

# Contrasting Views of Coastal Residents and Coastal Coho Restoration Planners

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## ABSTRACT

Concern about declining Oregon coastal salmon runs (*Oncorhynchus* spp.) led to petitions to list them under the Endangered Species Act. In response, Oregon Governor John Kitzhaber advanced a voluntary restoration plan rather than a regulatory approach with federal requirements. The National Marine Fisheries Service accepted the governor's approach. We surveyed 505 Oregon coastal residents and found solid support for a voluntary, nonfederal approach. Coastal residents expressed general support for salmon and environmental restoration, as did respondents to other recent surveys in the Pacific Northwest. However, the views of coastal residents differed from those of many agency people regarding the impact of marine mammals, use of hatcheries, and importance of naturally spawning salmon stocks. Residents also showed a willingness to pay and volunteer for salmon restoration that is comparable to responses for other surveys done in the region during the 1990s. The survey found coastal residents were very skeptical of government and scientists; instead, they relied on word of mouth, TV, and radio for most of their information. Values regarding environmental and economic priorities better explain differences among respondents than demographic variables such as age, gender, residence, education, and income.

## Background

Wild coastal coho salmon runs (*Oncorhynchus kisutch*) in Oregon have experienced severe declines since the late 1970s. To reverse the trend, the Oregon Department of Fish and Wildlife (ODFW) implemented a plan in 1982 that focused on single-species management and hatchery production. The decline continued, and pressure from conservation groups and others led the National Marine Fisheries Service (NMFS) to evaluate listing coho under the Endangered Species Act. In October 1995 Oregon's Governor John Kitzhaber began preparing a restoration plan to retain local control of salmon restoration efforts. The plan encourages a cooperative approach among state agencies, federal officials, and community partners. It emphasizes grassroots involvement, voluntary (as opposed to regulatory) approaches, restoration of wild salmon populations and habitats, a role for hatcheries, and recognition that salmon are part of Oregon's cultural identity (Governor's Natural Resource Office 1997). In April 1997 NMFS accepted the voluntary approach toward Oregon coastal coho restoration.

Any restoration plan requires communication and confidence between regulators and the public, and a voluntary program depends on the knowledge and support of local citizens. We surveyed Oregon coastal residents to better understand their values and knowledge of salmon issues and found their views differ from those of scientists and government managers on several aspects related to salmon restoration. The study explored the ways coastal residents receive information about salmon, the respondents' willingness to pay and volunteer for salmon restoration, and their demographic characteristics. In addition, it asked attitudinal questions comparing environmental and economic priorities, and exploring other environmental issues, general concerns, and confidence in organizations.

The survey was mailed to a complete list of 195 Oregon coastal community leaders and a representative sample of 808 residents. We received 505 responses, 50% of the potentially reachable sample. Community leaders included coastal city councilors and county commissioners as well as watershed group leaders. The random sample of coastal residents was obtained from a national sampling firm. The survey was conducted according to Salant and Dillman's (1994) modified total design approach. The first wave of surveys was sent as voting took place for the 1996 presidential election, and final interviews were completed in mid-January 1997. Our survey included a systematic look at response bias. We telephoned two-thirds of those who did not respond to the first two waves. Thirteen percent of these calls resulted in interviews and 19% in direct refusals. Thirteen percent ended in what might be called a "passive"

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refusal, where the respondent would not take the time to be interviewed by phone but said they might return the survey and never did. Twenty percent of the calls went unanswered; 19% reached answering machines; and 14% of the phones were disconnected. Including refusals as responses and deducting the phones that were disconnected resulted in an effective response rate of 71%. We compared coastal residents with community leaders; mail respondents with those who completed telephone interviews; and groups with different demographic characteristics, including gender, age, length of residence, education, and income. These comparisons revealed few significant differences on issues relating to salmon. We also analyzed people's priorities regarding environmental and economic considerations, and found that these better explained different views on salmon restoration.

