

**ECONOMIC DECLINE
OF
NORTH COAST FISHERIES:**

Overview and Strategies for the Future

Select Committee on Rural Economic Development
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EXECUTIVE SUMMARY

The Select Committee on Rural Economic Development is an advisory body of the California Assembly. The Committee's mission is to gather information on rural economies, with particular focus on the State laws, policies and regulations that adversely impact rural areas. Based on that information, the Committee's role is to recommend changes to those laws, policies or regulations that will help rural communities in their economic development efforts.

The Select Committee on Rural Economic Development conducted an informational hearing on the economic decline of the North Coast fishing industry on October 2, 1998. Held at the Bodega Bay Marine Laboratory lecture hall in Bodega Bay, California, the hearing featured representatives from many areas of the fishing industry, fisheries researchers, economists, and community development experts. The purpose of the hearing was to learn how current management strategies, regulations, and market forces affect the fisherman's ability to earn a living. Testimony was offered in a series of five panels, with a question and answer period at the end of each panel. The testimony addressed the following subject areas:

- The community impacts of industry decline;
- Current research to improve fisheries;
- Regulatory and management impacts on the resource;
- Alternative marketing strategies to help improve returns; and
- Opportunities in fisheries-related occupations.

Testimony presented at the hearing focused on the need for a more comprehensive and long-term strategy to recover northern California's fisheries. The speakers called for alternative regulatory schemes to reduce fishing effort while allowing participants to continue fishing, and long-term recovery strategies that regulate land use impacts on fishing habitat at the same level as fishing industry impacts. The testimony highlighted the dire condition of most fisheries and called for more funding for habitat restoration and research, and for enhanced economic opportunities for fisherfolk through improved markets, research opportunities, and improved access to harbors.

Based on the participants' recommendations, the Committee made the following findings:

- Restoration of northern California fisheries requires a comprehensive approach to watershed management that includes regulation of timber and agricultural uses, removal of dams, non-point source pollution controls, along with regulation of the fishing industry.
- Land use impacts, such as timber harvesting, agriculture, and hydroelectric power, are not adequately regulated to protect spawning habitat.
- Fisherfolk earn significantly less for their effort today than in past years, prompting over-capitalization and competition commonly referred to as the "race for fish."

- Habitat restoration efforts and research to improve fisheries need additional financial support.
- Competition from foreign farmed fish and Asian imports hurts California fisheries' market access.

Each of these findings is supported by specific recommendations, which may be found at the end of this report.

The fishing industry is one of California's oldest industries, and has consistently provided a vital component of our food supply, as well as being an important link in the state's economy. For many communities, fishing has been the mainstay of economic health. As the industry has failed, these communities have been hit hard, as the loss of both employment and an important commodity reverberate out into the broader community. The industry's decline can be attributed to a number of factors, including habitat degradation, overfishing, and regulatory restrictions. Government intervention into fisheries has been gradual and often too late, as fish populations continue to plummet and recovery efforts yield little success.

The legacy and future health of the fishing industry depend upon sound policies that will help restore sustainable fisheries. The Legislature holds the power to tackle many of the difficult issues raised by this report, but the gravity of the situation must be made clear. The Select Committee on Rural Economic Development offers this information to the Legislature to heighten understanding about the issue and to encourage support for broad policy changes that will halt fisheries decline and move the industry back toward sustainable prosperity.

INTRODUCTION

The North Coast of California has a long history of dependence on natural resources. Timber and fishing supported the area for over 100 years after white settlers arrived, and both industries provided a strong economic base. The bountiful harvests of lumber and fish gave residents the false impression that these resources were inexhaustible, however, and by the time the truth was known, the industries were in decline.

This report focuses specifically on the decline of the North Coast's fishing industry. Regulations and management strategies have failed to limit the impacts on fisheries from land use practices, water storage, and over-capitalization of fishing fleets. As the numbers of a particular species of fish have dwindled, fishermen have moved on to harvest another. Regulations limiting access to a fishery have had the same effect. Gradually, more and more species have been placed at risk as pressure mounts from commercial fishermen struggling to make a living.

Land use practices are also to blame for the loss of anadromous species, such as salmon, steelhead, and trout, all of which are in critical decline. Logging, erosion, and water diversion threaten these species which begin and end their life cycles in California's mountain rivers and streams. Dams built on California rivers for storage and electrical power generation have caused insurmountable damage, both by preventing the return of fish to their native spawning grounds, as well as by releasing rushing waters that scour away any remaining downstream spawning grounds. Last year's placement of coho salmon on the federal list of threatened species was soon followed by proposals to list California's spring and fall run Chinook salmon (*Oncorhynchus kisutch*), the Little Kern golden trout (*Oncorhynchus mykiss whitei*), and the Central Valley steelhead (*Oncorhynchus mykiss*).¹

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The hearing was opened by Assemblymember Virginia Strom-Martin, chair of the Select Committee on Rural Economic Development. Noting the importance of the fishing industry to the region's economic vitality, Assemblymember Strom-Martin stressed her interest in helping the fishing community return to a stable and viable way of life. She acknowledged that the industry's future was tied to land and water policies, and stated her commitment to make informed, forward-thinking policy decisions that would help the industry recover. Assemblymember Strom-Martin also demonstrated that commitment by taking the lead in passing a legislative resolution

¹ California Department of Fish and Game, State and Federally Listed Threatened and Endangered Species, July, 1998

recognizing the first World Fisheries Day. A copy of that resolution is found in Appendix 2 of this report.

Due to the distance Del Norte County fishermen would have had to travel to attend the Bodega Bay hearing, Assemblymember Strom-Martin held a follow-up meeting in Crescent City on October 13, 1998. Attended by approximately 30 Del Norte fisherfolk, the meeting gave members of the local fishing community an opportunity to express their concerns regarding fisheries issues and to learn about the suggestions raised at the earlier gathering.

