

Utility of a Needs Assessment as an Initial Outreach Tool:
A Case Study of Recovery Planning for the Threatened Oregon Coast Coho Salmon

by

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Project Report

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Outreach is a key element in natural resource public participation processes in order to create an engaging, thoughtful, and productive environment for citizen involved decision-making. This project examined the utility of a needs assessment as an initial outreach tool within the context of the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) recovery planning for the Threatened Oregon Coast coho salmon (*Oncorhynchus kisutch*). I conducted an informational needs assessment of the Oregon watershed councils which reside within the area of the listed coho salmon evolutionarily significant unit. Through the use of the needs assessment, I was able to ascertain the informational needs of the watershed council coordinators regarding coho salmon topics, identify the resources coordinators use for this information, understand their usage of web sites, and learn their preferred mechanism of communication for recovery planning information. From collecting this information, I provide recommendations to NOAA Fisheries for increasing the efficiency and effectiveness of their recovery planning outreach strategies and discuss the utility of the needs assessment as a tool for outreach personnel.

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INTRODUCTION

Communication strategies between governmental agencies and the public are evolving, especially in the management of natural resources where issues can be very complex and highly contentious. Federal, state, and local agencies have responded to legislative mandates and public pressure by increasing the public's involvement in environmental decision-making. This involvement has led to an array of research on public participation techniques and the effectiveness of these techniques. Agencies have been re-evaluating their approach to public participation based on published research and, more commonly, trial and error. With agencies' goals and their associated objectives being redefined because of daily interactions with the public, public involvement continues to progress. This progress is demonstrated by the increasing number of stakeholders who participate and the improvement in the quality of the interaction between the public and agency personnel.

Outreach is one component of the public involvement process that is continually being shaped and molded to fit the needs of the specific situation. An example of this evolving plan is the outreach conducted for the recovery planning of the Threatened Oregon Coast coho salmon (*Oncorhynchus kisutch*). Outreach in this process is best defined by the goals and the means used to achieve those goals. The goals of outreach in the initial stages of recovery planning are to raise the public's awareness of recovery planning and to educate interested parties on the process of formulating a recovery plan. A number of mechanisms are employed to achieve these goals, including media releases, public presentations, personal communication, and web site development. An additional tool used to advance the goals of outreach in this process was a needs assessment. This needs assessment was conducted among local watershed council coordinators to determine their informational needs and communication preferences in relation to coho salmon and recovery planning. This effort, combined with the other outreach mechanisms, is intended to stimulate the interest of the stakeholders so they will become involved in the process. The results of the assessment and the utility of such a needs assessment in the initial stages of public participation that will contribute to achieving the outreach goals are discussed in this paper.

The Development of Public Participation

Public participation in natural resource decision-making by the federal government moved to the forefront of public discussion at the onset of the environmental movement in the late 1960's and 1970's. During this period of time, an increasing amount of environmental legislation was enacted that explicitly gave the public a voice in agency decision-making. Most notably, the National Environmental Protection Act (NEPA) in 1969 furthered the role of citizens in government decision-making concerning environmental issues. The NEPA requires public notice to be given throughout the entire environmental review and planning process. Included in the NEPA is the requirement of an Environmental Impact Statement (EIS). The EIS states that alternative methods to the proposed project must be described and public comment must be allowed. The request for written public comments by way of the EIS is one mechanism of facilitating public comment. Environmental statute requirements, such as noted in the NEPA, and public pressure for more involvement in decision-making capabilities have increased the interest of outreach personnel towards finding more effective and efficient public participation techniques.

To inform the public participatory process, researchers have focused their efforts on sharing varying methods and techniques that may serve to assist with effective implementation. Because the legislative guidelines in the environmental enactments are non-specific as to how public participation must occur, case studies have shed light on which techniques are useful in varying public agency situations (Fortmann & Lewis, 1987; Lawrence & Deagan, 2001). The involvement of stakeholders has been shown to be of great importance in achieving success (Burroughs, 1999; Nature 1999), while specific techniques to involve those stakeholders have been described (Duran & Brown, 1999; Konisky & Beierle, 1999). From the evaluation of these techniques rose the discussion in the academic literature of an attempt to find the overriding factors that deem a plan successful. Chess & Purcell (1999) and Beierle & Cayford (2002) found that because each natural resource issue takes place in a different context, with varying local history and a differing patchwork of involved citizens, examining case studies for similar themes could shed light on the issue of success. Chess and Purcell (1999) concluded with the following

“rules of thumb” for conducting public participation: 1) clarify goals, 2) begin participation early and invest in advance planning, 3) implement a public participation program with various forms of public participation, and 4) collect feedback on public participation efforts. These activities all contribute to the success of the decision-making process. Beierle & Cayford (2002) found that more-intensive mechanistic approaches, responsive agencies, motivated participants, and high-quality deliberative processes are good characteristics of a public involvement process. With these broad qualities being noted, it is filling in the details about particular techniques that continues to develop public participation.

