

Research, part of a Special Feature on [Pathways to Resilient Salmon Ecosystems](#)  
**Resilience in Lower Columbia River Salmon Communities**

*Irene E. Martin*

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**ABSTRACT.** In 1992, the first listings of Columbia River salmon under the Endangered Species Act occurred. Regulation of the Columbia River gillnet fishery since that time has greatly reduced fishing time and economic return to the fishing fleet. The counties where two-thirds of the gillnetters reside have registered negative social statistics during this period, including drug and alcohol abuse rates, incomes, and mortality rates, among others. The fishing communities' attempts to cope with this change, their strategies for resilience, and the potential consequences for their ability to advocate on behalf of salmon should they be further weakened are discussed. The possibility exists that the gillnet population could abandon its commitment to the Columbia River and settle in other areas.

**Key Words:** *Columbia River; Columbia River commercial fisheries; Columbia River fishing community; Commercial fishing community social statistics; Columbia River gillnet fishery*

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## **INTRODUCTION**

Several years ago at a meeting to discuss Columbia River salmon (*Oncorhynchus* spp.), an official of a fisheries agency that I will not name exclaimed, "You people just refuse to die!" Although I don't think he actually wanted the gillnet fishing communities he was referring to, to die, nonetheless his remarks started me thinking about the survival and resilience that fishing communities on the Columbia River have exhibited throughout much of the past century. Let me say from the start that I am not going to break new ground with theories of community resilience. There's plenty of material out there already. Instead I want to describe the occupational community of the Columbia River gillnetters, the changes that have occurred since implementation of the Endangered Species Act (ESA) in the early 1990s, how these fishing families and communities have survived, and what the cost has been.

## **METHODS**

In my previous historical and social research on the Columbia River gillnet fishery (Martin 1994, 2005), I used several sources of information to establish the background of the fishery and current trends in its development. These included examination of the

lists of permit-holders in the fishery in both Washington and Oregon, and a comparison of the names of the permit holders with PACFIN data on permit holders in other west coast fisheries, especially those in Alaska, to trace permit ownership patterns. These data also yielded information regarding residency of fishermen, which in turn enabled me to concentrate my efforts on tracking the social and community health statistics of the four main counties where the gillnetters live. I interviewed fishermen, clergy, and social service providers to learn about patterns of behavior and community dynamics. I also conducted a literature search on the Columbia River gillnet fishery and on west coast fishing communities. Of particular value was the volume "Change and Resilience in Fishing" (Hanna and Hall-Arber 2000), with chapters on community resilience and the consequences of fisheries management.

## **DISCUSSION**

The Columbia River gillnet community resides in small towns, villages, and rural areas along the lower hundred miles of the Columbia River, or, in some cases, in the Grays Harbor or Willapa Bay area along the Washington coast, as fishermen licensed in Washington for the Columbia River are

also permitted to fish either Grays Harbor or Willapa. A survey in 1996 noted that, of the gillnetters surveyed, 60% were from families who had been fishing for two or three generations, and 17% had fished for four generations or more (Gilden and Smith 1996).

The gillnetters have a history of more than 150 years of fishing on the Columbia. Their complex marine society was formed in the 19<sup>th</sup> century by waves of immigration from fishing regions in the eastern U. S., Scandinavia, Finland, Mediterranean countries, and the UK. They banded together into cooperative groups known as “snag unions” to pull debris off their drifting areas that would tear their nets. They developed codes of behavior and rules governing these areas, which came to be known as “drift rights.” They formed associations, such as the Columbia River Fishermen’s Protective Union (CRFPU), which is still in existence today, to work on issues of concern. Along with issues such as the price of fish and seasons, the association monitored environmental issues. The Union filed the first anti-pollution lawsuit on the Columbia River in the 1930s, and was a strong advocate against building the mainstem Columbia dams (Martin 1994). The CRFPU continues to monitor habitat issues such as the current proposed siting of a liquefied natural gas (LNG) plant adjacent to Bradwood on Clifton Channel, a migration and rearing area for salmon. Fishermen have attended public meetings and testified about the project, as well as taking part in a vessel “boat-in” to protest the siting of the facility.