Comments submitted in writing after both meetings are found in the appendix of this report.

Pietro Parravano

President, Pacific Coast Federation of Fishermen's Associations

"Protecting our fishing heritage"

Mr. Parravano described the importance of the fishing industry throughout the history of North America and early California and its eventual decline. Reduced fish stocks, dams and water diversion, market losses and regulatory restrictions all contribute to the industry's failure. The ensuing business loss has resulted in high unemployment throughout fishing communities across the nation. Parravano said the problem is global in scope, however, as pollution, over-fishing, and habitat loss are depleting fisheries worldwide.

Parravano said planners and social scientists have a misdirected view of fishing communities' plight, viewing the fishing industry as obsolete. Instead, he said a new view of the industry is needed. Fishermen are not interested in retraining, but rather, want to remain active in an industry that could be passed down to their sons and daughters. Aquaculture and mariculture have been suggested as replacements for the commercial fishing jobs lost on the East Coast, but the number of jobs in aquaculture does not compare to the numbers lost. He said the aquaculture industry has its own set of problems, including pollution, habitat destruction, escape of farmed species, and questionable food conversion ratios.

He said the salvation of sustainable fishing communities lies in restoration of healthy fish stocks, access to the resource, and improving access to markets. Research is essential in order to make informed, effective management decisions. Inadequate understanding has left standing questions about the decline of certain fisheries, such as the sardine fishery's collapse in the 1940s. State funding was recently approved to study California's squid fishery, but on the federal level, a similar effort was lacking to study the status of groundfish populations. Parravano cited the Bodega Bay Marine Laboratory's genetic research into salmon, but said the effort has been hard pressed to gain support from either the California Department of Fish and Game (DFG) or from the National Marine Fisheries Service.

He explained that fishermen support research through landing taxes and permit fees, but additional funding is needed. The 1998 State budget allocated funds for the comprehensive fisheries research and management program implemented in AB 1241, which is a start. He praised Assemblymember Strom-Martin's 1997 effort to establish a uniform tax on all fish sold in the State to support DFG, and expressed hopes that the measure could be successfully re-introduced in the future.

Parravano recommended that fishermen and their boats be utilized in carrying out research efforts, noting the wealth of experience, knowledge and equipment they offer. He recommended that boats should be compensated for carrying observers, and that unemployed abalone and urchin divers are a ready resource for researching underwater habitats.

Habitat restoration is essential for healthy fisheries, and Parravano urged that unemployed fishermen be given preference for restoration jobs. He said more funding must be directed toward restoration efforts, and he suggested a portion of the economic impact funding Humboldt County

would receive through the purchase of the Headwaters Forest should be used for this purpose. Logging regulations should reflect restoration concerns by regulating road building in sensitive watersheds. Dam removal would contribute enormously to habitat improvement and should be supported by the Legislature, as should the removal of natural barriers.

Parravano cited the importance of regulations in managing for healthy fisheries, but added that the non-fishing industries that impact fish stocks must also share the burden. The effects of logging, agriculture, and other non-point source pollutants are high, yet regulators will not take the steps necessary to address these impacts. He called for strong enforcement of the Clean Water Act and Endangered Species Act to support the Magnuson-Stevens Fishery Conservation and Management Act, as well as for state-level regulation of human impacts on fisheries.

In addition, Parravano called for funding to dredge small harbors in order to maintain their accessibility by fishing vessels. Marine mammals, which steal salmon off of hooks, hamper gillnet and purse seine fishing, and prey on migrating salmon also impair fishermen's access. He said fishermen have worked closely with conservationists to improve fishing practices and now hope some compromise can be reached on marine mammal controls.

Parravano also called for careful designation of future marine protected areas in order to guarantee the reserves will contribute to conservation and management, and not merely serve as recreational areas for affluent communities. He said salmon fishermen would benefit from a new allocation formula that would allow for greater sharing of salmon stocks between tribal communities and commercial fishermen.

In order to improve conditions for fishermen, market access must be improved. Parravano said this could be accomplished by giving preference to U.S. fishermen, by limiting foreign imports to those nations with comparable conservation measures in place, by greater support for the California Salmon Council and the California Seafood Council, and by facilitating direct marketing efforts wherever possible.

Mike McKenzie-Bahr
Del Norte County Economic Development
"How communities are impacted"

Mr. McKenzie-Bahr described the devastating impacts the loss of fishing jobs has had on Del Norte County. The county's population is 28,000, with the Pelican Bay State Prison population comprising 4,000 of that total. Fishing and fish processing are the largest industries, employing 350 people. Due to the El Niño storms, Crescent City Harbor's 1998 catch was 75 percent below normal. The severe decline caused fish processors to close, and ancillary businesses and tourism also suffered.

Employment alternatives are limited in Del Norte County and former fishermen's income levels have dropped to less than a quarter of what they once were. He said many fishermen have taken jobs as fishing guides, but the anticipated endangered species listing of additional salmon stocks could soon limit those opportunities as well. Others have taken jobs at the state prison. Job opportunities for laid-off fish processing plant workers include low-paying positions at national chain stores, such as Wal-Mart, Kmart, and fast food restaurants. Tourism has declined along with the fishing industry, since much of the area's tourism is connected to salmon fishing.

McKenzie-Bahr said Del Norte County's Welfare to Work mandate calls for 800 people to be placed in jobs, expanding the number currently employed in the county by 15 percent. He said the depressed economy contributes to the county's high rates of domestic violence, alcoholism and drug abuse. The county's local economic development plan includes a grant for a new seafood processing plant that is scheduled for opening in 1999. He said a stable fishing industry is needed for that project to succeed.