In evaluating differences among various respondent populations, we relied on three criteria. First, we looked for correlations that had a probability of 1 in 1,000 of being wrong ( $p < 0.001$ ). Second, when we saw a relationship, we thought we should be able to explain why it existed. Finally, we checked these results against other completed surveys and other observations of people's preferences about salmon. The following tables and text include references to numerous other surveys that have dealt with salmon issues (most pertinent are Shindler et al. 1993, 1995; Brunson and Steel 1994; Martilla and Kiley 1994; Steel et al. 1994a, 1994b; Elway Research, Inc. 1995; Rudzitis et al. 1995; Smith and Steel 1997).

## Major Issues

The survey found strong support for salmon restoration, with 60% of respondents agreeing that "we must protect and restore salmon even if it is expensive." Many expressed the view that all of us share responsibility for the salmon decline. The state is favored over other entities for leading restoration planning. Public views on marine mammal and bird predation, hatcheries, and the importance of wild fish differed from those of many scientists (Cone 1995; National Research Council 1996; Stouder et al. 1997). Respondents also supported compensating private landowners who protect and restore salmon habitat, if the landowners are not responsible for contributing to the decline in salmon runs. While the survey provided categories for people to check, many respondents amplified their views with written comments. We present some of these comments as direct quotes in the following pages. Although views were diverse, the quotes reflect common themes in the responses.

## State Leadership

Fifty percent of respondents said they would prefer the state to lead salmon restoration efforts alone or in combination with other groups, particularly watershed organizations, counties, and resource users. Of those

favoring state leadership, more than half listed the state as taking the lead alone. However, a substantial group did not want the government—particularly the federal government—involved at all; one respondent claimed, "It messes up everything it touches." National surveys also show support for giving states the highest responsibility for environmental regulation and protection. For example, Mellman Group (1994) found the state government preferred by 37% compared to 29% for federal and local government. One-fifth of our respondents believed watershed organizations should share the lead in restoration efforts, but less than 5% would have watershed organizations leading alone. Resource users (48%), the federal government (42%), and the state (38%) were favored to finance restoration efforts. In general, people believed planning should take place at a local level while financing should be spread more broadly:

*"Stop management by committee, specifically at the state and federal level. Our people know what's wrong. Give them the tools."*

*"Listen to the fishermen for their ideas and don't rely on experts with no practical knowledge or understanding of an individual stream!"*

*"Let areas/regions which have made significant progress, i.e. Rogue River, Sixes, Elk, Chetco, have some reward for their efforts—don't let the Feds dictate broad and often ill-conceived plans in areas showing good progress."*

*"We are experts in Coos County! People in Multnomah County don't care what people in Coos County think."*

Oregon's salmon restoration plan is a voluntary program that focuses on shared solutions. Because of

U.S. Forest Service



"Please leave logs: Removing wood removes fish!" is the message fixed to a log by the U.S. Forest Service. Agencies send mixed messages, however. Some coastal residents associate the Forest Service and related agencies as being the agents of tree removal rather than retention. Others may remember a time not long ago when agencies directed individuals to remove trees from streams to benefit fish.

## MANAGEMENT

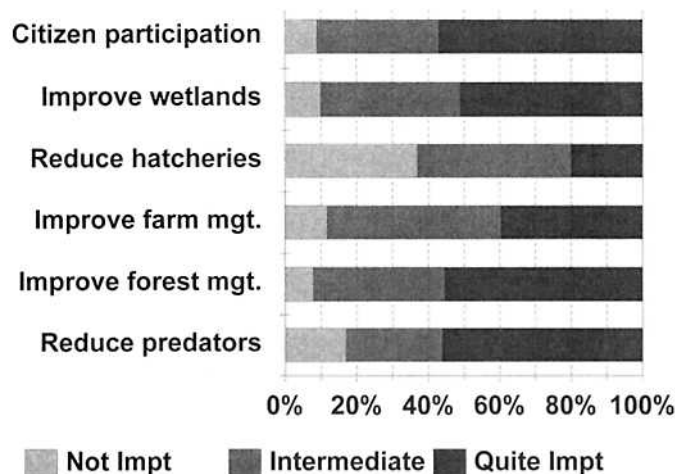


Figure 1 shows frequency distribution of all respondents on the importance of factors for the future of salmon.

