIS and Project Operations Plan. The Council would like to be kept fully informed and provided

the opportunity to comment if the Bureau decides to continue with development of these plans.

Need for Essential Fish Habitat Consultation

EFH conservation measures for coho and chinook salmon were included in the BO by NMFS,

based on information in the BO and from other sources. However, the Council strongly feels the

recommendations prepared by NMFS do not adequately protect either coho or chinook salmon

habitat. This is demonstrated by the recent fish kill and by the minimal proposed flows, which do

not reflect the best available science and information. In addition, the EFH regulations require

the Bureau of Reclamation, as the action agency operating the Klamath Project, to consult on

EFH, to provide NMFS with a written assessment of the effects of their action on EFH, and to provide a detailed written response to NMFS within 30 days upon receipt of NMFS EFH conservation measures, detailing how the Bureau intends to avoid, mitigate or offset the impacts

of their activity (50 CFR ' 600.920). To our knowledge, the Bureau has not done any of this.

The Council strongly urges the Bureau to initiate consultation on EFH, and to consider all life history phases of coho and chinook salmon that may be affected by Project impacts on mainstem Klamath River habitat.

Secretary Norton and Secretary Evans

December 4, 2002

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Need for Finalization of Hardy Phase II Report

The Council notes the Department of Interior (DOI) commissioned Dr. Thomas Hardy of Utah State University to conduct a flow study in the Klamath River, starting in June, 1998. The purpose of this study was to develop monthly instream flow recommendations for the Klamath

River from Iron Gate Dam to the estuary for five water year types.

The recommended flows in the Hardy Phase II study were considered necessary to support salmon and steelhead populations in the Klamath River. They were also necessary to meet the

DOI's trust responsibility to protect tribal rights and resources, and to meet other statutory responsibilities such as the Endangered Species Act and the Magnuson-Stevens Act. A draft Final Phase II Report was released for public comment on November 21, 2001, but has not been

finalized. NMFS used some of the information contained in this report to develop the BO, but decided not to use the Phase II flow recommendations.

To date, the Hardy Phase II effort has cost DOI \$890,000. In addition, cooperating agencies and

colleagues have contributed more than \$1 million in services and studies to the effort. The Council believes the flow recommendations in this study represent the best available science regarding Klamath River anadromous salmonid flow needs. *We urge you incorporate this information in your ESA and EFH consultations.* We also encourage the Bureau of Reclamation

to finalize this report so that it can be reviewed and fully accepted by the scientific community and then used by Klamath River resource managers.

The attached tables show the flows that the Bureau plans to operate under for the next ten years

(from Table 5, BO p. 33) compared to the Hardy Phase II recommended flows at Iron Gate Dam

(Table 51). The Hardy 70% exceedence flows are for the same water year type as the Bureau's

dry water year flows (70% exceedence means that during 70% of the years in the period of record, annual inflows to upper Klamath Lake have exceeded the value indicated for a dry water

year type). The Hardy flow recommendations for a dry water year type are more than twice as

great as the flows which the Bureau provided at Iron Gate Dam in 2002 and plans to provide in

the future. Unimpaired monthly flows (not affected by the Klamath Project) are provided in Table

52. When compared to these flows, the Bureau's proposed flows for *all* water year types and *all*

months would put the Klamath River in a perpetual state of drought.

Summary of Council Recommendations

To summarize, the Council recommends the following:

1. Reinitiate ESA, Section 7 consultation as soon as possible (DOI and DOC).
2. Reinitiate coho and chinook salmon EFH consultation (DOI and DOC).
3. Establish a flow management advisory committee as soon as possible (DOI).
4. Complete the SEIS and implement the Trinity River ROD in a timely fashion (DOI).
5. Provide the Council opportunity to comment on the EIS for the Long-Term Operations Plan (DOI).

6. Finalize the Hardy Phase II Report and incorporate its flow recommendations in future consultations and Klamath Project operations plans (DOI).

Secretary Norton and Secretary Evans

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The crisis flow management exhibited on the Klamath River during drier water years is not conducive to the maintenance, much less restoration, of anadromous salmonid populations.

In

addition, it contributes to economic uncertainty for communities that depend on sustainable fishery resources. The Council urges you to implement our recommendations in order to reverse this dire situation.

Sincerely,

Hans Radtke, Ph.D.

Chairman

JDG:ds

Enclosures

c: U.S. Senator Dianne Feinstein

U.S. Senator Barbara Boxer

U.S. Senator Ron Wyden

U.S. Senator Gordon Smith
U.S. Rep. Mike Thompson
U.S. Rep. Greg Walden
California Governor Gray Davis
Oregon Governor John Kitzhaber
California Secretary for Resources Mary Nichols
CDFG Director Robert Hight
ODFW Director Lindsey Ball
U.S. Fish and Wildlife Service Director Steve Williams
Assistant Administrator for NMFS William Hogarth
C:\Documents and Settings\JJ.PCOUNCIL\Local Settings\Temp\Klamath letter v-8.wpd
From NMFS May 31, 2002 Biological Opinion
From Hardy Draft Final Phase II Flow Study Report
From Hardy Draft Final Phase II Flow Study Report

PACIFIC FISHERY MANAGEMENT COUNCIL

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December 15, 2005

Mr. John W. Keyes III, Commissioner
Bureau of Reclamation
1849 C Street NW
Washington, DC 20240-0001

Dear Mr. Keyes:

The Pacific Fishery Management Council (Council) appreciates the Bureau of Reclamation's (BOR) response dated July 7, 2005 (Ref. W-6332, PRJ-13.00), regarding management of water flows on the Klamath River. However, your response did not adequately address the issues posed by the Council. Fishing communities feel a strong sense of urgency regarding the resolution of water quality and quantity issues within the Klamath River system. Resolution of these issues is critical to the immediate needs of in-river and ocean fisheries, and to the health of the Klamath ecosystem. Management of both the quality and quantity of water in the Klamath River and its tributaries is critical for all phases of freshwater salmon life history. Therefore, the Council recommends that the BOR:

- Reinitiate consultation with National Marine Fisheries Service (NMFS) as soon as possible regarding the effects of water project operations on chinook and coho salmon essential fish habitat (EFH), and that the analysis and flow recommendations include a credible biological basis, such as contained in the draft Hardy Phase II report referenced in our previous letter.
- Implement draft Hardy Phase II recommendations as an interim measure while consultations are ongoing.
- Revise water bank accounting to reflect actual savings of water in those areas critical for salmon survival.
- Support studies of juvenile survival and health and provide adequate funding for the Klamath monitoring programs.
- Develop credible long-term solutions to water management problems within the Klamath Basin.

The Council is concerned that the biological opinion (BO) discussed in your letter, which is used to guide flow releases from Iron Gate Dam, is not based on a biological analysis that addresses the needs of coho salmon. In addition, the impacts to the essential fish habitat (EFH) of coho and chinook salmon were not sufficiently analyzed.

We appreciate the Bureau of Reclamation's (BOR) action to provide water bank assets for additional water for river flow, but believe that the additional quantity of water provided may not be adequate to meet salmon recovery and productivity goals in the basin. Also, because of water bank accounting methods, it is difficult to determine whether water bank allocations result in meaningful changes to water flow. Actions cited in your letter, such as groundwater pumping,

Mr. John W. Keyes III

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may be beneficial in the short term, but it is unclear if these can be sustained over the long term

to provide meaningful benefit to the salmon populations in the basin.

A continuing disease problem (*C. Shasta*) in the main-stem Klamath River significantly affects

juvenile salmon survival and productivity. The emergence of this disease issue supports the need

for a renewed consultation with NMFS. Studies should be established and adequately funded to

determine the rate of in-river juvenile mortality associated with these pathogens and to identify

appropriate mitigating actions.

The Council remains committed to working with you to resolve these issues as we execute our responsibilities under the Magnuson-Stevens Fishery Conservation and Management Act. We invite the BOR to meet directly with us to affect a timely resolution of these issues as the health of salmon stocks remain in question and the lives of the fishing communities dependent on these stocks are severely impacted.

Sincerely,

Donald K. Hansen

Chairman

JDG:ckc

Mr. John W. Keyes III

Page 3 of 3

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Cc: Honorable Barbara Boxer Honorable Dianne Feinstein

United States Senate United States Senate

Washington, D.C. 20510 Washington, D.C. 20510

Honorable Gordon Smith Honorable Ron Wyden

United States Senate United States Senate

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**House Committee on Natural Resources
Subcommittee on Fisheries, Wildlife and Oceans**

**“A Perfect Storm: How Faulty Science, River Mismanagement, and Ocean
Conditions are Impacting West Coast Salmon Fisheries”**

James Litchfield
Northwest RiverPartners
May 15, 2008

Madam Chairwoman and members of the Subcommittee, it's a pleasure to provide you with my testimony today. My name is James Litchfield, and my background has focused on fish and wildlife recovery planning and the interactions between fish listed for protection under the Endangered Species Act (ESA) and the Federal Columbia River Hydropower System (FCRPS). I frequently, provide strategic and technical advice concerning the state of the latest scientific findings on salmon recovery and potential strategies to achieve recovery and delisting goals. I was one of a team of seven scientists on the Snake River Salmon Recovery Team tasked by NOAA to develop a recovery plan for the endangered salmon stocks in the Snake River. Most recently I have been involved in the 2 year collaborative process to develop the Biological Opinion addressing operations of the federal dams on the Columbia and Snake Rivers. For that reason, I would like to focus on the question raised by the subcommittee on the state of science, particularly as it applies to the Columbia and Snake River systems.

I am here today representing Northwest RiverPartners. Northwest RiverPartners is an alliance of farmers, electric utilities and large and small businesses in the Pacific Northwest that advocates for the use of best science and wise investments in salmon recovery efforts in the Northwest. The alliance promotes all of the benefits of the rivers: fish and wildlife, renewable hydropower, agriculture, flood control, commerce and recreation.

An Unprecedented Science Approach

I thank the Subcommittee for this inquiry into the impact of the current confluence of science, human management activities and ocean conditions on West Coast salmon. This is an important public policy inquiry; however, it must be grounded in our best scientific knowledge to be effective at addressing real world problems.

On May 5th NOAA Fisheries presented to Judge Redden, Judge King and the public three Biological Opinions (BiOps). These opinions cover the operation of the Federal Columbia River Power System, the operation of Bureau of Reclamation dams in the upper Snake River and the plan for harvesting fish. This includes the harvest of salmon and steelhead listed under the Endangered Species Act in the Columbia and Snake Rivers developed under the US v Oregon process, overseen by Judge King.

All three of these BiOps are supported by a common scientific foundation in a document called the Supplemental Comprehensive Analysis (SCA). The SCA is 1,230 pages developed through an unprecedented collaborative process. The Collaboration was not spontaneous, but rather ordered by Judge Redden to insure that NOAA would benefit from the scientific expertise of the sovereign parties involved in litigation over NOAA's BiOps. The sovereign parties involved in this collaborative effort included the four Northwest states and seven American Indian Tribes along with five federal agencies. The Collaboration involved these disparate parties working together for over 2 years and produced much of the analysis that provides the scientific foundation for the new NOAA FCRPS BiOp.