When faced with declining runs on the Columbia due to development of the upper basin, particularly hydro and agricultural projects in the 1940s, fishermen adapted by using their cannery connections on the Columbia River to buy into Alaska fisheries. They often fished for the same company they fished for on the river. This strategy, of being based in the lower Columbia but migrating for part of the year to Alaska, has been in place now for many decades. For a comparative description of what has occurred in Bristol Bay fisheries where many of the Columbia River gillnetters own permits, please see Robards and Greenberg (2007).

Most of the gillnetters live in one of four counties: Clatsop County in Oregon (193 permit holders), and Pacific (83 permit holders), Grays Harbor (48 permit holders), and Wahkiakum (43 permit holders) counties in Washington, with the bulk of the remainder dwelling in other riverside counties

along the Columbia, including Cowlitz County, Washington (32) and Columbia County, Oregon (39). A total of 120 other Washington and Oregon permits, such as crab, troll and Razor clam, among others, was held in 2004 by the gillnet permittees. Two hundred and nine Alaska permits, including drift gillnet, seine, longline, and setnet permits, were held by Columbia River gillnet permittees in that same year. These numbers are minimums. For reasons I have delineated elsewhere (Martin 2005), particularly the difficulties in tracking vessel names, fishermen’s names, and corporate names from state to state, quantification of all the additional permits owned by Columbia River gillnetters has not proven possible. Quantification of the numbers of crew members on these vessels is also not possible, although it should be noted that crew members are generally recruited from within the family or local community.

The 1990s saw significant downturns in the amount of fish caught on the Columbia, due in part to implementation of the ESA and the listing of various salmonids. Jennifer Gilden (Gilden 1999) noted the changes occurring in the gillnet and other salmon fishing communities due to the ESA listings. In addition to catching fewer fish, prices received by fishermen for salmon also declined. The Pacific Fisheries Management Council’s “Review of 2002 Ocean Salmon Fisheries” notes, “For 2002, income impacts associated with the Columbia River commercial catch are estimated to be \$7.7 million, compared to \$7.0 million in 2001, and a 1987 through 1997 average of \$14.2 million (inflation adjusted Table IV-19)” (Pacific Fisheries Management Council 2003: IV-31, 35). Income, therefore, from the Columbia River fishery declined to approximately half its previous value, in a relatively short space of time. Although further economic data are available that track these declines (Radtke et al. 2006), little attention has been focused on the social statistics that indicate what was going on in the community at this time, particularly in the area of community health.

Such factors as standard of living, culture and history, social institutions, economic systems, and others are all “society resources that a population draws upon to sustain health. Patterns of exposure to risk vary among socioeconomic groups and are associated with a fundamental access to resources” (Anderson et al. 2003: 12-13). Prosperity or poverty, whether at the personal, family, or community level, are the determinants that will

result in a greater or reduced level of community health.

Community health statistics in particular indicate that the 1990s downturn had an effect on fishing families in the coastal counties that was not just reflected in lower incomes. Although it has proved difficult to get data that are solely attributable to the fleet, data that represent the counties in which most gillnetters live are available, and can be compared with state rates. As poverty increases, so do many health conditions leading to death. Examining the statistics of the four main counties where more than 66% of the gillnet fleet resides provides some indication of community health, not just of those counties, but of the fishing fleet as well (Martin 2005).

The four counties listed in this paper all ranked in the lowest per capita income field of \$14 000–\$19 600, according to the U.S. Census of 2000. They also all exceeded their representative state rates in areas such as adult drunk driving arrests, child abuse, adult and juvenile drug arrests, and adolescent suicide attempts, with Clatsop County's adolescent suicide rate being nearly triple that of Oregon State's rate in 1999. Pacific, Grays Harbor, and Wahkiakum counties ranked fourth, fifth, and 14<sup>th</sup>, respectively, in the State of Washington in the percentage of the child population referred to Child Protective Services, 1998–2002. Clatsop County ranked third in this regard in Oregon in 1999.