this emphasis on volunteerism, valuable lessons may be learned from ODFW's experience with the Salmon Trout Enhancement Program (STEP), which also is a volunteer effort (Nigro and Wise 1995). Although we did not have a question to elicit this, it was clear from phone interviews that a number of recreational fishers were upset about the way ODFW has handled STEP. When the STEP program began in 1980, it emphasized enhancement through the use of hatchery stocks placed in hatchboxes built by volunteers. The program was based on the philosophy that single-species management and human intervention could improve the status of salmon. There was a great deal of support for STEP, and volunteers donated many hours to it and became possessive of the program. The 25% of survey respondents who said someone in their household had volunteered for the STEP program were more likely to express concern about the future of salmon and more likely to feel knowledgeable about salmon issues than other respondents. They also were more willing to volunteer time than those who were not involved in STEP. When STEP's management became more concerned about genetic diversity, wild fish, and ecosystem management, many volunteers became frustrated. Some said they did not have the changes explained to them; others were not listening to explanations; and many disagreed with the changes. From telephone interviews, it was clear that this situation created opposition to ODFW.

*"We, in this area, have seen a sharp increase in the number of salmon in the Umpqua River. I feel this is in a large part due to STEP and other hatchery programs."*

*"STEP was extremely successful, except when Fish and Wildlife became involved."*

*"Less emphasis on wild fish and more emphasis on hatchboxes. The cheapest and most successful way for gains."*

Getting people committed to a voluntary program requires clear, simple concepts. The STEP experience shows how difficult it can be to change the direction of voluntary efforts once initiated. STEP attained strong

support, but when biologists wanted to change it, they found it was not easy.

## Predators

More than half of respondents said that it is "quite" or "very important" to reduce marine predation by seals, sea lions, and cormorants. This is higher than support for improved forest management, restoration of wetlands and streams, and citizen participation (Figure 1). Many people backed up their views with personal observations, which have convinced them that marine mammals are taking significant amounts of salmon. People with commercial and recreation fishing licenses were more concerned about the impact of predators.

*"One thing I have spent much time on is observing the predators on adult and fingerling salmon...One cormorant will eat at least 100 [fingerlings] a day so what chance have they of surviving? I don't think the farmers and loggers have near the impact on the salmon survival they are blamed for. I don't trust any politician on this matter because they don't hear both sides. They hear only what they want to."*

*"Get rid of the sea lions! Why are they protected?"*

*"Do something about the imbalance of population of salmon and seals. Pendulum has swung too far in favor of the predators."*

Just under a fifth of respondents said that decreasing marine mammal and bird populations was not important at all. Those favoring the environment were somewhat less concerned with reducing the number of predators and were much less willing to change laws to achieve a reduction (Figure 1).

## Hatcheries and Wild Fish

Most respondents reflected the view that the salmon decline is a production problem. Half stated that it is "not at all important" or "not very important" to reduce hatchery production (Figure 1). A Portland focus group conducted by Elway (1995:2) concluded, "Portland participants associated salmon with eating....Few seemed to make any connection between hatcheries and the decline in wild salmon...."

When discussing hatcheries during telephone calls, many people expressed a strong skepticism regarding the existence of wild fish, saying that hatchery stocks were taken from wild fish; that hatchery fish have interbred with wild fish; and that after all these years there is no difference between the two. When asked the question, "Do you think it is important to decrease hatchery production?" a common response was, "Why would you want to do that?" Many people viewed those who support wild fish to be extremists who did not understand reality.

*"I believe the state's 'wild-fish' program is defective. Either abandon this or explain it more fully to the public. The rivers should be completely full of salmon."*

*"More hatcheries, not less—IF the wild population is depleted."*

*"In 1934 I visited three large operating hatcheries on the Umpqua River system. I have witnessed fall and spring runs completely across the width of the river. As the hatcheries were*

*eliminated, so did the fish runs. How, after all these years, can anyone distinguish between a hatchery and wild fish? They have intermixed for all of my 74 years. Why is the so-called saving of wild fish so important now? Did someone finally wake up?"*

## Compensation

Compensation of private landowners is an important issue. While 16% of those surveyed disagree with the statement, "Private landowners should be compensated for protecting and restoring salmon," 57% agreed, and one-third were in strong agreement.