The Collaboration took a new approach to evaluating salmon status and what is needed to avoid jeopardy and ultimately achieve recovery. This approach focused on empirical data to describe the **historic condition** of the major population groups that make up each listed evolutionary significant unit (ESU). Based on this empirical data it was possible to estimate the **current status** of the salmon and steelhead populations factoring in the numerous changes the region has made improving salmon survival over the last 20 years. The Collaboration also evaluated the key **limiting factors** that are currently impacting fish survival and the likely response of fish populations of additional actions in the BiOp to improve productivity and genetic diversity.

This scientific process, analysis and analytical framework took a completely new scientific approach that focused on the unique needs of each listed salmon species. It literally put the needs of the fish first from a scientific perspective and in this way it is far more comprehensive and targeted to addressing activities or obstacles that limit salmon survival. It is important to understand that this species-specific analysis is much more useful in describing factors that drive salmon lifecycles, including **all human affects**, from headwaters to the ocean and their return to the spawning grounds.

This sovereign-based collaborative effort opened a normally closed process among federal agencies and resulted in a BiOp based on the best available science. Even though this extensive scientific collaboration was able to evaluate all sources of human caused mortality, not all human impacts on salmon survival have been **consistently** addressed in the BiOps. Much of the region's investment and survival improvements continue to focus on the hydropower system. The focus on hydropower improvements continues even though the latest research from NOAA is showing that juvenile salmon survival through the Lower Snake and Columbia Rivers is now higher than it was in the 1960s when there were only four dams in the Lower Columbia River (NOAA Presentation to the Policy Work Group, Smith, Williams and Muir, July 26, 2006).

Hydrosystem Performance Standards

The new FCRPS BiOp commits federal agencies to continue to improve survival at the dams. The hydro performance standards are greater than 96 percent survival for juvenile salmon migrating downstream through the dams in the spring, and 93 percent for summer migrants at each dam. These are extremely high survival commitments but they can be achieved.

It is obvious that survival of fish through any particular reach can never achieve 100 percent and as we try to achieve higher and higher survivals it becomes exponentially more difficult and costly. It is also important to recognize that salmon mortality is high in a natural river system where predators, diseases and other conditions are harsh. That is why Mother Nature has equipped these fish with a life cycle that provides returning female adult chinook with 5,000 eggs! Yet for the population to remain stable only two of these eggs need to survive to spawn to replace their parents.

Recent NOAA research (Smith, Muir and Williams, November 2007) shows that survival of fish in free flowing sections of the Snake River above the uppermost dam (Lower Granite) is directly proportional to how far the fish have to migrate to reach the dam. Fish released a relatively short distance (100 km) from Lower Granite dam survived at a relatively high 76 percent, yet survival for fish released over 500 km from the dam was less than 45 percent. This research shows that even for fish not passing through dams there are fairly high rates of natural mortality. Nevertheless, it is important to note that there also is cumulative mortality experienced by fish migrating downstream. NOAA's estimates for the survival in 2007 from above Lower Granite dam to below Bonneville dam are 56.0 percent for yearling chinook and 39.2 percent for steelhead.

Other NOAA research (R. Lynn McComas, et al, March 2008) studied survival in the free flowing reach from Bonneville dam (the lowest dam in the system) to the estuary. This research showed that the river below the last dam that juvenile salmon migrate past is also an area of significant mortality. In fact, this research found that survival from Bonneville dam to the estuary for yearling chinook was 69, 68 and 81 percent for 2005 – 2007. This research shows that even though survival at the dams is high, and reaching practical limits, natural mortality in free flowing stretches of the river above and below the hydropower system remains high and, in some parts of the system such as the estuary, is currently a key survival bottleneck limiting overall fish survival.

Hatcheries and Harvest Practices Create Risks

For most of the 13 listed salmon and steelhead in the Columbia River there continues to be concern over the interaction between hatchery practices and the survival of naturally spawning (wild) fish. NOAA's Supplemental Comprehensive Analysis identifies the following risks from hatchery programs.

“[T]here is the potential for hatchery programs to increase the extinction risk and threaten the long-term viability of natural populations. For example, because the progeny of hatchery fish that spawn in the wild are known to be less likely to survive and return as adults than the progeny of natural-origin spawners (Berejikian and Ford, 2004), the fitness of a spawning aggregate or natural population is likely to decline (termed, outbreeding depression) if hatchery and natural-origin fish interbreed. For steelhead, outbreeding depression has been found to occur in the progeny of matings of hatchery and wild fish, even when the hatchery fish are the progeny of wild fish that were raised in a hatchery. Other potential risks posed by hatchery programs include disease

transmission, competition with natural-origin fish, and increased predator and fishing pressure based mortality.”

A recent report entitled, “Genetic Effects of Captive Breeding Cause a Rapid, Cumulative Fitness Decline in the Wild” (Hitoshi Araki, et al, *Science*, October 5, 2007), found that hatcheries used to supplement populations of naturally spawning species can have a significant impact on overall fitness of steelhead. This research showed that lifetime reproductive success of the first two generations of steelhead trout that were reared in captivity and bred in the wild after they were released was significantly impaired. In fact, these researchers showed that genetic effects of domestication reduce subsequent reproductive capabilities by 40% per captive-reared generation. The researchers summarized their findings with the following statement,

“These results suggest that even a few generations of domestication may have negative effects on natural reproduction in the wild and that the repeated use of captive-reared parents to supplement wild populations should be carefully reconsidered.”

This and other research is now showing that hatcheries can have a major impact on the fitness and genetics of naturally spawning fish. Yet the current strategy for mitigating the impacts of humans on fish populations by merely building another hatchery is over 100 years old. One unintended consequence of increased use of hatcheries is to create significant numbers of fish that compete with natural stocks for habitat and food sources. Hatchery fish can also support larger numbers of predators that also prey on natural fish and encourage harvest rates that naturally produced fish cannot support. Yet, integrating hatchery practices into the region’s recovery efforts lags significantly behind hydropower and habitat improvements. Several efforts are underway to audit and reform hatchery practices but most of the region’s more than 130 hatcheries have yet to undergo ESA consultations that would insure that hatchery practices are consistent with the overall recovery effort.

The current hatchery strategy predates the ESA by more than 70 years. A lot has happened in the field of genetic science since the first hatcheries were constructed. The hatchery strategy was historically based on the premise that a “fish” is a “fish” and that loss of one fish to habitat degradation, dams, irrigation, harvest and increasing human population pressures was easily compensated by merely producing more fish in hatcheries. However, the new paradigm under the ESA requires the preservation of unique life histories that NOAA calls Evolutionary Significant Units (ESUs). ESUs are being protected under the ESA because they represent natural genetic diversity that has allowed salmon and steelhead to evolve for millions of years. The promise of hatcheries compensating for man-caused impacts on salmon habitat combined with the higher harvest rates that large hatchery production encourages has put less productive naturally spawning populations at significant risk of extinction. The current hatchery-harvest strategy is now inconsistent with the ESA’s mandate to preserve every unique life history. This is a fisheries management strategy that must be reformed so that hatcheries can assist in recovery of ESA listed populations.

Dam Breaching a False Promise

You will probably hear that to save Snake River salmon and steelhead the Lower Snake River Dams should be removed. Dam removal is a “silver bullet” advocated by those that believe the construction of the four dams on the Lower Snake River caused all the problems that led to ESA listings for salmon and steelhead.

Yet, one of the biggest problems with proposals to remove the Snake River dams is the limited scope of this strategy. Even if the dams were removed, it would only potentially help 4 of the 13 listed fish in the Columbia River Basin. Removing the Snake River dams is an expensive and controversial strategy that could require so much time and money that it would leave the other 9 listed stocks without significant support.

Removal of dams also couldn't be achieved quickly. Years of political and legal battles will be fought and, even if there is the political will, Congress would need to appropriate significant funds to pay for removal of the four dams, estimated to be over \$1 billion dollars. During the decades of fighting, recovery actions will not be pursued because of the uncertainty that the dams maybe removed at some time in the future. The Snake River dams also currently provide the necessary revenues to fund comprehensive recovery efforts for Snake River anadromous fish.

The four Lower Snake Dams also produce more than 1020 MW of carbon free energy and 2650 MW of sustained power production capacity. These are significant quantities of power production that can serve the needs of a large city the size of Seattle, Washington. You will hear that the energy lost from the dams could be replaced by wind and conservation. This is simply not true. Calls for removing the four Lower Snake dams led the Northwest Power and Conservation Council (the Council), authorized under the Northwest Electric Power Planning and Conservation Act, to evaluate the possible consequences of removing the Snake River Dams to the region and the environment.

The Council's analysis showed that the lost renewable power produced by the dams could **not** be replaced by power from conservation and new renewable resources, such as wind generation. This is because all available conservation and renewable power generation is already allocated to meeting future regional load growth in the Council's regional power plan, and will be acquired with or without dam removal. For this reason, the Council found that if the Snake River dams are removed, the most likely replacement resource would be gas-fired combustion turbines that emit significant quantities of carbon dioxide. In the context of efforts by the region to reduce our carbon footprint, the Council found that, “discarding existing CO₂-free power sources has to be considered counterproductive.”

The Council's analysis specifically showed that if the Snake River dams were removed it would result in increased power production from new gas-fired combustion turbines and by other thermal power plants in the western United States. The new fossil fueled power that replaces the dams would cause the release of 5.4 million tons of CO₂ per year. For perspective, this is equivalent to the CO₂ produced by a 540 MW new modern coal plant.

As a matter of sound science or good public policy it makes no sense to remove renewable, non-polluting power from the Snake River Dams and replace the lost renewable power with fossil fired power plants that accelerate global climate change. Unfortunately, the campaign to remove the dams has diverted significant time and resources from moving forward with the recovery efforts that our region really needs to implement.

Significant Regional Investment in Fish & Wildlife

The Council also monitors Bonneville's expenditures to support fish and wildlife mitigation. Much of the funds documented by the Council are in support of ESA recovery efforts but there are also significant investments in resident fish and wildlife that are not ESA listed. The Council report entitled, "Sixth Annual Report to the Northwest Governors on Expenditures of the Bonneville Power Administration", August 2007, documents the investment by Pacific Northwest ratepayers in fish and wildlife. The Council's report shows that Northwest ratepayers invested about \$9 billion by the end of 2006 in fish and wildlife recovery efforts since the passage of the Northwest Power Act in 1980. The attached graph (see Attachment 1) is from this report.

The results of this massive investment are now being seen through increased hydropower system survivals for most of the listed fish. Moreover, the Bonneville Power Administration has just signed Memorandum of Agreements (MOA) with four tribes and two states that will significantly increase investments in fish mitigation and recovery efforts over the next ten years. The total commitment in these MOAs is reported to be more than \$900 million. Importantly, the actions that will be funded under these MOAs will be scientifically reviewed by the Independent Science Review Panel and the Council. The investment by Northwest ratepayers far exceeds any investment in an ESA-related recovery effort for any other species in the nation. Yet this investment has generally been supported by citizens of the Northwest in the hopes that we can prevent future extinctions and bring about recovery of the salmon that have been affected by the region's hydropower, hatchery, harvest and habitat impacts.

Ocean Conditions - Confounding Factor

It is important to understand, however, that such investments alone cannot solve a problem where factors largely outside our control – ocean conditions – have a dramatic impact on salmon survival and productivity. Ocean conditions are complex and not completely understood by the science community. However, extensive research is underway in the Northwest to better understand ocean food webs and their impacts on salmon survivals and growth. Some of this research is being led by Ed Casillas from NOAA Fisheries Northwest Fisheries Science Center in Newport, Oregon.