He recommended the following actions to help improve conditions for fishermen:

- Implement stable regulations and quotas for both commercial and recreational seasons that will allow fishing communities to plan ahead;
- Base regulations and management schemes on long-range planning that addresses economic and market factors, so fishermen can remain active in a stable fishery;
- Supplement commercial fishermen's incomes through subsidies while recovery work is underway and employ them in habitat restoration and research efforts;
- The state and federal government must make a long-term commitment to support commercial fishing;

and for Del Norte County:

- The Department of Corrections should purchase locally or offer local retailers the chance to bid on contract purchases; and
- Redwood National and State Parks should adopt a master plan that makes tourism a priority.

Mark Wheatley
California Coastal Conservancy
"How communities transition"

Mr. Wheatley described the Coastal Conservancy's work to develop economic opportunities for communities with sagging resource-based economies. The Coastal Conservancy is helping to develop community-based plans in former timber-based communities, and has helped communities develop such projects as farmer's markets, eco-tourism, direct marketing opportunities, and pier reconstruction. The agency also works to restore watersheds and estuaries and to improve public access facilities.

Wheatley said his agency could accomplish more with additional funding, and explained that it is a long-term process with no quick fixes. He added that the University of California Cooperative Extension program provides another important component in helping resource-based communities transition. Among the current project priorities are watershed and estuary protections and public access improvements. He cited the need for landowner incentives to encourage more participation in watershed and habitat restoration activities on private lands.

Commenting that the Coastal Conservancy's work to help former timber communities transition to a new economic base provides a model, Wheatley said the process involved much public participation, with community members working together to plan for economic stability. He said tourism and eco-tourism projects are dependent upon healthy ecosystems. Other factors for project success included effective use and enforcement of regulations, good public relations, maintenance of coastal protection priorities, and coordination of all levels of funding sources.

FINDINGS AND RECOMMENDATIONS

Findings:

- The loss of fishing jobs affects many subsidiary businesses, including fish processors, retail markets, boat and equipment sellers, tourist-related services, and more.
- The loss of fishing jobs has serious socioeconomic impacts in some communities, including high unemployment, spousal abuse and drug abuse.
- Community stability is impacted by the crisis/response approach to the industry, resulting from constantly changing regulations.
- Recovery of fisheries depends on comprehensive watershed planning and landowner commitments to habitat restoration and protection.
- Resource-based economies benefit from community-based plans that help them transition into alternative approaches to resource use.
- The federal Northwest Forest Plan's program to help timber communities develop a new economic base provides a model for fishing communities to follow.

Recommendations:

- The state should provide additional assistance to fisherfolk that are forced out of the industry by regulations.
- The state should develop long-term fisheries management strategies that consider all impacts on the resource as well as the economic and market ramifications of regulations.
- The state should support community-based programs to help communities deal with the socioeconomic impacts of industry decline.
- The state should support comprehensive watershed planning efforts at the local and regional level.
- The state should encourage fisheries habitat restoration and protection through landowner incentives.

Paul Siri

Bodega Bay Marine Lab

"Genetic research and salmon"

Mr. Siri blamed human overpopulation for current scarcities of fish, clean water and other resources. He reported that 50 percent of the North Coast's salmon species are at risk and the remainder were already extinct. He explained that the Bodega Bay Marine Lab began its research in 1989 through an active partnership with the Pacific Coast Federation of Fishermen's Associations (PCFFA). Currently the research involves captive breeding, in an effort to protect native stocks from genetic swapping, which reduces genetic diversity.

Siri said coho salmon are managed as evolutionarily significant units, representing isolated groups coming from different geographic locations. California's strongest remaining coho population is found in Marin County and represents 10 percent of the state's remaining wild salmon stocks.

Siri's research explores whether the Marin stocks will provide seed for replenishing other wild stocks. The laboratory's work also addresses the genetic relationship of the wild stock to the Marin Hatchery Project stock. The work is accomplished through analysis of a small tissue sample, which can reveal a significant diversity among salmon species.

Discussing the impediments to wild salmon migration, Siri said dams cause serious damage to downstream habitat. By retaining sediment and increasing water flows, Siri said dams actually increase downstream erosion and promote the scouring of river bottom spawning habitat.

He explained that the necessary components of sustainability include growth of the resource (fish stocks), restoration of the environment, and equity, which includes social justice factors and development constraints. He reiterated that world population increases are a factor affecting the recovery of fish stocks. He said the peak world fish harvest of 96 metric tons has already been surpassed, yet only 3 percent of the fisheries are in recovery. He added that well over 60 percent of the world's fisheries are fully or over-exploited. Citing expectations that the world population would double in the next 15 to 20 years, Siri noted that the United Nations recently added water shortages and fish scarcity as critical factors to human survival.

Siri added that PCFFA's work to link the fishing industry to research provides the best model for sustainability. He said on its own the industry has provided incentives to rescue winter run salmon and to make predictions on the status of spring run stocks, thus drawing the attention of the public and government.

Dr. Robert Rubin
Santa Rosa Junior College
"Ocean Alternatives"

Dr. Rubin discussed how fish declines are affecting eco-tourism. In Mexico's Sea of Cortez, where sport fishing is an important industry, poor fishery management and overexploitation have led to a decline in billfish stocks. In response, tourism is declining and local businesses are suffering. In the whaling industry, Rubin said 30 to 40 percent of the income is derived from eco-tourism. He said sound research could offer insight for the future of these industries.

Rubin also reported on his research into seal predation on fish, claiming that research revealed that seal predation on fish is less of a problem than it is thought to be. Through a study of Canada's cod fishery, he has found that cod populations fluctuate significantly regardless of the seal populations.

A local study of harbor seals at the mouth of the Russian River analyzed the seal's impact on migratory salmon stocks. After three years work, the study revealed that not all seals eat salmon and those that do are not always successful at catching them. Seal fishing techniques studied included herding fish up against an embankment, where the seals lunge toward the fish. The seals were successful in this approach only one out of 18 times. Analysis of seal feces shows the mammals consumed a substantial amount of lamprey eel and octopus.