People discussing the issue of compensation thought that those responsible for the destruction of salmon runs bore a responsibility for correcting the problem. If landowners were asked to do things that were costly, respondents thought they should be compensated. Respondents' comments reflected the diversity of views regarding landowner responsibility.

*"I do not believe individuals should be compensated for repairing damage to the environment that they have caused!"*

*"Big landowners are doing a damn good job."*

*"Farmers should be held accountable for the poisoning of any or all water ways."*

*"Rules being put on farmers are too extreme. The laws are totally ridiculous. Saying cattle ruin the environment is stupid."*

More than half said that improved forest management was important (Figure 1). A survey of nonindustrial private landowners, industry foresters, and logging operators (Hairston and Adams 1996) looked at support for the new "Water Protection Rules" added to the Oregon Forest Practices Act in 1994. Most supported the new stream rules. Three-fourths noted the desirability of having the rules include "compensation or incentives for timber owners." When asked about the level of loss due to the new rules, most indicated their actual losses were small; however, this was only a year after the new rules were enacted.

## Willingness to Pay and Volunteer for Salmon Restoration

Thirty percent of survey respondents said they were unwilling to pay to restore salmon, and a third were unwilling to volunteer time. More than a third would pay more than \$10 per month, with 17% willing to pay more than \$20 per month. Forty-seven percent of respondents were willing to volunteer a half-day or more per month, while a quarter would both volunteer and pay. Many respondents who said they were unable to pay or volunteer were older people with fixed incomes and health limitations. Also, many people said they had little faith in the ability of government to spend their money wisely. Some reserved their willingness to pay or volunteer until they knew what program was being proposed. Higher-income people were more willing to pay for salmon restoration, while more knowledgeable respondents were more willing to volunteer. When asked, "What would stimulate you to become involved in salmon restoration?," answers included the following:

*"A confidence that my efforts and/or money were part of a cohesive effort with specific goals."*

*"Willingness of environmental groups to honor and respect my constitutional property rights."*

*"Bottom-up, nonregulatory, cooperative efforts can often be done with very little cash outlay."*

*"We all had a part in the damage done; we all should pay our debt!"*

The average willingness to pay was almost double (\$7 v \$4) the amount from the Oregon Progress Board study also done in 1996. The two surveys used different scales, with ours being "nothing," "\$1," "\$5," "\$10," "\$20," and "more than \$20." The Oregon Progress Board used "nothing," "\$1-3," "\$4-6," "\$7-10," and "more than \$10." In 1996 the Oregon Progress Board found that 26% were willing to pay more than \$7 per month, and 22% said they would pay nothing (Oregon Progress Board, personal communication, 1996). A Washington survey concluded, "Approximately 3/4 of the respondents would support such an effort (greater protection for fish and wildlife) for an annual tax increase of \$100 or less, but the proportion drops significantly to approximately 2/3 for an annual tax increase of \$200" (WDFW 1996).



Sandy Ridlington/Oregon Sea Grant

Educational programs involving landowners and students are giving at least some Oregonians more direct understanding of salmon life history and the relationship of fish to ecosystems. These students are taking part in a Salmon Watch field trip organized by Oregon Trout and led by volunteers.

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Table 1 illustrates variables differentiating those not willing to pay from those willing to pay for salmon restoration.

Variable	Willing to pay nothing	Willing to pay \$1/ and \$5/mo.	Willing to pay \$10/mo. or more
Restoring environmental quality 1= not important at all 5= very important	3.1	4.1	4.2
Restoring salmon even if expensive 1= strongly disagree 5= strongly agree	3.2	4.0	4.2
Reducing property taxes 1= not important at all 5= very important	4.2	3.7	3.3
Knowledge about salmon issues 1= not at all 5= very knowledgeable	3.2	3.2	3.8
Decrease hatchery production 1= not important at all 5= very important	1.8	2.2	1.9
Confidence in BLM and Forest Service 1= no confidence at all 5= a great deal	2.6	3.1	3.0

A number of other willingness-to-pay studies have been conducted. Coastal respondents' willingness to pay may be partly due to the fact that community leaders have a higher willingness to pay than residents. Olsen et al. (1991) summarize surveys giving a range of \$3–\$9 per month (constant 1996 dollars) for salmon and steelhead in

Table 2 shows variables differentiating those not willing to volunteer from those willing to volunteer for salmon restoration.