Dr. Casillas presented results of his work into ocean productivity to the Council at their meeting in March 2008. This work helps to identify when ocean conditions are supportive of salmon growth and survival and when they are not. This new work has not yet found its way into fisheries management, but it needs to, because it can provide the leading indicators of when harvest can be permitted and when it needs to be restricted. Attachment 2 contains a summary of

a number of ocean productivity indicators that Dr. Casillas measured for four historic years and two possible forecasts of future conditions.

Attachment 2 illustrates the status of various factors that affect salmon survivals. Green shows a good condition, yellow is neutral and red is a poor condition. The first two factors¹ are related to large-scale weather and ocean conditions that have been shown to correlate with upwelling that provides food sources for salmon. Forecasting is still under development and Dr. Casillas said that additional development work is needed before it will be a reliable management tool, but this work is a very promising effort that can allow us to better understand ocean conditions and the likely affect on salmon productivity.

There is little that we can do to change either the weather or ocean productivity. Both are related to critical upwelling that causes the food webs that salmon depend upon to bloom. **The management challenge is to first recognize when ocean conditions are poor for salmon survival and then to reduce human caused mortality as much as possible during that time. It is interesting to note in the previous chart that 2005 was a particularly poor year for ocean conditions. Juvenile salmon entering the ocean that year experienced an oceanic desert. Knowing this could help us to recognize that there are likely to be reductions in salmon populations for the next several years following poor ocean conditions and that fish harvest is likely to need to be reduced.**

When fish populations plummet in the ocean the strategies to reduce human caused mortality are limited. Temporary closure of fisheries is the only management response that can effectively reduce human caused mortality quickly. Because land-based sources of mortality are difficult to affect and are slow to cause changes in numbers of salmon, they are not well suited to sudden drops in salmon productivity in the ocean. If human caused harvest mortality is not reduced when there are low numbers of fish present, it is likely that overharvest will require ESA protection for even more fish. (See striped bass as an example of a successful closure.)

Mixed Stock Fisheries Problematic - Snake River Fall Chinook Example

Even with the high level of protection provided under the ESA, it is difficult to protect weak populations when mixed with much more numerous hatchery fish. The Northwest has our version of the Sacramento fall chinook with the Snake River fall chinook. This fish is listed under the ESA, yet the new FCRPS BiOp reports that it continues to experience extremely high harvest rates of approximately 45 percent. Snake River fall chinook are currently harvested in Alaska, Canada, off the coast of Washington and Oregon, and in the Columbia and Snake Rivers by commercial, sport and tribal fishers.

The high harvest level that occurs in both the ocean and the river is caused by current harvest techniques and the fact that weak Snake River fall chinook commingle with much larger and stronger populations from the Hanford Reach of the Columbia River. In attempting to harvest Hanford Reach fall chinook with non-selective gill nets, almost half of the returning Snake River **listed** fish are also harvested. This makes it extremely difficult to achieve recovery for Snake

¹ The two factors shown in the chart are the Pacific Decadal Oscillation (PDO) and the Multivariate El Nino Southern Oscillation Index (MEI).

River fall chinook while at the same time maintaining the current rate of harvest for other chinook. The region is investing hundreds of millions of dollars in strategies to recover Snake River fall chinook only to have nearly half of them caught – after they have migrated down the river, past the dams and survived years in the ocean – just as they are ready to return and spawn.

Conclusion

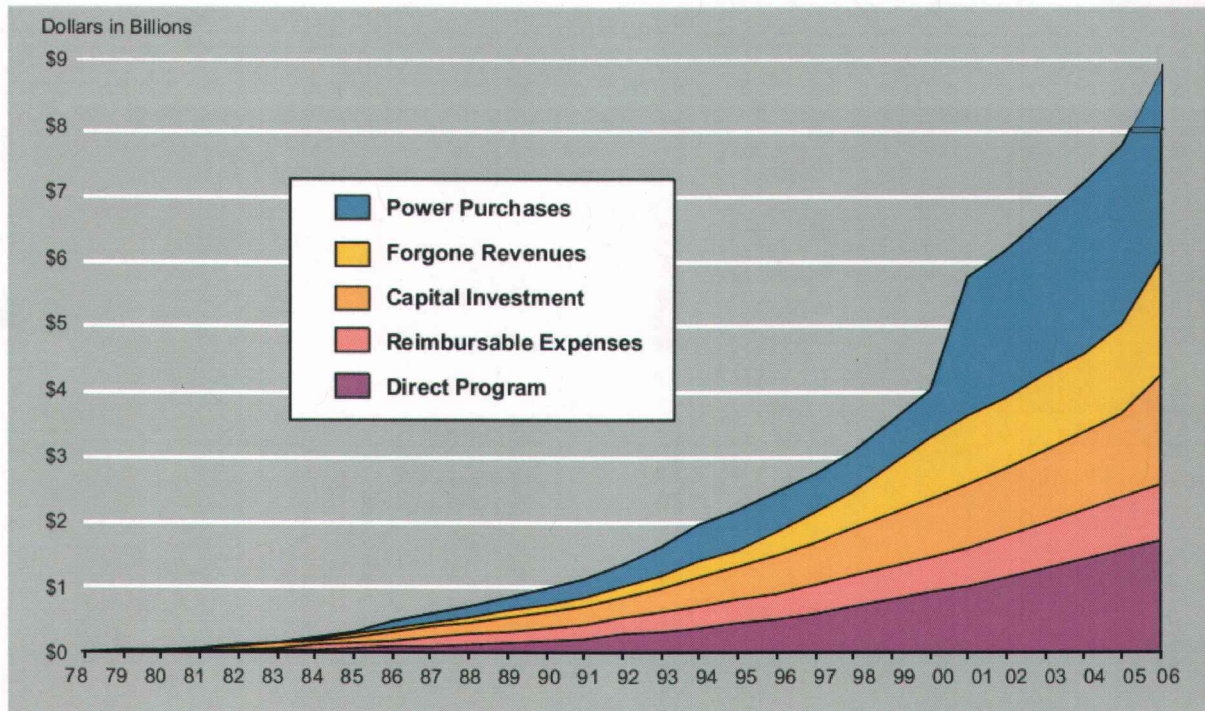
It is obvious that ocean conditions have a major impact on the health and productivity of salmon and steelhead stocks; however, our ability to change ocean conditions is limited. The work of Dr. Casillas is helping us to better understand the weather patterns and linkages in the ocean that cause oscillation in the food web upon which salmon depend. Critical environmental ocean conditions need to be better monitored and understood before we will be able to effectively forecast salmon populations and use this information in harvest management. However, fisheries management strategies need to be revisited based on the current science on the interactions between hatchery and harvest policies and overall salmon survival and recovery. Addressing key factors limiting salmon survival is not without scientific, technical and political difficulty, but it is far more feasible than attempting to control ocean conditions through human policies. Meanwhile, research on ocean conditions must continue.

That is the state of the science, as we know it in the Pacific Northwest. Research has identified habitat, hydro, hatcheries, harvest and ocean conditions as the key factors limiting the recovery of the ESA-listed salmon and steelhead stocks. The region has invested billions in refitting the hydro system and improving habitat for increased salmon protection and NOAA has just produced a new FCRPS BiOp detailing future investments in both hydro and habitat. What we haven't seen, but need to, are commensurate actions on harvest and hatcheries. Since the science and the ability to manage harvest and hatcheries is much more developed than our ability to change ocean conditions, we need to focus on those elements first, while continuing our research on the ocean.

RiverPartners appreciates this opportunity to address the Subcommittee. I am more than happy to answer any questions you may have.

Attachment 1

**Figure 1A: BPA Fish and Wildlife Cumulative Expenditures
1978-2006**



Source: Bonneville Power Administration

Attachment 2

	Juvenile migration year				Forecast of adult returns	
	2000	2005	2006	2007	Coho 2008	Chinook 2009
Large-scale ocean and atmospheric indicators						
PDO	■	■	■	■	●	●
MEI	■	■	■	■	●	●
Local and regional physical indicators						
Sea surface temperature	■	■	■	■	●	●
Coastal upwelling	■	■	■	■	●	●
Physical spring transition	■	■	■	■	●	●
Deep water temp. & salinity	■	■	■	■	●	●
Local biological indicators						
Copepod biodiversity	■	■	■	■	●	●
Northern copepod anomalies	■	■	■	■	●	●
Biological spring transition	■	■	■	■	●	●
Spring Chinook--June	■	■	■	■	--	●
Coho--September	■	■	■	■	●	--

May 12, 2008

MEMORANDUM

TO: MEMBERS, SUBCOMMITTEE ON FISHERIES, WILDLIFE AND OCEANS

**FROM: KAREN HYUN, SUBCOMMITTEE STAFF (6-0200)
EMILY KNIGHT, SCIENCE ADVISOR (6-5226)**

SUBJECT: OVERSIGHT HEARING ON THE MANAGEMENT OF WEST COAST SALMON FISHERIES

At 10:00 a.m. on Thursday, May 15, 2008, in Room 1324 of the Longworth House Office Building, the Subcommittee on Fisheries, Wildlife and Oceans will hold an oversight hearing on the management of west coast salmon fisheries.

On April 10, 2008, the Pacific Fishery Management Council voted to close the 2008 commercial and sport Chinook fishing season in Oregon and California. This unprecedented decision responded to abysmal population projections for Sacramento River fall run Chinook salmon.

The collapse and closure of the salmon fishery will also have substantial and cascading economic impacts on fishing communities in California and Oregon. Experts estimate that the fishing season may also be closed in 2009 and 2010 or longer. The total adverse economic impact to the fishing industry in California alone could be \$249.5 million, when impacts to related industries such as docks and harbors, boating, equipment supply, and restaurants are considered. In response to the shutdown, Commerce Secretary Carlos Gutierrez declared a commercial fishery failure for the west coast salmon fishery opening the door for Congress to appropriate Federal aid to the states.

While reasons for the collapse of the Sacramento fall run Chinook are complex, agency scientists have pointed to ocean conditions, such as lack of upwelling, as a potentially determining factor. However, salmon stocks region-wide have been in slow decline for decades due in large part to many unfavorable human-caused impacts, such as habitat loss.

In the early 1990s, a number of salmon species known as evolutionarily significant units (ESUs) of salmon on the three major salmon rivers of the west (the Sacramento in CA, the Klamath in OR/CA, and the Columbia/Snake in OR/WA) were listed under the ESA. Section 7 of the ESA requires NOAA-Fisheries to prepare a biological opinion (BiOp) to ensure that Federal agency actions, such as water deliveries, are not likely to jeopardize the continued existence of any endangered or threatened species, or result in the adverse modification of habitat. Since 2001, the courts have determined that National Oceanic and Atmospheric Administration (NOAA) Fisheries has failed to produce Biological Opinions (BiOp) based on the best scientific and commercial data available, as the law requires.

In this hearing, the Subcommittee on Oceans, Fisheries, and Wildlife will examine reasons for NOAA Fisheries' failure to produce legally defensible BiOps on the Sacramento River, the Klamath River, and the Columbia/Snake Rivers, and explore measures to strengthen management so that salmon ESUs are resilient and can withstand inevitable changes in ocean conditions. The Subcommittee will also listen to testimony from members of the fishing community to better understand the potentially devastating economic impacts the closure of the west coast salmon fishery will have.