Seal fishing in the river mouth was also studied. Rubin said this research revealed that seals have more success catching salmon when water levels were low, allowing them to lie alongside the banks and lunge at their prey. The seals have less success when water levels are increased and the seals are forced to swim to catch fish. Rubin concluded that seal predation could be reduced by 75 percent if higher water levels were maintained.

FINDINGS AND RECOMMENDATIONS**Findings:**

- Approximately half of the North Coast's salmon species are extinct and the remainder is at risk.
- Research to determine the impacts of hatchery stock on species diversity can help in the development of stronger fisheries.
- Dams impact fish habitat by retaining sediment and increasing water velocity, which scours away gravel and other downstream habitat features.
- Sustainable fisheries depend upon healthy, growing fish populations, optimal environmental conditions, and balanced conservation concessions from all human activities impacting the resource.
- Marine mammal impact on migrating anadromous fish is reduced when river levels are kept high.
- Collaboration between the fishing industry and scientists presents a good model for research, linking industry concerns and funding to research and policy recommendations.

Recommendations:

- The state must move quickly to protect remaining salmon populations by protecting and restoring fish habitat.
- The state should support research into improving fish stocks.
- The state should initiate a research program to review potential dam removal, starting in waterways with live salmon populations.
- Strategies for achieving sustainable fisheries should include restoring fish populations, restoring healthy fish habitat, and equitable regulation of all human impacts.
- Water levels in river mouths should be kept high during migratory periods in order to reduce marine mammal predation.
- The state should promote private/public partnerships in fisheries research.

Dr. Jim Wilen
U.C. Davis fisheries economist
"Economics of fisheries management"

Dr. Wilen presented a brief history of fisheries management. He explained that prior to World War II few fishing regulations were in place, with the exception of halibut regulations imposed in 1930, West Coast salmon regulations imposed from the 1930s through 1940s, and earlier restrictions on the catch of fur seals. In 1976 U.S. jurisdiction was extended from 12 miles to 200 miles out from the coastline, lending added protection to U.S. fisheries. The open access approach to commercial fishing worked when the ratio of fishing boats to fish was low, but as gear and capacity increased, season restrictions were imposed. With increasing vessel capacity, regulators were forced to restrict fishing capacity as well.

Wilen said the economics of fishing addresses the question of whether or not fishing generates real returns and whether maximum profits are being reached. He said the answer to both questions is "No," but instead said that fishermen are racing against one another to catch the greatest number of fish.

In an effort to ease the pressure, limited entry fishery management schemes were introduced in the 1960s and 1970s. The combination of regulation and restricted access gave certain participants the right to fish while restricting others from entering the fishery. Wilen said this "limited entry" approach didn't end competition within the fishery, and regulators began limiting fishing capacity factors, such as gear and size of boats.

Wilen said research into ending the "race for fish" has resulted in the concept of individual transferable quotas (ITQs), in which participating fisherfolk are allocated a specific portion of the fishery. New Zealand has adopted ITQs widely, with dramatic results, including eliminating competition between fishermen, higher sale prices for fish, and revenues up to three times higher in certain fisheries. He said that by allocating what was essentially "property rights" to the fishery, stewardship was encouraged and consolidation problems were resolved.

Richard Young
Del Norte trawler
"Reducing fleet size/reducing fishing effort"

Mr. Young described the industry's uncertain future, citing depleted fisheries, ineffective marketing, and conservation restrictions that worked against the fisherman's ability to earn a living. He said the long hours, low pay and uncertainty are discouraging young people from entering the industry, which consequently prevents older fishermen from retiring. Competition between fishermen causes problems for everyone, as do too many vessels, too much gear, too much waste, and too little income.

Young said biology alone can not solve the problems. He called for an end to the race for fish, and said that better numbers of participants and controls on the equipment being used could result in better harvests. He said the issuance of too many licenses and the use of boats with too much fishing capacity only adds stress to fisheries, and he suggested placing limits on individual output, in the form of trip limits or ITQs, as a possible solution. But Young said too often management strategies address only one aspect of the problem, which fails to bring a complete and satisfactory resolution.

As an example he described how California's shrimp fishery operates under a moratorium that will expire in 1999. Without renewal, the protections that program established would be lost. Currently DFG issues crab vessel permits that restrict boat size and capacity, but too many licenses have been issued. He also called limited entry programs inadequate, but Young said the larger problem was a management system that fails to reconcile the need of individuals to earn a living with the need to restrict total harvests. He urged a movement toward matching fleet size and harvest capacity to the sustainable yield level of the resource.

Phil Kline
Eureka crab fisherman
"Groundfish buy-backs"

Mr. Kline endorsed the groundfish buy-back program as necessary for sustainable management of the groundfish fishery, but said it left the fishery over-capitalized. He urged that buy-back programs be amended to purchase fishing vessels as well as licenses when a fisherman leaves the fishery. He urged a mandatory reduction in equipment for those remaining in the fishery and limits on opportunities for commercial fishermen to expand their fishing effort.

Kline cited the significant problem of discards, and urged legislative support for state and federal policies to reduce waste in the fishery. He said current limits on certain species are draconian, while fisheries in far worse condition remain open. He proposed instituting "permit stacking," which allows a single vessel to hold multiple permits, as a means of reducing discards by allowing retention of a larger percentage of the fish caught. Kline urged changing the law to allow the use of all species caught, and proposed grouping all groundfish into one category and regulating through a weight limit, regardless of species.

Gear deployment is another area of concern and Kline said that too often fishing capacity exceeds the allowable catch. He suggested placing limits on fishing gear, on how and when certain types of gear could be used, as well as where it could be used.