Variable	Willing to volunteer no time	Willing to volunteer 1 hour–half day/mo.	Willing to volunteer > half day/mo.
Restoring salmon even if expensive 1= strongly disagree 5= strongly agree	3.4	4.0	4.2
Reducing property taxes 1= not important at all 5= very important	4.0	3.5	3.6
Concern about the future of salmon 1= not at all 5= very concerned	3.8	4.1	4.4

1989. A Washington survey found approximately 3/4 of the respondents would support up to a \$100 annual tax increase for greater protection of fish and wildlife. At \$200 per year support drops to 2/3 (WDFW 1996).

We used discriminant analysis, which shows the variables that best differentiate two or more groups, to determine the differences between those who were willing and unwilling to pay for salmon restoration. The population was divided into three groups—those willing to pay nothing, willing to pay \$1–\$5, and willing to pay \$10 or more. Discriminant analysis works in a stepwise procedure, and Table 1 shows the order by which the discriminating variables entered. The first variable was how people thought about restoring environmental quality; the second was whether they believed in protecting salmon even if it was expensive. Those willing to pay for salmon restoration rated both of these variables as more important than respondents unwilling to pay. Those willing to pay were less concerned about reducing property taxes and were more knowledgeable about salmon issues. They also had more confidence in the Bureau of Land Management and Forest Service. Discriminant analysis also characterized three other groups of respondents: those not willing to volunteer, those willing to volunteer an hour to a half-day per month, and those willing to volunteer a day or more per month. Respondents willing to volunteer also were more willing to protect salmon despite a high cost, were less concerned about reducing property taxes, and were more concerned about the future of salmon (Table 2). The discriminant analysis offers a stronger explanation for those willing to pay than for those willing to volunteer (eigenvalue is 0.6 v 0.2; Wilkes's Lambda is 0.57 v 0.81. Both discriminant analyses are significant to  $p < 0.0001$ ).

### Communicating with the Public

Because of the level of distrust for government, communicating with the public is difficult. Some respondents said, "I just don't know whom I can trust" or "All the information is biased." The average confidence level [in the ability of institutions and organizations to manage salmon] was just below moderate (a ranking of 3.0, on a scale of 1–5, Figure 2). Why do coastal respondents prefer state planning for salmon restoration when they have low regard for state government? They expressed a preference for more local control in planning for salmon restoration, but they also recognized that the task was beyond local capabilities. The state was the lesser of several evils. Further, the confidence question was worded as "Oregon state agencies," and a negative feeling for one agency may have influenced responses. Of those giving priority to economic considerations, 38% expressed little or no confidence in state agencies. Among those who gave priority to environmental considerations, lack of confidence in state agencies dropped to 22% (Chi-square = 40.1,  $p < 0.001$ ). As expected, respondents who gave greater consideration to the environment also gave greater support to environmental groups as sources of information (Kendall's correlation -0.58,  $p < 0.001$ ), although many say that environmental

groups have "gone too far." Both the group of respondents who weighed environmental and economic considerations equally and those who emphasized the economy expressed negative views toward environmentalists. Other surveys find similar results. MacWilliams Group (1995) found that even in the environmentally active Northwest many people would describe environmentalists as "extremists." Many respondents to our survey expressed a desire for a moderate, centrist approach.

*"The public in general needs easier access to unbiased information on many important issues. TV and most mass media is too colored or homogenized, yet very influential!"*

*"I understand the need to protect and restore streams, but I don't understand how wetlands affect the salmon."*

*"[Need] a better education to the people, like me for instance."*

Eighty-five percent of respondents said they receive their information from multiple sources. For example, of the large number of people who got their information by word of mouth (60%), only a small percentage (7%) relied solely on that source. Television and radio (62%), and newspapers (45%) were the other most-cited information sources, but only 5% of respondents reported that they got their information solely from one of these sources. Many respondents believed that knowledgeable local people were the best sources of information. Recreational and commercial fishers were generally perceived to be knowledgeable and were a frequently mentioned source of word-of-mouth information. State agencies were cited as good sources by 35% of respondents; environmental groups were cited by 28%.