Background: Salmon Ecology and Management

Salmon live as juveniles in fresh water, migrate to the ocean to develop, and when sexually mature they return to freshwater to spawn. Each stage of the salmon life cycle has different requirements. Redds or nests must be dug in gravel substrate; eggs need clear, cool, oxygen-rich water to survive. The next life stage, fry, requires higher river flows to push them downstream. Smolts and adults grow larger and more quickly when ocean productivity is higher. Mature salmon can return in higher numbers in impediment-free rivers. While the salmon's ability to transition between habitats is extraordinary, their lifecycle can be impacted in many places and at various stages of their development.

NOAA Fisheries manages fisheries in federal waters which are defined as those water from 3-200 miles offshore pursuant to the Magnuson-Stevens Fisheries Conservation and Management Act (MSA). For the most part, fisheries management under MSA deals with harvest of marine species, or fish that only live in the ocean. When salmon are in the ocean, they are managed principally under the MSA.

In key ways, the federal ESA can dramatically affect river management of salmon. Once a salmon ESU is listed, NOAA Fisheries must issue a BiOp that ensures that actions by other federal agencies do not jeopardize the continued existence of a listed ESU. Even though BiOps only cover listed ESUs, NOAA Fisheries analyzes actions that most likely impact all salmon in the river basin. Other federal agencies, state agencies, and other local governance structures look to BiOps for guidance in managing the river. BiOps also serve as a useful tool to direct scarce resources towards actions recommended as part of the recovery efforts. Finally, it is fully within NOAA Fisheries' authority to issue strict measures on river operations to protect listed salmon.

If NOAA Fisheries fails to produce a scientifically based, legally defensible BiOp, declines may occur in both listed and unlisted populations of anadromous fish, making them less able to withstand inevitable changes in ocean conditions.

NOAA's Biological Opinions

When an action proposed by another federal activity may impact a listed species, the action agency must consult with NOAA Fisheries to ensure that the proposed action authorized, funded or carried out is not likely to jeopardize the continued existence of a listed species or adversely modify its habitat. If NOAA Fisheries determines that the proposed action could jeopardize the continued existence of a listed species, the law requires NOAA Fisheries to prepare reasonable and prudent alternatives (RPA) that outline mitigation efforts needed to prevent species extinction.

Over the last seven years, on several occasions, BiOps for listed salmon ESUs in the Sacramento, the Klamath, and Columbia/Snake rivers have been deemed inadequate in federal courts by three different judges. The courts found that NOAA Fisheries 1) failed to use the best available science in analyzing jeopardy, 2) issued conclusions that do not match their scientific findings, 3) relied on mitigation measures that are either not likely to occur, or do not even address the actual source of mortality, 4) only analyzes whether or not actions will jeopardize ESU survival, not ESU recovery, and 5) fails to account for the impacts of global warming in BiOps that guide river operations for a decade or more.

In each of these BiOps deemed inadequate by the courts, salmon populations trended further towards extinction as opposed to recovery. Other populations of salmon stocks in those basins which have not been listed have also declined. Recent studies have suggested that the closed Sacramento fall run Chinook fishery, which is currently not listed could be comprised of 90% hatchery fish. Some scientists have suggested that population declines in this economically valuable ESU would easily justify protection under the ESA. Given what appears to be a universal trend in overall anadromous fish population numbers and resiliency, it is not necessarily surprising that a year of unfavorable ocean conditions can result in a massive fishery closure.

Appendix Two summarizes Bi-Ops remanded by the courts.

Conclusions

There are significant questions regarding the repeated failure of NOAA to draft BiOps that can pass court review. It is especially alarming when NOAA Fisheries' conclusions of no jeopardy do not match the agency's own scientific findings, yet the Bi-Ops are nevertheless approved.

In the case of these three rivers, protection of threatened and endangered salmon is mired in litigation, and listed ESUs are not recovering as mandated by the ESA. At the same time, non-listed ESUs that sustain fisheries are also declining.

Prior to this year's shut down of the Sacramento fall run Chinook fishery, Klamath river salmon stocks collapsed, resulting in an economically devastating fisheries closure in 2006 that cost taxpayers \$60.4 million in disaster assistance. The Fisheries, Wildlife and Oceans Subcommittee has the responsibility, through its oversight capacity, to ensure that NOAA manages fisheries sustainably, and implements the ESA as Congress intended.

WITNESSES

Panel I:

Sam Rauch, Deputy Assistant Administrator for Regulatory Programs, NOAA

Mike Rode, Formerly with California Fish and Game

Dr. Jack Williams, Trout Unlimited

Jim Litchfield, Litchfield Consultant Group

Panel II:

Joel Kawahara, Fisherman, Seattle, WA

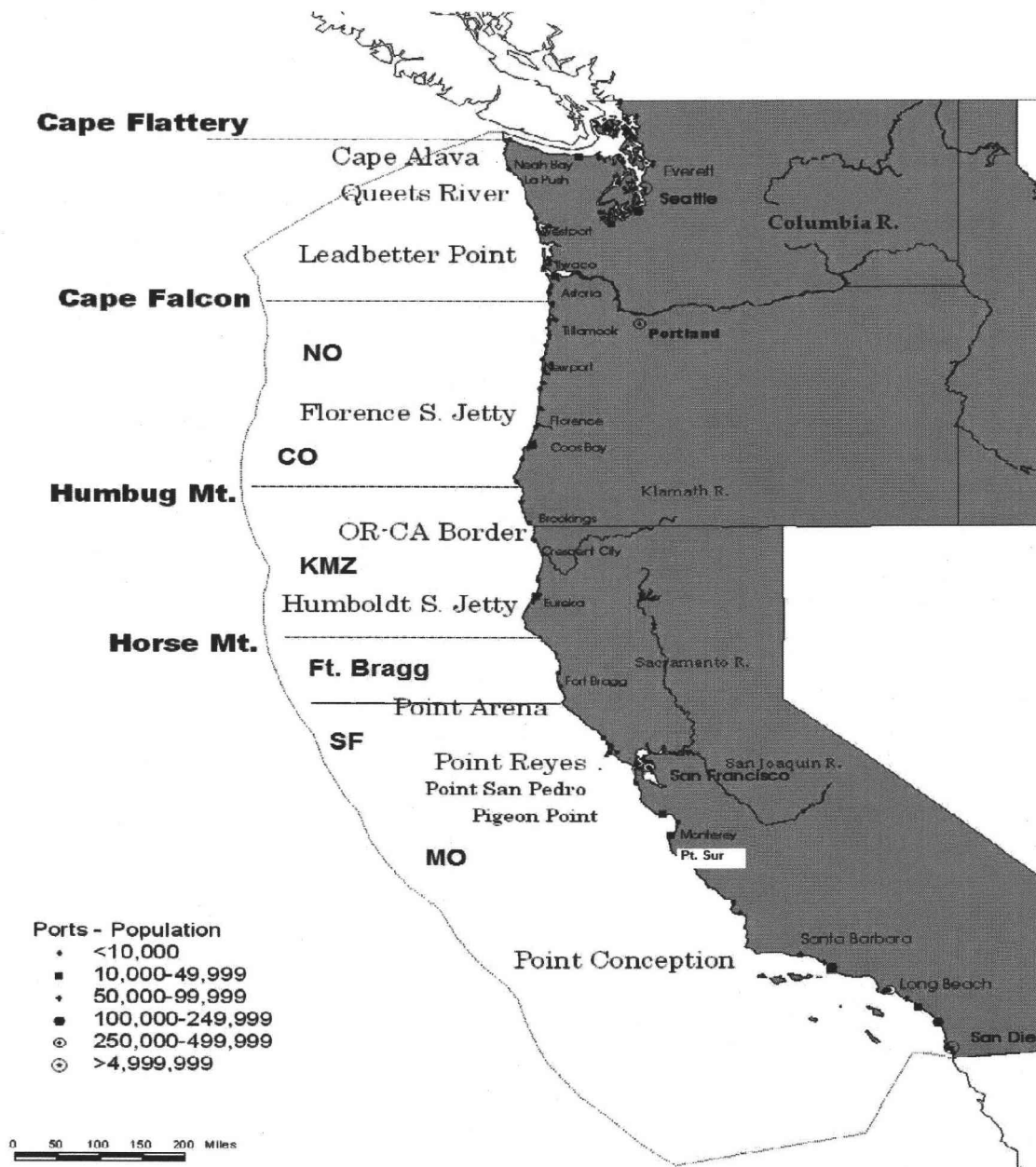
Dick Pool, Pro-Troll Fishing Products, Concord, CA

Roger Thomas, Golden Gate Fishermen's Association, San Francisco, CA

Laura Anderson, Restaurateur and Wholesaler, Local Ocean Seafoods, Newport, OR

Jason Peltier, Delta-Mendota Water Authority, California

Appendix I - Map of West Coast Salmon Fisheries Landmarks: 2008 Closure from Point Falcon, OR to U.S.-Mexico Border¹



¹ Pacific Fishery Management Council Salmon Technical Team. (2008) Preseason Report III: Analysis of Council Adopted Management Measures for 2008 Ocean Salmon Fisheries.

Appendix II – Summary of Remanded BiOps on the Columbia/Snake, Klamath, and Sacramento Rivers

Date	Remanded BiOp	Reasons for Remand	NOAA Response
March 28, 1994 (Idaho Dept. of Fish and Game v. NMFS – Marsh)	May 26, 1993 – NMFS BiOp for operation of the FCRPS	• Ruled arbitrary and capricious • BiOp used a baseline of 1984-1990 for data, even though 1986-1990 were drought years. Prior to this, a 1975-90 baseline was typical. • BiOp did not include structural improvements to dams.	March 2, 1995 – NMFS issued a revised BiOp
May 7, 2003 (NWF ² v. NMFS – Redden)	December 21, 2000 – NMFS BiOp for operation of the FCRPS	• Ruled arbitrary and capricious • NMFS limited the scope to mainstems of Columbia and Snake Rivers • Relied on non-federal mitigation	November 3, 2004 – NMFS issued a revised BiOp
October 7, 2005 (NWF v. NMFS – Redden)	November 3, 2004 – NMFS BiOp for operation of the FCRPS	• Ruled arbitrary and capricious • Failed to consider nondiscretionary projects' impacts • Failed to incorporate degraded baseline • Inadequately evaluated impacts of dams	May 5, 2008 – NMFS BiOp for operation of the FCRPS
July 17, 2003 (PCFFA ³ v. BOR ⁴ – Armstrong)	May 31, 2002 – NMFS BiOp on Klamath Project	• Ruled arbitrary and capricious • Phase I and II of the BiOp covers eight of the ten-year plan and would not avoid jeopardy	
April 16, 2008 (PCFFA v. Secretary of Commerce – Wanger)	October 22, 2004 – NMFS BiOp on CVP	• Ruled arbitrary and capricious • Failed to explain contradictory evidence as to the survival and recovery • Failed to analyze the adverse effects and modification on critical habitat • Failed to look at global climate change	

² National Wildlife Federation

³ Pacific Coast Federation of Fishermen's Association

⁴ Bureau of Reclamation

Committee on Natural Resources

U.S. House of Representatives
1324 Longworth House Office Building
Washington, D.C. 20515
(202) 225-6050; Fax (202) 225-1931

Written Testimony Format Requirements

The guidelines apply to materials you submit to the Committee for inclusion in the printed hearing record. During the hearing, you may submit additional statements and exhibits or supplementary material solely for distribution to the Members of the Committee. All testimony and materials must be received by the Committee at least **two working days** before the day of the hearing, failure to comply with this requirement may result in the exclusion of the written testimony from the hearing record and/or the barring of an oral presentation of the testimony. (Committee Rule 4(b)).