He also recommended closing fishing seasons during spawning times for the respective fisheries. He proposed establishing policies to promote the use of equipment designed to avoid killing juveniles and harming the environment. Kline said that economic incentives are the best way to implement such policies, and said the greatest challenge will be obtaining adequate funding to ensure that fisheries management planning can be done right.

Paul Peligrini
Eureka long-liner
"Crab harvest/derby approach"

Mr. Peligrini concurred with Mr. Kline's concerns and said similar problems exist within the crab fishery. The "derby approach," where fishermen are allowed to take as much crab as they can during a short period of time, results in a "race for crabs" which places both vessels and fishermen at risk. He expressed concern for the economic viability of the fishery with its year-to-year regulatory changes. He said increasing competition forces fishermen to increase their effort in order to make a living and he urged that something be done to improve conditions for fishermen.

Peligrini suggested that profits from selling fish that would otherwise be discarded could fund programs to place independent observers throughout the fleet to verify and monitor catch. He noted that such a program could help address the need for better statistics on the numbers of fish taken.

FINDINGS AND RECOMMENDATIONS**Findings:**

- Regulation of the fishing industry has increased as fishing capacity has increased.
- Most fishing boats are equipped to catch far beyond allowable limits, resulting in wasteful bycatch and discards.
- Over-capitalization of fisheries results in fishermen racing against each other to catch the most fish.
- Individual transferable quotas (ITQs) that apportion fish between licensed fisherfolk may provide a means to help reduce competition in certain fisheries.
- Apportioning the resource can encourage better stewardship.
- Removing fishing licenses from the fishery when a fisherman or woman retires fails to address the issue of over-capacity, leaving boats and equipment available to newcomers hoping to enter the fishery.
- Too often management strategies address only one aspect of the problems within a fishery, by being limited in scope or by limiting equipment while still allowing too many licenses to be issued.
- "Permit stacking," which allows fishermen to hold more than one license, would enable them to retain more of their catch, resulting in fewer discards and less waste.
- Catch limits are based on "maximum sustainable yield" estimates, yet accurate data on fish populations is not available.

Recommendations:

- Along with its use of permit controls and season limits, the state should limit fleet size and fishing capacity.
- The state should restrict fishing capacity so allowable catch limits are not surpassed.
- State and federal programs to develop fisheries management plans should be fully funded.
- Catch limits should be based on 75% of maximum sustainable yield as a safety valve.
- The state should support alternative strategies and programs to reduce discards.
- Ocean fishing seasons should be closed during spawning times.

- The state should offer economic incentives to encourage the use of equipment that does not harm the environment or kill juvenile fish.
- The state should allow for the sale of all caught fish, with the proceeds from bycatch and discards going to support observers or other fisheries research.

David Goldenberg
California Salmon Council
"Reconnecting to the consumer/direct sales"

Mr. Goldenberg presented the history of the California Salmon Council (CSC), which is supported through taxes on California salmon fisheries, for the purpose of marketing, promoting, and educating the public about California king salmon.

Goldenberg said adverse weather conditions created by the El Niño storms of 1998 resulted in a significantly lower catch than in 1997. Salmon caught during 1998 were also smaller than normal, and the market response was to offer a lower price for the fish. Compounded by Asian imports flooding the market due to the Asian economic crisis, declining exports, and the fact that consumer consumption of fish is low, the salmon industry was severely depressed.

Direct marketing helped many fishermen reclaim the market this year by allowing fish to be sold directly off the boats, he explained, without relying on middlemen. The process worked well for salmon fishermen who were able to sell the smaller fish for family consumption. However, Goldenberg said direct marketing did create some animosity with fish buyers, who were cut out of the process. He said the marketing chain would be hurt if buyers were forced out of business completely, but added that marketing orders establishing fair prices could be required to bring the system back into balance.

In the area of marketing, Goldenberg said CSC had recently submitted a grant proposal to the U.S. Department of Agriculture's Federal State Marketing Improvement Program (FSMIP) to study all segments of the wild salmon industry to improve the product's market viability. By evaluating market impediments, Goldenberg said the council hoped to develop more effective marketing strategies. Among the questions to be addressed were whether or not consumers knew the difference between farmed and wild salmon, whether taste and availability of product was a factor, and what role cost played in the consumer's mind. The FSMIP grant proposal was declined, however, but he said the group would seek out other funding sources to pursue the research.

Efforts to protect U.S. markets were also discussed. Goldenberg said the U.S. farmed salmon industry had filed a trade dispute against the Chilean salmon industry for export dumping. The wild salmon industry hoped to study the impacts of these farmed imports, but lacked the resources to do so. He applauded Assemblymember Strom-Martin's 1997 legislation, AB 1315, which sought to tax imported salmon in an effort to promote salmon marketing.

Another solution Goldenberg presented was to alter fishing seasons in order to address marketing concerns. Concentrating the fishing season in a few ports leads to overloading of buyers, he explained, driving prices down in those ports while completely shutting other ports out of the industry.

Goldenberg said CSC was the only state entity with authority to negotiate the purchase of tribal fishing rights and that the council was working to reach an agreement on such a purchase. He

said the council works closely with DFG, which collects fish landing fees and reconciles the funds collected with landing receipts. He said the lack of enforcement staff makes it difficult to verify that all landings are accurately reported and predicted that 1998 landing receipts will be especially low.

Goldenberg concluded that the salmon industry's problems are both economic and environmental and will require a strong commitment from both the industry and government to resolve.

Bob Miller
San Francisco Crab Boat Owner's Association
"Impact of Japanese Imports"

Mr. Miller said he believed the effects of foreign fish imports are real, imagined, and manufactured, and that they are clearly designed to impact prices. He said the effects of farmed imports are clear, noting that the downturn in the Japanese economy had temporary, yet serious economic effects on the California fishing industry. As Asian fish flooded the markets, local buyers said the wild fish were unacceptable and offered \$1 per pound or less. When fishermen began selling fish directly from their boats, Miller said the buyers doubled their offer, proving that the Asian economic crisis had been used as an excuse to drop prices.