## Environmental v Economic Considerations

Demographic variables such as age, gender, income, education, and length of residence reveal few significant differences among coastal respondents. This could be explained by inadequacies in the survey, or possibly demographic differences are not as important as coastal respondents' values. The survey reveals that values regarding the environment are more significant shapers of opinion than any demographic factors. One important tool for measuring values that has been used in other surveys weighs individual preferences on environmental and economic considerations. Table 3 compares our survey with others on this question. Like other surveys, environmental considerations tended to outweigh economic ones, while the majority of respondents favored a balance between the environment and economy. Even when the question was asked slightly differently, the responses generally favored the environmental side. Of Oregonians asked to react to the statement, "Environmental protection will become more important than economic growth," 28% said this was "very desirable," and 25% said this was "somewhat desirable" (Oregon Business Council 1993). In December 1994, Peter D. Hart and Associates conducted a nationwide survey about U.S. laws to protect the environment. Forty-one percent said the laws "don't go far enough," while 18% said they went "too far." Respondents who favor economic considerations were significantly different from those

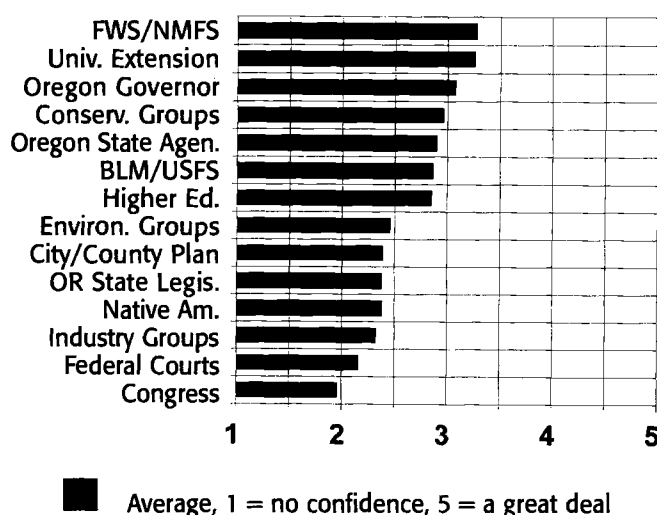


Figure 2 depicts levels of confidence by coastal respondents in organizations and institutions.

favoring environmental considerations (Table 4). Using discriminant analysis, we differentiated among three groups—those who favored environmental considerations, those who weighed environmental and economic considerations equally, and those who favored economic considerations. The variables were loaded in a stepwise procedure (Table 4). Respondents giving greater weight to environmental considerations were more confident in environmental groups and more concerned about restoring environmental quality, protecting salmon, and managing tourism. The discriminant function is significant at  $p < 0.0001$  and classifies 70% of the cases correctly.

Those giving economic priority were more likely to want to reduce marine mammal populations, were more supportive of changing endangered species laws, were less likely to want to change forest and farm management, were more protective of private landowners, were less interested in protecting wetlands or protecting salmon, and were less



Oregon State University Extension Sea Grant Agent Paul Heikkila (center) speaks with coastal landowners about salmon restoration in Oregon's Coquille River Valley.

Tom Gentile/Oregon State University

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Table 3 compares surveys on whether priority should be given to environmental or economic considerations.

Variable	Priority to environmental conditions	Environmental and economic factors should be equal	Priority to economic conditions
Coastal (1996)	40%	44%	16%
Oregon (1991)	37%	44%	19%
National (1991)	42%	47%	11%
Oregon Progress Board (1993) categories	Environmental protection over economic growth very or somewhat desirable	Neutral on environmental protection and economic growth	Environmental protection over economic growth very or somewhat desirable
Oregon Progress Board (1993)	54%	15%	28%

Sources: Linn and Lane County (Steel et al. 1994b; Shindler et al. 1995); Oregon and National (Shindler et al. 1993; Steel et al. 1994a); Oregon Progress Board, personal communication.