Each statement and exhibit presented to the Committee must conform to the guidelines listed below. We will not print statements or exhibits not in compliance with these guidelines; however, we will retain such materials in the Committee files for review and use by the Committee.

FORMAT: Please use typed single space letter-size (8½ x 11) white paper not to exceed a total of 12 pages. Electronic Copies of your testimony provided to the Committee may be in Microsoft Word (provided it is saved with no tracking), or WordPerfect, text (ASCII).

Please do not send documents in .PDF format.

NO COVER PAGE. No cover page is needed, although your name, title, the organization that you represent, and the date and title of the hearing should be stated at the beginning of your written testimony:

ATTACHMENTS: If you submit attachments or exhibits to your testimony please include them as **separate items** at the end of your testimony. If attachments are more than 10 pages (in addition to your original testimony) or on paper larger than 8½ x 11, we will not accept them for printing. Instead, you should paraphrase or quote as needed. If including charts, tables, maps, or photographs, they should be included on separate pages, not within the text of a page. As with your testimony, we would appreciate a copy of all attachments in electronic form. Copyrighted material will not be duplicated by the Committee.

PUBLIC ACCESS. The Committee provides public access via Internet through the World Wide Web at the U.S. House of Representatives at <http://resourcescommittee.house.gov/> (or the Library of Congress <http://www.house.gov/>).

THINGS TO AVOID: Underlining, footnotes, capitalization of the whole document or solid blocks of text.

DISCLOSURE REQUIREMENT
Required by House Rule XI, clause 2(g)
and Rules of the Committee on Resources

1. Name: Roger Thomas
2. Business Address: PO Box 40, Sausalito, CA 94966
3. Business Phone Number: 415-674-3474, 415-760-9362
4. Organization you are representing:
 Golden Gate Fishermen's Association
 F/V Salty Lady
5. Any training or educational certificates, diplomas or degrees or other educational experiences which add to your qualifications to testify on or knowledge of the subject matter of the hearing: No
6. Any professional licenses, certifications, or affiliations held which are relevant to your qualifications to testify on or knowledge of the subject matter of the hearing: USCG Master License - 40 years
7. Any employment, occupation, ownership in a firm or business, or work-related experiences which relate to your qualifications to testify on or knowledge of the subject matter of the hearing:
 Owner of 4 Commercial Passenger Fishing Vessels (CPFV) commencing in 1968. I am presently the owner/operator of the 56 foot CPFV Salty Lady. Extensive experience in operating from Point Arena to Point Sur, California, with primary focus out of the San Francisco Bay area for salmon fishing.
8. Any offices, elected positions, or representational capacity held in the organization on whose behalf you are testifying:

Golden Gate Fisherman's Association: I have been a member of this since 1968, elected to the Board of Directors in 1969 and was subsequently elected President in 1973 and have continued to serve in that capacity since.

Pacific Fishery Management Council:

 Salmon Advisory Subpanel 1977-1983
 Council Member late 1983 - 1985
 Council Member 1986 - 1989
 Coastal Pelagic Species Advisory Subpanel 1990 - 1997
 Council Member - August 1998 - June 2006

Pacific States Marine Fisheries Commission:

California Charter Boat advisor from 1975 to present time

MAFAC member 1984 - 1987

National Sea Grant Review Panel member 1983 - 1992

Central Valley Fisheries Coalition member 1992 - 1999

Bay Delta Advisory Council member 1995 -2001

9. Any federal grants or contracts (including sub grants or subcontracts) from the Department of the Interior or Department of Commerce (and or other agencies invited) which you have received in the last three years, including the source and the amount of each grant or contract: None
10. Any federal grants or contracts (including sub grants or subcontracts) the Department of the Interior or the Department of Commerce (and or other agencies invited) which were received in the last three years by the organization(s) which you represent at this hearing, including the source and amount of each grant or contract: None
11. Any other information you wish to convey which might aid the members of the Committee to better understand the context of your testimony:

My firsthand experience as an active Captain running a salmon fishing boat gives me a valuable perspective in regards to the resource, ocean conditions and problems associated with the fishery. In addition the committees and Councils which I have participated on, I have been in active in working with my fellow fishers and have worked hard to develop and support a large number of conservation measures to enhance the salmon fishery.

May 7, 2008 (4:46PM) - non governmental witness

TESTIMONY OF ROGER THOMAS
BEFORE THE SUB-COMMITTEE ON FISHERIES,
WILDLIFE AND OCEANS

MAY 15, 2008

My name is Roger Thomas. Thank you for providing the opportunity to speak in regard to the salmon fishery crisis that now exists off the West Coast of California, Oregon, and Washington.

I am here on behalf of the Golden Gate Fishermen's Association (GGFA), which represents the majority of the commercial passenger fishing vessels (CPFV), located in the following California ports: Monterey, Santa Cruz, Half Moon Bay, Berkeley, Emeryville, San Francisco, Sausalito, Bodega Bay, and Fort Bragg.

In addition, I will speak on my own behalf as owner/operator of the vessel Salty Lady.

ECONOMIC IMPACT TO CPFV FLEET IN EACH PORT:

Monterey	
5 vessels.....	\$ 430,000
Moss Landing	
1 vessel.....	90,000
Santa Cruz	
2 vessels.....	160,000
Half Moon Bay	
6 vessels.....	550,000
San Francisco	
7 vessels.....	600,000
Emeryville	
6 vessels.....	700,000
Berkeley	
7 vessels.....	847,000
Sausalito	
6 vessels.....	775,000
Bodega Bay	
2 vessels.....	400,000
Ft. Bragg	
6 vessels.....	<u>900,000</u>
The total for 49 CPFV vessels is:.....	\$5,432,000

This figure represents a direct economic loss to those vessels due to salmon fishing closures. Vessels located in the following ports were not included: Port San Luis, Morro Bay, Eureka and Crescent City.

The California Department of Fish & Game's licensing records indicate 85 CPFVs who are properly licensed and eligible to participate in the recreational salmon fishery.

The percentage of loss by vessels due to salmon closure ranges from 50% to 100% of total income. This is variable due to seasons, weather and accessibility to other fisheries.

Income losses to CPFVs have a dramatic effect on the local economies.

Most vessel operators have laid off their full-time crew and will utilize part-time help when needed.

Many businesses located in these ports, such as: bait, tackle and booking shops, fuel docks, marine electronic repair, shipyards, marine mechanics will be impacted by loss of CPFV income.

In some years, our fleet carries over 200,000 anglers for salmon fishing. The loss of these fishers will have a direct effect on all local businesses - restaurants, hotels, motels, service stations, tackle shops, etc. This loss is very difficult to measure, but will have a dramatic effect on these communities.

- On May 10, 2008, Mr. Dan Temko, Harbor Master, Pillar Point Harbor, San Mateo County, provided a statement in regard to projected loss due to salmon closure. The loss to Pillar Point Harbor is \$415,970.00. (See attached letter.)
- Margaret Beckett, owner of Huck Finn Sportfishing at Pillar Point Harbor estimates her business loss to be approaching \$60,000.00 in 2008 due to salmon closure. (See attached letter.)

The losses related to the closure of the recreational and salmon fisheries will severely affect all ports and infrastructure that supports the fishing industry.

- FV Salty Lady - based on 2005 business records of salmon revenue earned, 2008 will result in a personal loss of \$155,255.00
- Besides the loss of personal gross income, the value of my vessel, which I always considered a major part of my retirement, has decreased due to this salmon closure.

2008 Salmon Closure

This is the worst crisis the salmon fishery has ever faced. Bad as dams have been on the fish, the droughts of the mid-'70s and early '90s, the El Niño of 1982-83, or the fish kills in the Klamath in recent years, this year will be the first total closure of salmon fisheries in California and Oregon in history.

In response to droughts, El Niño events and the Klamath fish kills in recent years, fishermen have responded through the Pacific Fishery Management Council by recommending the following changes:

- 1978 - Response to drought - Reduction in recreational limit.
- 1992 - Winter Run ESA Listing - Recreational season reduced by two months. Commercial season April opening delayed to May 1st.
- Fishing gear changes to reduce mortality for both recreational and commercial include barbless J hooks and barbless circle hooks while drifting.

These regulation changes in all cases were recommended by the ocean marine harvest groups in a dedicated spirit for conservation of the salmon resource.

Our Fleet supports Practical and Necessary

Actions to Solve the Salmon Crisis

Reduce impacts of export pumping and diversions in the Delta.

- Limit total exports through Delta to a maximum of 4.5 million acre-feet per year and eliminate pumping during periods of peak smolt migration.
- Require mitigation for all direct or indirect losses of salmon.
- Construct state-of-the-art screening and salvage operations at water diversions and pumping facilities including state and federal projects.

Improve water quality in the Delta and on Central Valley rivers and streams.

- Eliminate the Central Valley agricultural waiver to pollution discharge.
- Reduce urban pesticide loading in urban storm runoff.
- Enforce federal and state clean water laws.

Improve access to blocked salmon habitat.

- Remove destructive and obsolete dams, especially on the Klamath River and Battle Creek.
- Remedy passage and entrainment problems, especially on the Yuba River and Butte Creek.
- Keep the gates up all year on the Red Bluff Diversion Dam.

Improve habitat in Central Valley rivers and streams by enhancing flows, providing cooler temperatures and restoring functional floodplains.

- Implement the American River flow standards and fully implement restoration flows on other rivers such as the Trinity and San Joaquin.
- Increase cold water habitat below salmon-blocking dams.
- Systematically provide for restored functional floodplain habitat including mitigation for levee projects that limit salmon rearing habitat.

Reduce impacts of hatchery operations on fish of native origin.

- Mark 100% of hatchery fish released.
- Implement "Integrated Hatchery Programs" and the standards of the Hatchery Science Review Group.
- Truck all hatchery fish to acclimation pens below the delta.

Provide effective governmental leadership.

- Provide funding resources to enable regulatory agencies to do their job.
- Enforce all existing laws and regulations: State and federal Clean Water Acts, Endangered Species Act, mitigation requirements, and river flow standards and regulations.

Acoustically Monitored Movement Pattern of Juvenile Chinook Salmon.

We support the efforts of this project to provide data that is necessary for proper management in the Delta.

Data indicated in attachment titled: Survival and Migration Patterns of Central Valley Juvenile Salmonids shows a survival rate of 2% at the Golden Gate.

We believe in ultrasonic technology and urge continued use of this technology to provide us with information in regard to problem smolts encountered in their travel to the ocean.



San Mateo County Harbor District Pillar Point Harbor

Board of Harbor Commissioners

Ken Lundie, President
Leo Padreddi, Vice President
Sally Campbell, Treasurer
Pietro Parravano, Secretary
James Tucker, Commissioner

Peter Grenell, General Manager

1933 - 2008

Celebrating 75 Years

May 10, 2008

Roger Thomas

Ref: Response to your request for information regarding the Economic Impact to Pillar Point Harbor resulting directly from the Salmon Season Closure.