The mortality rates for each of these counties are also considerably higher than the respective state rates. An examination of death certificates of gillnetters who died in Wahkiakum County indicates that from 1998 through August 2005, the average age of death was 65. The two youngest deaths (ages 21 and 33) were from suicide or drug overdose. All were white males. Most of these deaths were not directly fishing related, but were predominantly from heart disease or stroke, with cancer of various kinds ranking next. On a national level, the life expectancy in the U.S. for white males during this period was 74–75 years. This is a small sample of 14 individuals, but should serve as a warning about the health of this occupational group.

Due to lack of data regarding community health issues in previous decades, it is not possible to provide corresponding statistical data with which to compare the current situation. Interviews and informal discussions with community members,

fishermen, social service workers, and clergy identified issues such as reduction in incomes, lack of fishing time, uncertainty over future fishing opportunities, and community instability as issues that contribute to stress and affect community health and well-being. When fishing seasons are curtailed, it is difficult for young people who are starting out to gain experience and learn the trade. Financial resilience is affected by the net loss of fishing jobs, due to reductions in fishing days. Under such circumstances, it can be a challenge to maintain community infrastructure, such as fuel suppliers, ice, boat carpenters, and mechanics. It can also be a challenge to monitor habitat changes occurring in the river, due to the reduced time spent on the water.

The Exxon Valdez oil spill in Alaska in March 1989, affected many Columbia River fishermen, some of whom fished in the oil-affected areas, and others who, although not directly affected by the spill, saw the prices of Alaskan salmon plummet worldwide amidst fears of contamination (Knapp et al. 2007). Price declines may have been affected by other factors, but part of the Exxon Valdez litigation contends that fishermen in the unoiled areas of Alaska are also entitled to compensation. As of this writing, many of these fishermen have yet to see any recompense for their losses from a class action lawsuit against Exxon that has gone on for over 18 years and is now before the U.S. Supreme Court.

And yet, “you people just refuse to die.” To what, then, can this resilience be traced? I offer the following observations of fishermen's adaptations to the constraints on harvest in the past 15 or so years, and comment on the traits that I think provide resilience.

1. When faced with declining returns or curtailed fisheries in the 1990s, fishermen developed portfolios of permits in other fisheries. They stayed with their perception that fishing is their occupation, their identity and source of income. Some who participated in buyback offers of the 1990s used the money to invest in other businesses, including other fishing permits. It should be noted that fishermen who sold Washington licenses at high prices sometimes used that money to buy cheaper Oregon Columbia River gillnet licenses and other fishing permits in order to stay in the fishery. Although there are exceptions, most of the fleet participates in

more than one fishery, frequently in distant waters, and returns home to the Columbia River region with the income generated from this part of their business. This pluralistic adaptation helps reduce risk—or spread it around—and may also help reduce pressure on fish stocks during times of scarcity. Fisheries managers and other voices who criticize “part-timers” may have overlooked this in their zeal to “rationalize” the fishery economically by instituting “buyback” programs

Furthermore, the annual trip to Alaska, in particular, renews a cultural memory of abundance, as fishermen yearly experience exactly what abundance looks like when they encounter runs in the millions of fish and pristine habitat. Their understanding and expectation that such abundance is still possible and desirable on the Columbia remains alive, in part because of the annual renewal of this memory. In turn, this understanding results in advocacy for salmon by participation in community activities that deal with local habitat issues. For example, gillnetters have long worked with high school salmon-rearing programs in Clatsop County, Pacific County and Wahkiakum County to provide hands-on educational experiences for the youth of these communities.

2. Fishermen adapted to new technologies to become more selective, and therefore, harvest more of the fish not listed under the ESA. These changes included tangle nets, live boxes, and fishing in the Select Area or Select Area Fisheries Evaluation Project (SAFE) fisheries. In late 1993, the net-pen rearing project that is now known as SAFE received funding from Bonneville Power Administration to create net-pen rearing facilities for non-mainstem gillnet harvest. This program has undergone expansion and modification in the years since, and augments both ocean and in-river sport and commercial fisheries. Through “Salmon For All,” an association of gillnetters and processors, fishermen and processors assess themselves a poundage charge on catches and deliveries that goes directly to SAFE area operations. The gear adaptations mentioned also came at a cost, as investment in new gear and live boxes represented an up-front cash outlay for an as

yet untried fishery that also increased operating costs. Some fishermen have branched out into marketing their own catches, and sponsored legislation in both Oregon and Washington in order to make this easier. Some acquired other marine-related skills, such as oil-spill cleanup.