Miller said a new approach is needed to marketing fish, and that the real demand for a quality product is found locally. He said many consumers question why the best fish are not available in local markets, but instead, are shipped abroad. He said the fish processors have exaggerated the impacts of foreign imports on local markets. Imported farmed fish are lower in quality, but the price fluctuates with the availability of wild fish in grocery stores. At the onset of the wild salmon season, Miller said farmed fish are dumped into the market, driving prices down. Later in the season, the cost of farmed salmon climbs, with the result that fish processors profit at the expense of the local fleet.

He noted that San Francisco restaurant owners are choosing the fresh-caught fish over fish from fish buyers. He said many farmed fish are raised on antibiotics and additives and probably should be approved by the Food and Drug Administration prior to sale.

Miller said something must be done to better regulate and monitor the market, noting that the industry will die if fisherfolk are not able to make a decent living.

Chuck Wise
Bodega Bay Fishermen's Marketing Association
"Direct Marketing"

Mr. Wise discussed the fishing industry's need to increase the value of its product in the wake of increasing regulation, growing competition from imports, and the consumer trend to find alternative sources of protein. He cited the example of the live rock cod fishery, which has improved market returns by creating a specialty market. He described the salmon fishery's direct marketing effort, which was generally seen as a last resort means of improving returns.

Wise attributed the problem to a breakdown in the markets, with fishermen being offered 90 cents per pound for salmon in 1998. Comparing the profit decrease to past years, when 50 fish brought \$1,000, Wise said the same volume of fish brought only \$250 this year. He said the direct marketing effort began in Half Moon Bay, where the direct sales were viewed as a special event and created a good rapport between consumers, fisherfolk and restaurant owners.

In Bodega Bay, Wise said the marina manager worked with the county to make direct marketing possible. He explained that county support had been vital, with the division of weights and measures certifying the weights of the fish for a small fee. Although the fishermen did lose fishing time while selling fish off the docks, Wise said the effort served as an educational tool that helped the industry reestablish itself in local markets. Wise said the public response to direct marketing was generally good, giving the public access to a low-cost, high quality product that produced a good return. The Bodega Bay effort also had support from the California Salmon Council and the county agriculture department, which provided tags verifying the location of the catch and sale. These "Sonoma Select" tags helped consumers know the fish was locally caught by local fisherman.

He said the industry would have been hit very hard in 1998 under the old marketing scheme, and said direct marketing was a good tool to re-focus industry goals. He encouraged additional support for marketing and advertising efforts, saying the quality of wild salmon needs better promotion.

Wise urged support for laws providing seasonal market protections or tariffs to help local fishermen. He also questioned whether profiteering is a factor in the fish-buyer and processor regime, saying buyers who once competed for fish now pay minimal prices and sell for as much as seven or eight times their investment. Wise expressed concern that the collection of landing taxes be continued, noting that the direct marketing process bypasses regular landing procedures. Noting that the assessments support organizations like Pacific Coast Federation of Fishermen's Associations, Wise said it is important that landing taxes be paid.

He urged support for better identification of farmed fish. He said CSC has promoted truth in labeling and has provided markets with signs to display with wild fish, but said the council has no regulatory authority. He credited Assemblymember Strom-Martin with researching the truth in labeling issue for possible legislation.

FINDINGS AND RECOMMENDATIONS**Findings:**

- Adverse weather conditions and Asian imports flooding U.S. markets hurt the 1998 salmon season.
- Foreign farmed salmon that is dumped in U.S. markets drives down the price of locally-caught fish.
- Research is needed to determine if U.S. consumers are aware of the difference between wild and farmed salmon, if price is a factor, and what role taste and availability play in the consumer's mind.
- Fishing seasons concentrated in the same geographic vicinity flood markets and drive prices down.
- U.S. fishermen can improve their returns through direct marketing.
- Direct marketing helps reconnect consumers with the fishing community and can raise community support for industry efforts.
- Direct marketing makes it more difficult to verify the accuracy of landing receipts and to collect landing fees.
- Consumers are not aware that many farmed fish are raised on antibiotics and other chemical additives.
- Some fishermen are turning to specialty markets, such as the live-fish fishery, to improve the value of their product.

Recommendations:

- The state should encourage processors and the fishing industry to work toward establishing fair pricing in order to help fishermen earn a fair return for their product.
- Fishing seasons should be staggered in order to avoid flooded markets.
- The state should support direct marketing efforts and facilitate completion of landing receipts and collection of landing taxes, which support fisheries research and management efforts.
- The state should require truth in labeling so consumers know they are purchasing locally-caught wild salmon or imported farmed fish.
- The state should support marketing research to help improve California's fishing industry.

Vivian Bolin
Salmon Returning
"Habitat Restoration Work"

Ms. Bolin described her work in habitat restoration through the Coastal California Provincial Advisory Committee designated in the federal Northwest Forest Plan, and her role as a member of Mendocino County's Fish and Game Commission.

Bolin said the goal of restoration work is to return salmon populations to sustainable levels with a harvestable surplus. She said the opportunity to employ displaced fisherfolk is an added benefit, and encouraged support for legislation to provide ongoing funding for cooperative restoration work.

Describing the condition of the fishery, Bolin said 106 major northern California salmon runs are extinct and another 214 are at risk. In 1996 the industry supported fewer than one-fourth of the fisherfolk it had supported in 1980, and California salmon fishing had decreased by 85 percent over the past 20 years. She said streams where fish are still found host fewer than 200 migrating adults each year, and that most North Coast streams have been declared sediment impaired and temperature impaired under the Clean Water Act.