Dear Mr. Thomas,

The table below lists the projected dollar revenue losses that Pillar Point Harbor expects to see in for the coming fiscal year, resulting from the closure of the entire California Salmon Season. The figures are based on losses already incurred during fiscal year 07-08 and projected to continue through fiscal year 08-09.

The San Mateo County Harbor District provides much needed public services at Pillar Point Harbor in Half Moon Bay California. These services include: Public marinas, launch ramps, trails, parks, beach access, restrooms, Harbor Patrol, and 24 hour Ocean Search and Rescue services. The Last but not least Item, Ocean Search and Rescue Services Is provided by the Harbor District, because there are no Coast Guard Stations on this area of the coast (the nearest stations are San Francisco and Santa Cruz.)

The projected losses listed below will severely compromise the San Mateo County Harbor District's ability to provide these crucial public services:

**Projected Economic Impact to Pillar Point Harbor, San Mateo County Harbor District's
Operating budget for fiscal year 2008-2009 due to Salmon Season Closure**

Berth Revenues decreases	249,458
Transient Berths decreases	45,000
Launch Fees decreases	30,000
Boat Wash decreases	1,500
RV Parking decreases	7,500
Rents and Concessions decreases	100,000
Total reduction in revenues	433,458
Original Operating Revenues	2,003,429
Revenues With Closure	1,569,971
Total Operating Expenses	1,985,941
Shortfall	\$415,970

Sincerely,

Dan Temko, Harbor Master Pillar Point Harbor

One Johnson Pier, Half Moon Bay, CA 94019
(650)726-6626 F 726-4470
www.smharbor.com

Huck Finn Sportfishing
P.O. Box 1432
El Granada, CA 94018-1432
Located at 15 Johnson Pier – Pillar Point Harbor
<http://HuckFinnSportfishing.com>
650-726-7133 Phone 650-726-2525 fax

May 10, 2008

Roger Thomas, President
Golden Gate Fisherman's Assoc.

Re: Request for information regarding potential income loss based on 2008 salmon season closure

Dear Mr. Thomas,

My husband Bill and I have owned our Sportfishing landing in Half Moon Bay since 1990. He has fished all of his life and knows nothing else and I have been a deckhand, licensed captain with my own boat and a landing operator most of my adult life. We book eight independently owned passenger fishing vessels, and receive income from that as well as the bait & tackle sales and fishing licenses to their customers and private boaters. This is how we make our living. Alternative fisheries only provide a small portion of our income. What is happening this year with the salmon season closure has us unsure how long we will be able to continue with our business.

We have had diminishing seasons and regulations have been constantly changing to reduce the take of the Chinook salmon over the years, but a total closure of how we derive most of our livelihood has left us scrambling to figure out what our options for the future might be.

We were fortunate to be eligible for funding from the 2006 Klamath salmon disaster, in the amount of \$33,000.00. That was a salmon season that was still open, but produced bleak results and a greatly reduced clientele. With a total closure like this year, I anticipate financial losses to be greater than that, possibly as much as \$60,000.00. I know that April which is what would have been our opening month of salmon season, this year our cash register revenue alone, without booking fees, was down \$15,000.00, based on the same year comparisons.

We would be happy to provide any further information that you or the subcommittee might need to further clarify the disaster that is happening not only for us but anyone associated with the salmon industry.

Sincerely,


Margaret Beckett



Survival & Migratory Patterns of Central Valley Juvenile Salmonids: Overview



B. MacFarlane, P. Klimley, S. Lindley, A. Ammann, P. Sandstrom, E. Chapman, and C. Michel

Introduction

In 2007, a new project to assess survival and movement patterns of juvenile salmonids, using a high-spatial resolution acoustic design, was funded by CALFED. This 3-year project is run by researchers from the University of California, Davis, & the Fisheries Ecology Division of the Southwest Fisheries Science Center of NOAA's Fisheries Service.

Objectives

- Estimate reach-specific survival
- Determine reach-specific rates of movement
- Influences of environmental variables (hydrologic, land use, riparian corridor) on survival & movement patterns

Collaborators

Several agencies were immediately interested in collaborating with the CALFED funded project.

They have provided additional acoustic tags & receivers, as well as expertise and manpower to address their needs.

Collaborators



U.S. Army Corps of Engineers, San Francisco, CA
 Bay Planning Coalition, San Francisco, CA
 ECOM Consulting, Inc., Redding, CA
 U.S. Fish & Wildlife Service, Stockton, CA
 CA Dept. of Water Resources, Sacramento, CA
 East Bay Municipal Utility District, Lodi, CA
 Hansen Environmental, Inc., Walnut Creek, CA

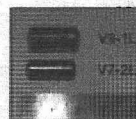
Purpose

Dredging & Disposal, San Francisco Estuary
 Water Experts & Pumping, Delta
 Ecosystem studies & hatchery, Mokelumne River
 Sand mining, Rivers confluence

Technology

Ultrasonic transmitters

Very small (7.9mm dia x 18.5-24mm, ~2.4g in air)
 Uniquely coded signal
 Battery life of 95-150 days
 69kHz works in fresh and salt water
 Surgically implanted
 Vemco VR2 (~\$300 each)



Vemco VR2

Automated receivers

Records tag number and time
 Range of up to 300m
 Easy to deploy and recover
 12-15 mo battery life
 Vemco VR2 (~\$1,000 each)
 Temperature logger @ each site



Fish

Late-fall Chinook salmon



Steelhead

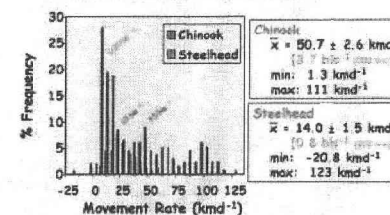


FL: 165 mm (141-198) FL: 217 mm (158-264)
 Wt: 46.5 g (22-82) Wt: 112 g (43-220)
 N: 200 N: 200
 Tag: V7-2L Tag: V9-1L
 % fish wt (air): 3.4 % fish wt (air): 3.4

Fish were tagged at Coleman National Fish Hatchery & released
 @ in Sacramento River near Battle Creek (steelhead)
 @ in Battle Creek (late-fall Chinook salmon)
 @ in lower Sacramento River (additional 200 late-fall Chinook & 50 steelhead for Delta & Estuary studies)

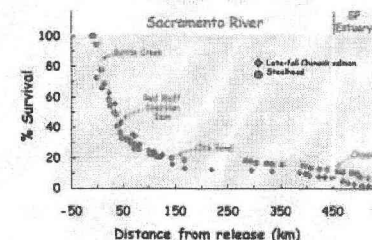
Early Results

Movement Rate 2007 Battle Creek - Golden Gate



- Late-fall Chinook salmon smolts moved rapidly through the river and estuary, averaging 50 km d⁻¹ (3.7 body lengths per sec)
- Steelhead smolts were significantly slower, at 14 km d⁻¹, some may have resided, at least temporarily, based on net movement upstream

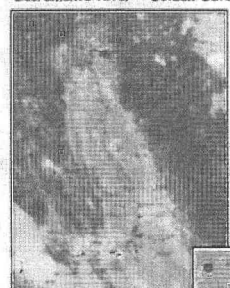
Late-fall Chinook & Steelhead Survival 2007



- High mortality was experienced in the upper reaches of the Sacramento River, particularly in Battle Creek for Chinook salmon. Steelhead released in river.
- By Old Bend, only ~20 % survived
- Survival to Chippis Island was 7% for Chinook & 12% for steelhead
- Survival to the Golden Gate was 2% for Chinook & 7% for steelhead

Study Area

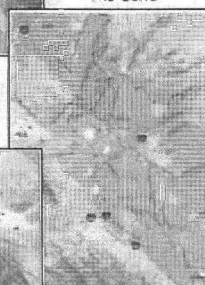
Sacramento River - Golden Gate



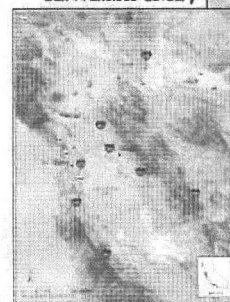
Upper Sacramento River



The Delta



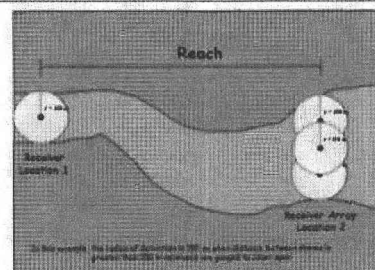
San Francisco Estuary



Golden Gate



Concept: Acoustic receivers are placed along outmigration corridor to define reaches; spaced to increase detection probability of acoustically-tagged fish passage



Website

For more information & updates go to:

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Laura Anderson
Owner/Operator
Local Ocean Seafoods

“A Perfect Storm: How Faulty Science, River Mismanagement, and Ocean Conditions Are Impacting West Coast Salmon Fisheries.”

Wednesday, May 15th, 10:00 a.m., Room 1324 Longworth House Office Building

Synopsis

1. Salmon mean business, family wage jobs, cultural heritage, and pride for our coastal communities as well as a delicious, healthy, and sustainable food source for our nation. My business demonstrates this reality, and there are many other examples like it all along the Pacific coast and throughout the nation.
2. NOAA's failure to adequately protect the rivers where salmon reproduce is contributing to serious, ongoing, coast wide declines in salmon. Coastal communities, seafood related businesses, and American consumers are paying a considerable economic, cultural, and social price for these declines.
3. Going forward, Congress owes it to our region and the country to hold NOAA accountable for following the science and the law, and to protect and invest in the river resources salmon need to thrive. Restoring healthy salmon populations on the Columbia, Klamath, Sacramento, and other rivers will be a considerable task, but it is worthwhile. We can solve this problem if we are willing to follow the science, existing law, and the basic rules of fairness and balance.

1. Introduction

My name is Laura Anderson. I own and operate Local Ocean Seafoods. My business is a seafood restaurant and fish market in our port town of Newport, Oregon. We serve premium quality, local and sustainably harvested seafood to about 10,000 people each month.

I started the business in 2002. I was 31 years old. I am what the media likes to call the new generation of 'natural capitalists' or 'socially responsible business'. We know that we need to make a profit to stay in business, but we also recognize that there are limits to the natural capital on which our business depends, and that we must respect the social and cultural context within which our business operates.

I am the daughter of a commercial salmon fisherman. I started fishing with my dad, Roger Anderson, when I was 14. He started trolling with my grandfather, David Anderson, when he was 11. Salmon was my bread and butter growing up, eventually putting me through college where I earned a degree in biology. After two years in the United States Peace Corps, working with Filipinos on coastal management issues, I returned to Oregon and completed a Master's Degree in marine resource management. Recognizing that the majority of my college classmates were angling for Federal and State fishery management jobs (presumably to work on habitat and harvest issues), I opted to make my mark in the business community, working on economic and marketing issues.

I started Local Ocean Seafoods with a commercial fisherman, Alan Pazar, as my business partner. At the time salmon were still receiving low commodity-based prices and we wanted to provide

more selling opportunities for our local fleet. I'll talk about the rise and fall of our wholesale salmon business in a moment, but first I would like to talk about our current business.

The people who come and eat in my restaurant and shop at my fish market are one of two types: locals or tourists. The locals choose Local Ocean Seafoods because they know when they spend their money with us they are getting the freshest, best quality product available, often caught that day as well as spending their money within their local economy and supporting their commercial fishing fleet.