willing to pay or volunteer to restore salmon. Coastal respondents who showed more support for the environment were more confident about the federal courts, environmental groups, conservation groups, and the Extension Service (Chi-square = 74.8, 276.9, and 68.7, respectively, significant at  $p < 0.0001$ ). Respondents' values toward environmental and economic considerations have more and stronger correlations than any of the demographic variables, with 30 of 60 variables correlating at  $p < 0.0001$  or better. For the demographic variables, the highest number of correlations was 11 of 60. This suggests that coastal respondents will interpret and evaluate materials and information

Table 4 shows variables differentiating those favoring environmental v economic considerations in salmon restoration.

Variable	Favor environmental considerations	Environmental and economic considerations equal	Favor economic considerations
Confidence in environmental groups 1= no confidence at all 5= a great deal	3.6	1.9	1.2
Restoring environmental quality 1= not important at all 5= very important	4.7	3.6	2.4
Greater protection for salmon 1= not important at all 5= very important	4.3	3.5	3.2
Managing tourism 1= not important at all 5= very important	4.0	3.7	2.8

according to their beliefs rather than according to their age, gender, income, education, and length of residence. The role of values has another important implication for understanding how coastal residents relate to salmon issues. The priority of different values suggests that groups of coastal respondents will want different approaches to managing the coastal ecosystem to assure the future of salmon. Those who gave higher priority to environmental considerations tended to be closer to the views expressed in the Governor's Coastal Salmon Restoration Initiative. On several major issues, however, the views of coastal residents were divided and may be at odds with the values reflected in the plan. Communication and education will need to be a primary focus of any restoration plan.

## Conclusions

Coastal respondents are a diverse group whose opinions range widely on salmon issues. Value differences explain this diversity more effectively than demographic characteristics. Planning and communication programs will be more successful if they recognize that people's values affect how they perceive and receive information about salmon issues:

*"I would like to know if all groups involved realize the problem with salmon is the population explosion of our species. Salmon will stay extinct as does the passenger pigeons, the wild bison, etc."*

*"Fencing streams was an environmental wacko idea. Surprised it wasn't voted in."*

*"Outlaw all driftnets at sea by any country. Stop the clear-cutting."*

Salmon compete with other issues for the attention and resources of the coastal residents. In a question asking respondents to rate the importance of various issues, investing in education ranked highest (4.5 on a 5.0 scale), followed by increasing family-wage jobs (4.2), restoring commercial and recreational fisheries (4.2), and reducing crime (4.1). Efforts to restore salmon will be more successful if they can be tied to broader environmental concerns such as water quality, healthy streams, and care for the physical resources of the coastal region. Tying salmon restoration to the economic interests of coastal residents should make it more successful.



People express concern about extreme approaches. What is considered extreme varies according to personal values, but people want salmon restoration efforts to take a clear, fair approach based on sound information. "Common sense" is the term often used when describing this approach. Greenberg (1995:5) says, "The concept of 'common sense'—indeed, the words themselves—now pervades the public discourse about government." An Idaho focus group study found, "On virtually every environmental issue, these voters demand reason, compromise, and balance" (Lake Research, personal communication, 1995). Whatever is done will need to demonstrate results, which can be difficult since many restoration efforts take years to show positive effects. Carefully measured and well-communicated results of salmon restoration are important in efforts to boost public participation. The public is in a 'show-me' mood and does not trust people in authority, whether scientists or government officials. They check results against their experience and the reviews of their neighbors.

For the restoration initiative to earn support from coastal people, the gaps between government and local interests, the misunderstandings between scientists and citizens, and the differences between environmental and economic interests need to be bridged. These gaps, misunderstandings, and differences are considerable. Resource planners rely on science to justify their actions, while coastal residents' experiences often lead them to different conclusions. Coastal residents are skeptical of scientific findings that conflict with their experiences and the experiences of those whom they see as knowledgeable. They will need to be convinced of the wisdom of any salmon restoration plans that are counter to local knowledge. Convincing them will necessitate clearer understanding of how coastal ecosystems work to support salmon and clearer communication of the rationale for restoration projects. 🐟

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