She cited the need for spawning habitat that includes clean gravel, cold deep pools, hiding places and food for fish populations to survive. Habitat restoration efforts are designed to address these goals, as well as to minimize erosion from upslope roads and to monitor habitat conditions. Bolin said the Northwest Emergency Assistance Program has provided \$2.8 million dollars for restoration work in Northern California, and work has been done in collaboration with landowners, including timber companies and ranchers. She applauded the program's offer of landowner incentives to preserve streamside property, mitigation, and free labor to inventory roads and riparian habitats.

Bolin said the goal that restoration work will improve the value of fish stocks is far in the future. While she agreed that restoration projects provide immediate benefit for salmon, she said the work is wasted unless it is done in concert with watershed conservation on both public and private lands. State regulation fails to prevent human impacts, she said, and she cited the example of California's Forest Practice Rules, which do not address the need for ongoing road maintenance in salmon watersheds. Bolin said the grid of unmaintained and abandoned logging roads presents a constant threat to newly restored streams.

Bolin said the salmon industry is the only industry in full compliance with the Endangered Species Act protections for coho salmon, noting that the industry receives no compensation for their compliance. She said the industry has acted on its own to conserve the resource, yet the National Marine Fisheries Service (NMFS) has yet to release rules for forestry or agricultural impacts on salmon populations. She said NMFS is negotiating with timber companies and landowners to allow endangered species to be killed during the course of normal operations under the guise of habitat conservation plans. She questioned private landowners' commitment to protecting

endangered species, noting that many remaining salmon populations are found in the same areas as Pacific Lumber Company's largest tracts of old growth trees.

Bolin declared the answer to be in extensive public education about habitat needs, in restoration and road maintenance work, and comprehensive watershed planning. Funding to continue the work is also a critical need, as is hiring displaced fisherfolk, and preservation of remaining habitat.

John Fonseca
Pacific Marine Farms
"Contained Mariculture"

Mr. Fonseca described Pacific Marine Farm's (PMF) plan to develop a contained mariculture facility in Fort Bragg. Mariculture is the process of farming marine species for food or other commercial uses. Fonseca said the proposed PMF project would utilize the vacant Georgia Pacific lumber mill site and would be fully self-contained. The company will begin raising shrimp and coho salmon at the onset as it develops its long-term stock of abalone. When fully operational, the plant would employ about 70 workers.

While many foreign farm-raised fish are subsidized, Fonseca said PMF is relying primarily on private funds and the market product will not be subsidized.

Fonseca said the company shares concerns regarding environmental contamination from the plant, noting that with the self-contained system, only 10 percent water loss from evaporation was anticipated and that waste produced on site would be converted to fertilizer.

In many shrimp farms, Fonseca said viral contagion is a problem. He explained that PMF planned to buy live females with eggs and that the company was working with the California Sea Grant College to develop a substrate in which the larvae could be raised.

The PMF plan also included a proposal to harvest wild squawfish from local streams for use as a component of the feed used.

Duncan MacLean
California Troll Advisor, PFMC
"Aquaculture's drawbacks"

Mr. MacLean discussed the severe decline in the North Coast's fisheries and noted that competition from aquaculture is a contributing factor. He said the public holds the false impression that by eating farmed salmon they are helping wild stocks. There are many problems associated with aquaculture, he stated, among them environmental contamination and the accidental release of farmed salmon, which have degraded the environment and presented unwelcome competition for wild stocks.

MacLean cited the example of an abalone farm in Half Moon Bay that gained state and local government approval in spite of plans for the open release of waste material into the bay. The project proposed raising a South African species of abalone in open cages set in the harbor. He explained that such a project could place native stocks at great risk of contamination by the Sabelid worm, which impairs normal abalone growth and has been found in most of California's aquaculture facilities.

Regulation of the fishing industry has widespread impact, MacLean said, yet aquaculture remains unregulated after 30 years. He called for regulatory solutions to the problems in aquaculture that can be resolved, but said he believed more often than not that profit dictates the final response.

MacLean said that through payment of license fees he and others in the salmon industry support the aquaculture approach carried out by the Department of Fish and Game's (DFG) hatcheries and propagation enhancement work. Under DFG's program, fish are spawned and released as juveniles into streams and rivers in an effort to enhance populations or to mitigate for habitat loss. MacLean credited Bodega Bay Marine Lab's winter run broodstock research for contributing to that effort. While he said the financial return on this form of aquaculture is less predictable, he said the environmental impacts are far less severe. He said the problems of genetic diversity in hatchery stock could be addressed through altering hatchery practices and should not stand in the way of helping to restore the resource.

MacLean expressed his hopes that the industry could be revitalized to a level of prosperity that would make it possible to pass the business on to his son, and urged continued attention from the legislature to help achieve that goal.

Tom Weseloh
California Trout
"Recreational opportunities"

Mr. Weseloh spoke about the economic contribution of salmon and steelhead sport fishing, which once was a \$4.5-\$7 billion industry in California that created significant spin-off revenue in the community. The decline of those species has had an undetermined effect, but he said loss of habitat is clearly the cause. Weseloh criticized the inequity of the regulatory system that fails to address the impacts of timber, agriculture and hydroelectric power projects on fisheries, while placing onerous regulations on the fishing community.

Weseloh said all species in the sport fishing industry are in decline, but only the coho salmon industry is in full regulatory compliance. In spite of this, he said there has been no response from the fish because no additional measures have been taken to protect habitat. He said closure of northern California's steelhead fishery is pending, and the species is already listed as endangered in southern California rivers. A National Marine Fisheries Service proposal would have closed all rivers to fishing, yet failed to apply the "no take" provisions to other industries.