3. Political activism in the form of attendance at fisheries meetings is strong. Most fishermen support one or more organizations such as the Columbia River Fishermen’s Protective Union, Northwest Gillnetters Association and Salmon For All. A Commercial Fisheries Advisory Group for the Columbia River was developed by the Washington and Oregon fish and wildlife agencies. Fishermen’s organizations have formed strategic alliances with other groups that have interests in common, such as the Coalition of Salmon Communities and Save Our Wild Salmon. The latter has focused legal action regarding the ecological impacts of four Snake River dams on Columbia River salmonids listed under the ESA. Fishermen have taken part in rallies in Portland and Astoria on removal of Snake River dams, as well as lobbied federal and state representatives on this same subject.
4. Families assessed what needed to be done, and in many cases women who were an integral part of the fishing operation searched for other work in order to bring in needed cash. In particular, women looked for jobs that provided health benefits for their families.

In addition to these fairly specific means of adaptation, Smith (1977) notes other examples commonly found in fishing communities that go back to the early history of the gillnetters. These include:

1. Close family ties. Fishermen use family members as crew, both on the Columbia and in other fisheries. Various combinations exist: father/son; uncle/nephew; father/daughter; cousin/cousin. A Columbia River fishing business is frequently a cross-generational family business. Income that a son or daughter earns may go to pay for

college. Children of fishermen may work in processing plants during the summers to earn money for further education. Income is generated within the family and retained within the family. Skills are also passed down through the family, ensuring long-term survival of the occupational community.

2. A strong oral tradition is in place on the Columbia, where face-to-face relationships and networks are still the norm. These are verbal relationships, rather than written ones. Most fishermen are quick to adopt new technologies such as VHF radios and cell phones, with their verbal communication. Most fishermen do not have or do not use computers or email, except sporadically. If there is a computer in the family, generally the woman is the one who conducts the written communication (Hobe Kytr, Manager, Salmon For All, personal communication). Oral communication is a way of managing information, which Columbia River fishermen do not think of as a common property resource. Information is a means to access fish, which are a common property resource. Controlling information by controlling what is communicated and to whom also serves to control access to fish.

Although the adaptation of the latest oral communications technologies is a means of resilience, enabling faster and enhanced exchange of information among fishermen, this adaptation should be contrasted with the tendency for fisheries managers to communicate a great deal in writing, particularly via websites, email, and documents. The underlying assumption among managers is that the information that is being shared is public and open access. Most of the fleet does not relate to this form of communication or pay much attention to it. Publications of official data may take place several years after the data were collected, making them obsolete for those who operate in "real time." A valuable discussion of communications in fishing communities and the implications for management agencies is contained in Gildea and Conway 2002.

The Fisher Poets Gathering in Astoria every February is probably the ultimate example of oral communication among fishermen, and

not just those of the Columbia River. Fishermen from across the U.S. and Canada attend and participate. Advertising is low-key, in order to keep the event small enough for meaningful participation by the audience and poets. In 2008, organizers scheduled workshops on the ecological implications of the Pebble Mine project slated for the Bristol Bay drainage, a history of the Columbia River Packers Association, and the work of fisheries artist Ray Troll, among others, along with more than 50 poets in multiple locations. The event gives fishers an opportunity for informal exchange of information about fisheries in which they share a common interest, as well as advocacy for environmental and social issues.