Tourists come to Newport to experience a part of coastal culture. Seafood, and salmon in particular, is fundamental to that experience. They eat at Local Ocean because they want an authentic experience, consuming seafood that is both local and sustainably harvested.

For both these groups, salmon has been a natural and integral part of that experience. That is until now.

I recognize that my customers often feel conflicted about consuming seafood and salmon in particular. On the one hand their doctors have told them to eat more seafood because of its unsurpassed nutritional content—it is the best source of Omega-3 fatty acids that protect against heart disease and other chronic illnesses. They love the flavor and the simplicity of preparation as well. On the other hand they are concerned about the sustainability of the resource. They hear words like “overfishing” and “threatened and endangered species” and fear that they may be consuming the very last Snake River salmon on the planet.

Their confusion is compounded by sound bites like that from Jim Balsinger, Acting Administrative Assistant for National Marine Fisheries Service. Last week he was quoted in papers across the country as saying, “It’s a tough decision, but the condition of the salmon fishery forces us to close most of it to ensure healthy runs of this valuable fish in the future.”

We agree with the scientific consensus that taking every last salmon fishermen off the ocean will not be enough to “ensure healthy runs in the future”. That, in fact, the biggest thing we can do for salmon is restore adequate flows of clean water in free flowing rivers where salmon reproduce. A responsibility that is well out of the hands of the fishing community. Yet we are ones who bear the burden, economically and culturally, when the salmon decline or go extinct.

2. Local business bottom line

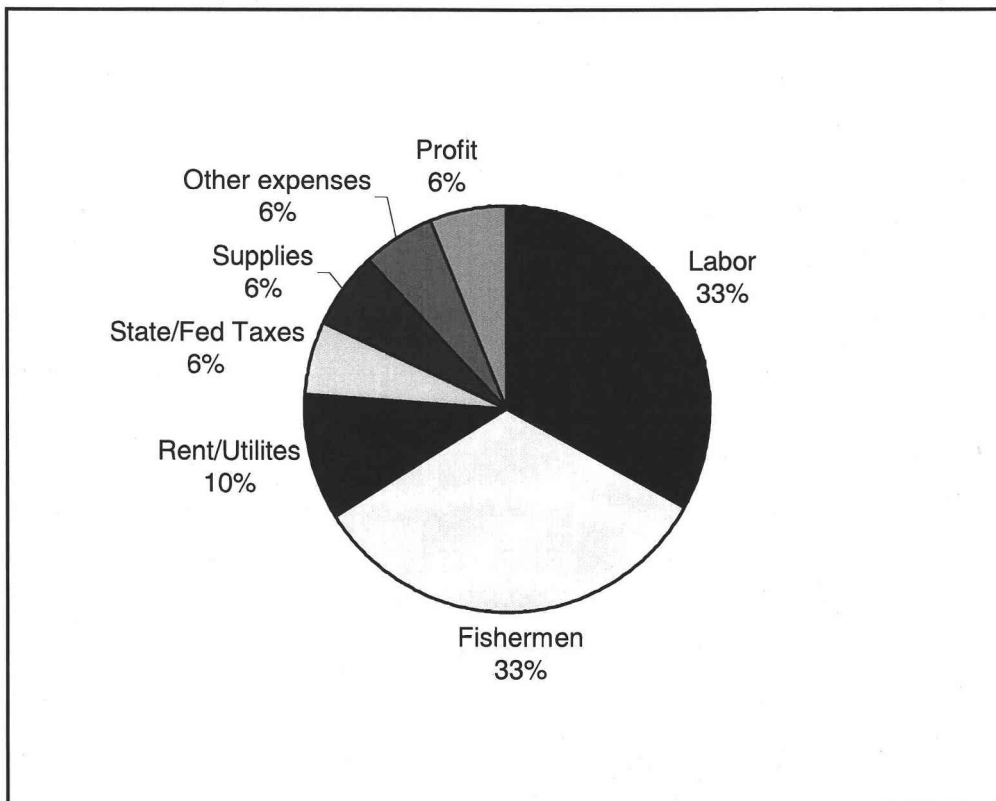
When a consumer spends a dollar in my seafood restaurant about one third of it goes to labor. I employ upwards of 35 people in the summer months in my operation. I provide good paying jobs, health insurance, and a safe and fun working environment. Last year I paid out about a half a million dollars in payroll to folks in our local community.

Another 33 cents of the dollar goes to fishermen who harvest the seafood. We pay top dollar, often more than our port's average price for delivering us premium quality product.

The employees and the fishermen take those Local Ocean Seafoods checks to the bank and spend them on more local goods and services thus circulating those consumers' dollars further. Just this week the owner of a local truck supply and repair business told me that he believed that about 15% of his decrease in business last year was a result of the salmon disaster.

The other 34 percent of the dollar covers all the overhead, state and federal taxes, rent and utilities, banking fees, insurance, supplies and the like. At the end of the day, our restaurant is doing well if we retain 6 cents for each dollar a consumer spends in our restaurant.

Figure 1. Local Ocean distribution of each dollar of salmon sale



Now lets see what that looks like without salmon. Obviously there are no consumers purchasing salmon. That means that the consumers will go elsewhere and find a lower quality product, perhaps imported farmed fish, or week(s) old Alaskan salmon flown down to the lower 48. I now have less money to payout to staff. No money to pay out to salmon fishermen. And my bottom

line suffers, making expansion, capital equipment purchases or other improvements difficult if not impossible.

In 2007, Local Ocean total sales exceeded \$1.5 million. Salmon accounts for a large part of our daily sales. For dinner entrees in its price category (\$15 and up) it represents 37% of sales. For sandwiches, our Wild Salmon Burger is 43% of sales. In our retail fish market, whole fish, fillets, smoked, and canned product collectively represent 22% of sales.

Figure 2. Percent of Total Local Ocean Sandwich Sales (2007) that require salmon.

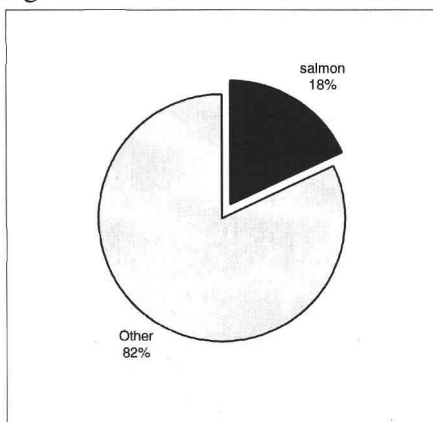


Figure 3. Percent of Total Local Ocean Entree (\$15+) Sales (2007) that require salmon

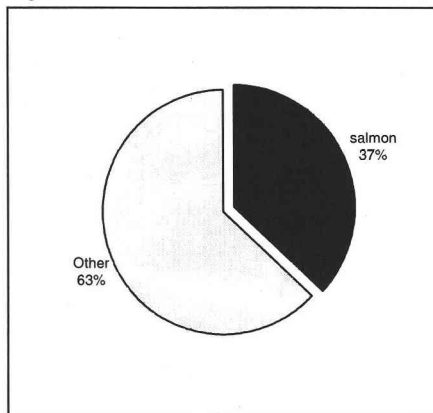
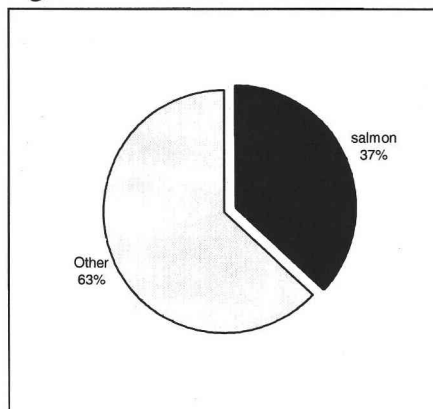


Figure 4. Percent of Total Retail Fish Market Sales (2007) that require salmon.



3. A brief salmon history for Local Ocean Seafoods

Although our restaurant and fish market just opened in 2005, Local Ocean started buying and selling salmon wholesale in 2002. We started with a mere \$122,000 in sales our first year. By year two the customer demand for salmon increased our sales 350% to \$425,000. A typical weekly salmon operation involved sourcing up to 10,000 pounds of fish, offloading and boxing the product in Newport and shipping it to a freight forwarder in Seattle. Once the product reached Seattle it was released for pick up our regular customers.

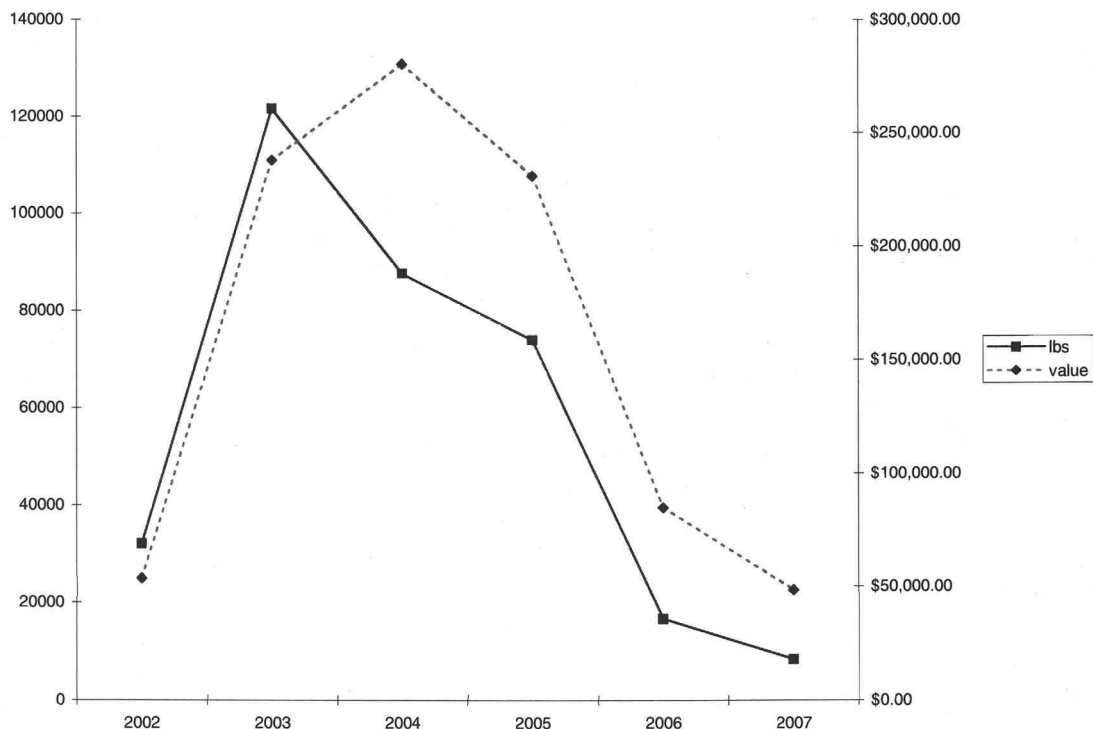
In 2004 sales grew 44%. We were servicing Whole Foods Markets nationwide as well as regional specialty markets like the world famous Pike Place Market in Seattle. We also regularly serviced over twenty white table cloth (Would "high-end" be better? "White table cloth" is a common food industry term but is possibly unknown to others.)restaurants in the Portland area.

I was amazed at how quickly the demand for our product grew. What started as driving a couple thousand pounds of salmon the 300 mile journey to Seattle in iced totes on the back of a flat bed truck, quickly became mainline trucking of 5,000 to 8,000 pounds a week.