He described the success of the Russian River fishery, where a memorandum of agreement (MOA) that closed tributaries to fishing has allowed the status of steelhead to be downgraded to "candidate species." On the Smith River, sport fishing is under a one-fish limit, with additional restrictions depending on the season or water levels.

Weseloh said habitat provisions of the Endangered Species Act are not implemented because the rules are too complicated. The result is that the sport fishing industry is leaving California for Canada and other locations. He commented on the irony of Governor Wilson's proclamation on Hunting and Fishing Day when no sport fishing was allowed.

Weseloh did credit the Department of Fish and Game for their accomplishments through MOAs, but said the lack of staff to enforce regulations and to fill fisheries recovery program needs makes the effort meaningless. He also criticized California Department of Forestry for failure to carry out terms of the MOA.

Implementing one-fish take allowances could restore the sport fishing industry, Weseloh said, and he noted that many sport-fishers were even willing to release their catch. He said the change should be made for hatchery stocks, which are marked, and could exclude wild fish.

Weseloh praised Assemblymember Strom-Martin for her interest in reviving the fishing industry and urged a continuing dialogue in order to reach the best possible policy solutions for restoring this threatened way of life.

FINDINGS AND RECOMMENDATIONS**Findings:**

- Habitat restoration work offers an opportunity to employ displaced fishermen while working toward the goal of returning salmon populations to sustainable levels.
- Cooperative restoration efforts need continued funding from both public and private sources.
- Most north coast salmon streams are considered sediment impaired and temperature impaired under the Clean Water Act.
- Timber and agricultural land use regulations are not in compliance with Endangered Species Act protections for threatened and endangered salmon species.
- The restoration goal of sustainable fisheries means little without broadly implemented watershed conservation efforts and regulatory support.
- Poorly planned aquaculture efforts have introduced disease and pollution into the natural environment.
- A carefully planned and regulated mariculture industry can contribute to the local economic base without adversely impacting the environment.
- The aquaculture industry has been active in the California for over 30 years, yet further regulation may be necessary.
- The hatchery approach to aquaculture, as operated by the Department of Fish and Game, contributes much to fish stocks with the potential for less severe environmental impacts.
- Declining salmon and steelhead stocks have had a substantial impact on the sport fishing industry.
- Government regulation fails to address the full impacts of timber harvest, agriculture and hydroelectric facilities on fisheries while imposing strict regulation on the fishing industry.
- Because additional habitat protection measures are not carried out, sport fishing species continue to decline in spite of restrictions on the fishing industry.
- Cooperative agreements between the Department of Fish and Game and other users provide for greater habitat protections while allowing some fishing to take place.
- "One-fish" take allowances allow a sport fishery to remain open while affording strong protections for fish.

- A shortage of staff hinders state and federal efforts to enforce fisheries protections and to carry out recovery programs.

Recommendations:

- The state must support cooperative habitat restoration efforts that involve landowners, government regulators, and industry users.
- The state and federal government must implement and enforce equitable regulation of all land use practices affecting anadromous fish habitat.
- The state must improve regulation of the aquaculture industry in order to ensure aquaculture practices have no adverse environmental impacts.
- DFG must develop methods to address genetic diversity in hatchery stocks.
- The state must support collaborative approaches to watershed management, such as DFG's memorandum of agreement on the Russian River.
- The state should research the benefits of allowing a "one-fish" take in sport fisheries to help the industry remain active.
- The state must adequately staff management and recovery programs.

CONCLUSION

The Select Committee on Rural Economic Development studied the declining North Coast fishing industry in order to develop strategies that would help reverse that decline. From the breadth of subjects covered in the October 2, 1998 hearing, and the many remedies suggested, the committee has much work to do.

The need to establish equitable regulations to protect anadromous fish habitat is clear. The challenge will be to bring the region's vast timber and agricultural interests to the table to work toward a swift but manageable scheme for complying with Endangered Species Act provisions. Support from both the state and federal government will be needed, as well as the endorsement of the Pacific Fisheries Management Council. As a member of the regional Pacific Fisheries Legislative Task Force, Assemblymember Strom-Martin is in a good position to work toward regional support for more effective habitat protections.

The problems of marketing fish also invite interesting solutions. Direct marketing efforts have offered an innovative and successful means of improving fishing incomes, and those efforts merit support. But fish processors and retailers are also a part of the region's economy. New marketing orders from the Department of Agriculture could help improve market prices for locally-caught wild fish, benefiting both fisherfolk and fish processors. Truth in labeling could also enhance the marketability of wild fish, as would efforts to discourage the dumping of foreign-farmed fish on local markets.

Fisheries management strategies present a more troublesome impediment. Without additional research to help provide population counts for the various species, the prospect of setting meaningful limits is difficult at best. Assemblymember Strom-Martin's bill funding the 1998 Marine Life Management Act established the groundwork for such research, but the program will need an on-going commitment from the Legislature and the Administration. The Act's move to take fisheries management decisions out of the Legislature's political realm is promising -- as long as sound science is allowed to frame the debate.

Financial support for habitat restoration is of critical importance, as is support to help communities develop alternative schemes for economic revival. Just as the Pacific Northwest forest communities received federal support when spotted owl regulations shut down the timber industry, fishing communities need similar assistance. Funds must be made available for retraining, for developing alternative approaches to resource use, and for community planning.

A final, but pivotal issue is the shortage of staffing to enforce the regulatory and promotional programs that will help our fisheries recover. Without full support from the state and federal governments, fisheries management programs can accomplish little, and the toothless advisory role biologists play in assuring habitat protection on private lands will continue. The government must take seriously its role as steward and protector of this vital resource if we are to hold any hope of keeping our fisheries alive.

These and the other recommendations listed throughout this report are offered as part of the solution to the fishing industry's plight. It is the Committee's hope that this information will

provide the impetus for other members to also take up the fishing community's cause during the coming session.