3. Physical courage that is developed by the act of fishing also serves to develop and strengthen leadership and resilience. Courage is a learned behavior, reinforced by constant exposure to danger. Fishing is a risky occupation, where the demands of the business itself develop a high tolerance for risk and rapid adaptation to fit constantly changing circumstances. The job by its very nature provides some of the ingredients of resilience.
4. Fishermen have a strong egalitarian ethic, which contributes to a sense that they have a right to fish and that their needs are as important as the other demands on the resources that salmon need: clean, cold water and access to habitat.
5. Strong local rules and customs. These include rules on the drifts, especially drawing numbers for who gets to drift when during various stages of the tide. Drift rights are an example of what the United Nations Food and Agricultural Organization termed "TURFs" or "Territorial Use Rights in Fisheries" (Panayotou 1984: 154, Martin 1994: 101–114). The interplay of competition and cooperation on the fishing grounds can lead to strong problem-solving skills and creative ways of resolving conflict. On a community basis, barter is a common means of interaction with the wider community. Trading fish for services or access to private hunting grounds or woodcutting privileges on a local landowner's property or haircuts at the local

barber shop may reduce the need for cash payment for the necessities of everyday living.

How does community resilience contribute to salmon resilience? First of all, the fishermen are still here. They have refused to die. They maintain advocacy for fishermen and for fish. Because of the verbal/oral culture, fishermen will go to meetings and speak. They will also work on fisheries and environmental issues and support organizations that have similar interests. Because they have considerable “accumulated adaptive experience” (McGoodwin 2001: 4) regarding the environment, their observations are probably going to document changes going on in the Columbia watershed sooner than most. Some serve on various state and federal boards having to do with research, hatcheries, and commercial fisheries. A number of fishermen and women attended meetings during the development of the Columbia River Pastoral Letter by the Roman Catholic Bishops (Catholic Bishops 2001). These are the healthy interactions that sustain fish and fisheries communities over the long term. A real sense of the value of fishing and its part in daily life also exists and is sometimes referred to as the “satisfaction bonus” (McGoodwin 2001: 7). “Sustaining the fishing way of life is as highly valued, or even more highly valued, than merely ensuring that fishing is a profitable means of ensuring their livelihoods” (McGoodwin 2001: 8). Or, as one Columbia River fisherwoman put it in a meeting regarding preservation of fishing culture as a tourist attraction, “It’s worth doing for its own sake.”

Recently I have heard gillnetters talk of the “scorched earth” policy that they feel is now being carried out under the ESA and that is decimating salmon communities. They view the ESA as a useful tool for salmon recovery, but one that is being misused by well-meaning people with urban rather than rural backgrounds. This misuse, in their view, is ultimately a losing strategy for themselves and for the salmon, in that it is weakening, if not destroying, the very people who have most to lose if salmon become extinct on the Columbia. As Nathan Mantua and Robert Francis put it, “Fisheries generate the social and economic incentives that build the political clout needed to preserve the source of their sustenance” (Mantua and Francis 2004: 129). Furthermore, “People take the long view when they feel a commitment to...posterity...

and therefore see the need for actions to benefit the distant future.” But they can afford to take that view...only “when they believe the rules of the game are fair [and that] they will share equitably in the returns” (Kanter 1999). It may be harder for an urbanized society to recognize the natural resilience that occurs in cohesive ecosystems, and to recognize what the limits are when those ecosystems are seriously disrupted. This rural–urban divide frequently plays out on the Columbia River in allocation struggles between urban-oriented recreational and rural commercial fishers for the salmon resource. These “fish-fights” contribute to reducing or weakening the variability, viability, and resilience of human populations committed to salmon’s welfare.

## CONCLUSION

Given the social issues in their communities and the economic issues of the Columbia River gillnet fishery since the listings of various salmonids under the ESA in the 1990s, many fishing families are reevaluating their situation. More and more, fishing families who bring in incomes from other fisheries to an impoverished region feel under pressure to justify their emotional and financial commitment to the Columbia River and its environmental health when their incomes from that source are significantly eroded. Their permits in various other fisheries offer alternatives, not just in where they fish, but in where they live. As one informant put it, “Unless things change, this will be the last generation of fishermen who make their homes here.” They have refused to die, but, like human populations everywhere who face the loss of their sustenance, they may leave.

*Responses to this article can be read online at:*  
<http://www.ecologyandsociety.org/vol13/iss2/art23/responses/>

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