It has not possible been possible to be in the wholesale business in the last three years. Once our restaurant opened in 2005 it was everything we could do just to keep us supplied with salmon. We were buying as aggressively, capturing about 15% of the local harvest.

If we were still working exclusively in the wholesale market we would have been out of business two or three years ago. And in fact I have seen a number of wholesale businesses fail in this time. People doing the exact same thing I was--working with high quality fishers to get the best possible product into the best paying markets, and trying to make a living doing it. Now they are working for larger seafood corporations or not working at all.

Figure 5. Local Ocean purchases by pounds and ex-vessel value (2002-2007).



You may ask, “why not sell your customers something else, some other species of fish?” To this I answer with an analogy: Imagine you are getting married and want to buy your beloved a diamond ring. But the storeowner tells you, “I am sorry sir, all the diamonds are now being diverted to fuel the new “Diamond Energy Generation” plant. You can either have a fake cubic zirconia or you can have another one of our other lovely gems, perhaps a ruby, an emerald, or a sapphire.”

You may respond, as many of our customers do, with outrage, “But a diamond is tradition, my father gave my mother a diamond ring, and his father to my grandmother. There is simply no substitute, it is the best, the one, the only wedding ring for my beloved.” Or perhaps you are not among this contingent, and you complacently nod to storekeeper in quiet despair, accepting something less.

Salmon are no different than that diamond. There will be those consumers that choose farmed salmon in lieu of wild, black cod in lieu of salmon, or Alaskan salmon instead of local caught. But for the many of us who have traditions rooted in salmon consumption, who want the best for our healthy bodies and minds, who strive to eat local, sustainable foods, there simply is no substitute.

3. The losses don't stop at the bank

There is much more to this story than mere economic loss. Some businesses, like mine, are diversified and will make the attempt to sell salmon customers other local seafood products. Some fishermen have their boats paid for, a diverse set of gear types to allow them to work in other fisheries, and savings in the bank from the good salmon years. We will be less impacted than most.

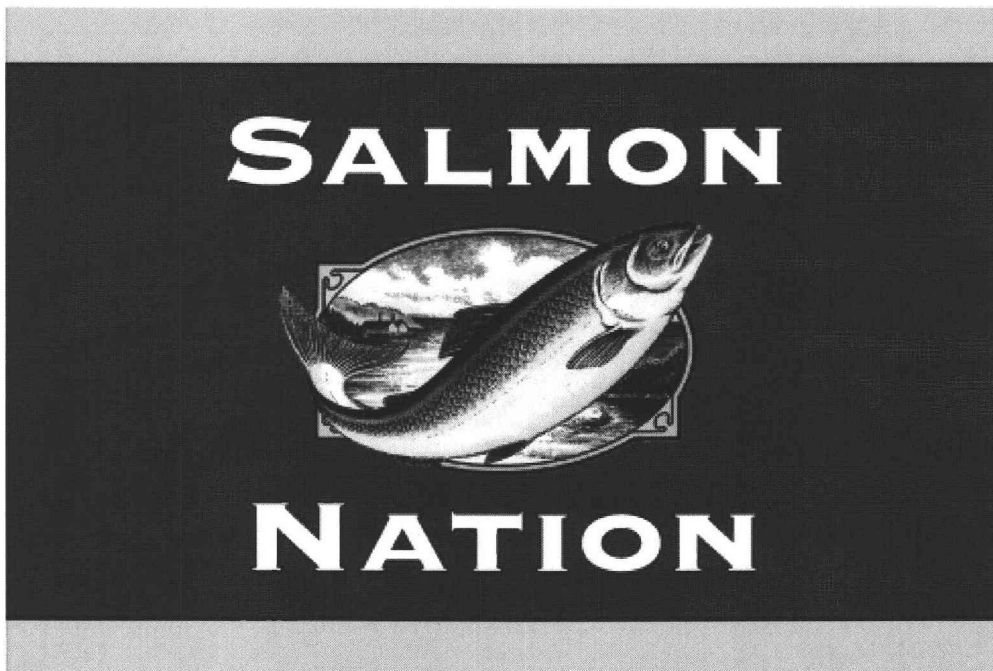
But that is not the case for many of these businesses. In fact many of them are salmon specialists. They don't have other gear, skill sets or savings. The loss of the salmon is the loss of their career, a career they have worked their whole life for. The loss of the fishery can result in a complete loss of dignity and self respect.

When fisheries fail in coastal communities it invariably leads to a cascade of social problems. These include increased drug and alcohol abuse, increase domestic violence and crime, and increase health and human service problems. Many coastal communities, like the little fishing town of Port Orford on the southern Oregon coast are already barely surviving at or below poverty level. A blow like this takes away what is left of a community's pride.

Salmon represent so much more than just money in the bank. The salmon is a powerful icon for our entire Pacific Northwest Region. Coastal people identify with the strength, abundance and resilience of this creature that has continued to coexist with humans. Unfortunately, our coexistence with salmon is at risk of ending.

Preserving and protecting salmon for human consumption is more than just a romantic notion or a wistful environmental plea, it is an appeal to preserve a valuable food economy, culture and tradition—a tradition that spans three generations in my family alone.

Figure 6. The Salmon Nation Flag



5. What can be done?

Citizens of the United States have given the responsibility of stewarding our fish resources to the National Oceanic and Atmospheric Administration. The mission of NOAA Fisheries is stated as “Stewardship of living marine resources through science-based conservation and management and the promotion of healthy ecosystems.”

They further state, “Under this mission, the goal is to optimize the benefits of living marine resources to the Nation through sound science and management.”

While it is clearly understood that the agency cannot control all the factors that affect the status of fish stocks, they are bound by their mandate to use the best available scientific information and management tools to provide the best possible outcome for the species. The agency has repeatedly failed to do so in the case of salmon.

In recent years, NOAA’s plans to protect the weakest stocks of salmon in the Sacramento, Klamath, and Columbia have all been thrown out by courts for being scientifically and legally inadequate. This is an astonishing record of failure, and the salmon and coastal communities have been paying the price.)

With confidence I speak for me, thirty five people employed at Local Ocean, twenty + fishermen from whom we purchase salmon, 25 regional fish markets we once supplied, 18 chefs to whom we in the past delivered fish, and 100,000 customers served at Local Ocean Seafoods each year.

Now multiply my small businesses impact by the more than 200 chefs and other food professionals from Nora’s in Washington DC to Higgins in Portland, Oregon that signed onto the “Chef’s Letter to Congress” last year pleading for improved management of salmon. You now have some idea of the impact that this crisis has on consumers. We are talking about tens of thousands of jobs, millions of consumers and untold other causalities across the country.

Our local customers are reeling from this loss. Many are from fishing families like mine that have long traditions rooted in consumption of the first of season salmon catch. Fishermen bartering and gifting salmon to family, friends and neighbors is a spring custom. Moreover, visitors travel from all over the world to Oregon to experience our coastal culture. Seafood, and salmon in particular, is fundamental to that experience.

The pleasures of eating fresh Oregon Chinook salmon range from the pure sensory enjoyment of the soft, rich, buttery flavor and flaky texture to the deep psychological satisfaction of knowing you are putting in your body one of nature's most wholesome and perfect foods.

The truth is that the real loss is more than economic or consumptive. It is a loss of coastal culture and deep-rooted food tradition. No amount of disaster relief money can replace our salmon heritage. Disaster relief checks will not nourish our human community with good, clean, fair foods. Nor will they nourish our river ecosystems that are dependent on the return of salmon to deliver nutrients back from the ocean.

As business owners and consumers, we implore Congress to hold the agency accountable to its purpose, mission and legal mandates. To ensure healthy populations of salmon and an adequate supply of free flowing, clean water in all our river systems. At least \$200-300 million of our collective coastal economy depends on it. Our Pacific Northwest heritage and traditions are rooted in it.

We recognize that there are competing interests for the fresh river and delta water that salmon need. Increasing pressure from urban development, manufacturing, agriculture, and hydropower are just some of the industries that are vying for this limited resource. However, it is stated that the agency is bound to "[balance] multiple public needs and interests in the sustainable benefits and use of living marine resources, without compromising the long-term biological integrity of coastal and marine ecosystems."

It is clear that the decisions of the last 20 years, particularly in the Klamath, Columbia and Sacramento River systems have compromised the long-term biological integrity of the salmon.

As we move towards a new paradigm of Ecosystem Based Management (EBM), application of our best science will become critical. Indeed in the 2007 publication of "Ten Commandments for Ecosystem Based Fisheries Scientists" (co-authored by three NOAA Fisheries Scientists), there is explicit recognition of a fundamental concept in resource management: a working perspective that is holistic, risk adverse and adaptive. The authors go on to demonstrate the critical importance of maintaining viable fish habitats. The EBM paradigm openly acknowledges the value of maintaining ecosystem resilience and allowing for ecosystem change through time.

For salmon this would clearly call for ensuring an adequate supply of clean, abundant water and spawning grounds in the river. This basic provision has proven to be effective in maintaining the ability of salmon to deal with changing ocean conditions for thousands of years. In terms of EBM, healthy habitat supports salmon resilience even as ocean conditions continually change.

We agree with the majority of fisheries scientists that fishing pressure is not the primary cause for the salmon's recent decline. Loss of habitat is.

Please hold the agency and administration responsible for the basic requirement. Please hold them accountable for their own Biological Opinions.

Using the tools provided by the Magnuson-Stevens Act, the Clean Water Act, the Endangered Species Act, and the Public Trust Doctrine, NOAA should ensure recovery of these protected marine species without impeding economic and recreational opportunities. With the help of the Northwest regional office and the Pacific Fisheries Management Council, NOAA must work with communities on salmon management issues.

6. Moral of the story

In the end, Congress and NOAA should recognize that failure to act is resulting in a huge economic and social injustice. Fishermen, coastal communities and consumers are bearing the brunt of the bargains and deals that have been made for limited water resources. We can expect that in the future the nature of water shortage in the West is going to get worse. Are we simply going to allow the rivers to dry up and watch our natural resources go with them?

At best what is happening is incompetence and failure of the agency to meet its most basic mandates and requirements. At worst the collective impact of NOAA's decisions and actions could be deemed criminal economic exploitation. Either way action is necessary.

Specifically, please hold NOAA accountable for using the best science available. Please hold them within the rule of the existing laws to protect salmon species, namely the Magnusen Stevens Act, the Endangered Species Act, the Clean Water Act and the Public Trust Doctrine. Finally please be forward thinking in crafting legislation and making investments that require the conservation of our water resources. Whether through replacing leaking irrigation pipes, screening irrigation pumps, and removing unnecessary dams. We need to launch projects that make conserving and re-using water a top priority in this country. We need to establish a system to account for and control groundwater withdraws from new wells.

These are the actions that will bring back the salmon habitat and then the salmon. These are the actions that will support free flowing clean water for all species in the future, including humans.

Salmon are dear to me for so many reasons. The infusion of capital into our coastal economy. The existence value of just knowing this magnificent, strong, intelligent and agile creature continues to survive. The cultural value of harvesting and sharing our natural wealth. My memories of summers spent salmon fishing with my Dad. But most of all I really just want to eat salmon - because they taste delicious and they are good for my body!

I am grateful for your time and consideration in recognizing the gravity of this crisis and rectifying this problem. Thank you.