Role of Needs Assessments

A needs assessment, as defined by Witkin & Altschuld (1995) is “a systematic set of procedures undertaken for the purpose of setting priorities and making decisions about program or organizational improvement and allocation of resources. The priorities are based on identified needs.” Conducting an assessment of this type determines the gap between “what is” and “what should be” or the desired state of affairs. It locates discrepancies, examines their nature and causes, and sets priorities for future action. The type of information derived from a needs assessment is intended to be used as a guide for making policy and program decisions that will affect targeted groups of people. Overall, the needs assessment should have the intention of leading to action, change, or improvement (Witkin & Altschuld, 1995). This description highlights the differences between conducting a needs assessment and the more common act of surveying. To survey, as defined by Merriam-Webster Dictionary is “to query (someone) in order to collect data for the analysis of some aspect of a group or area.” A needs assessment not only queries a group with the intention of collecting information, but takes that information a step further to perform an action that will benefit the group that was queried.

Currently, needs assessments are most commonly used in and written about in educational and social arenas. In 1933, John Dewey was one of the first to address needs assessments by examining the learner’s perspective when designing educational materials (Cowall, 2000). Many books focus on educational or instructional design improvements founded on employing a needs assessment. These materials cover

everything from illuminating situations where a needs assessment is useful to performing and then evaluating the assessment itself (Kaufman & English, 1979; Queeney, 1995; Shambaugh & Magliaro, 1997). Pololi *et al.* (2003) tie in education with another area that uses needs assessments frequently - health care. Other studies have focused their efforts on specifically improving programs or services to the public including improving community service to the elderly (Balaswamy, 2002). Needs assessments are widely used to bridge the gap between what is the perceived need and what is the actual need of the stakeholder.

Even though needs assessments are commonplace in educational and social scientific arenas, the academic literature is lacking in papers that discuss needs assessments in a natural resource management setting. In natural resources management, education is certainly a large component, thus, needs assessments have been carried over from the formalized K-12 classroom improvements to the environmental program arena (Meichtry & Harrell, 2002). Environmental education programs have used needs assessments to tailor their curricula to the needs of the public they serve (Mark Damian Duda & Associates, 1998; Zint & Crook, 1998; Fedler & Ditton, 2000). Branching off from environmental education needs assessments, the published literature thins. Needs assessments have been used to assess environmental or conservation needs that serve to better environmental health (Burchett *et al.* 1998). Schwartz *et al.* (1995) discussed the assessed habitat needs of wildlife on abandoned farmland. Murray (2001) conducted a needs assessment of the public on behalf of the Sea Grant Marine Advisory Program to determine the need and interest for government associated grants for boating infrastructure development. However, needs assessments do not appear to be widely used as an outreach tool in public involvement processes.

Recovery Planning for the Threatened Oregon Coast Coho Salmon

In August of 1998, the evolutionarily significant unit (ESU) of Oregon Coast coho salmon (*Oncorhynchus kisutch*) was listed as Threatened under the Endangered Species Act (ESA) (Figure 1). This listing triggered the National Oceanic and Atmospheric Administration Fisheries Office (NOAA Fisheries) to undertake recovery planning for the coho salmon populations that are considered part of this ESU (ESA

Sect 4(f)). Recovery planning is a multi-year process that incorporates all aspects of natural resource management. A team of scientists from public and private entities carries out the first phase of the recovery planning process; this group of scientists forms the Technical Recovery Team (TRT). They are tasked with the following duties which lay the foundation for coho salmon recovery in the listed ESU.

- Identify the coho salmon populations along the Oregon Coast and classify them as either independent, semi-independent, and dependent.
- Identify viability criteria for each population such as abundance, productivity goals, spatial structure, and diversity.
- Develop coarse-scale characterization of the amount, quality, and distribution of freshwater habitat and relate habitat to salmon abundance.
- Identify the key life stages that currently have the greatest effect on population viability.
- Identify the principle factors currently limiting those key life stages (habitat related, hatcheries, harvesting practices, climate change, etc.)
- Begin to identify early actions for recovery such as what should be done and where should these efforts be focused.
- Provide a scientific foundation for monitoring programs and recovery planning evaluation techniques.
- Continue to serve as advisors to the policy forum in the second phase.

The second phase of recovery planning involves a policy forum of interested stakeholders that will take the recovery goals outlined by the TRT and develop and incorporate management actions into the plan that could achieve these goals. The policy forum will represent a diverse interest of stakeholders including federal land managers, state, tribal, local, and private entities. This group of stakeholders is tasked with evaluating existing programs that affect Oregon Coast coho salmon. One key step will be to examine the watershed assessments and action plans developed by watershed councils to assess the state of the local watershed, the priority actions identified in the plans, and the work that has been implemented. The policy forum will also be examining other management plans i.e. Oregon Plan for Salmon and

Watersheds to describe any gaps between the existing programs and those needed to implement the identified strategies by the TRT. This policy group will propose how to fill those gaps with new or enhanced programs. In addition, they will be responsible for selecting a suite of actions that have a reasonable likelihood of implementation and prioritizing those actions to address the most significant threats to recovery while capitalizing on the greatest opportunities to increase population productivity. In order to carry these actions out, the policy forum will identify funding sources for these actions. The group will not disband once they have the plan in place because they will be responsible for adjusting the recovery actions based on the results from the monitoring program.

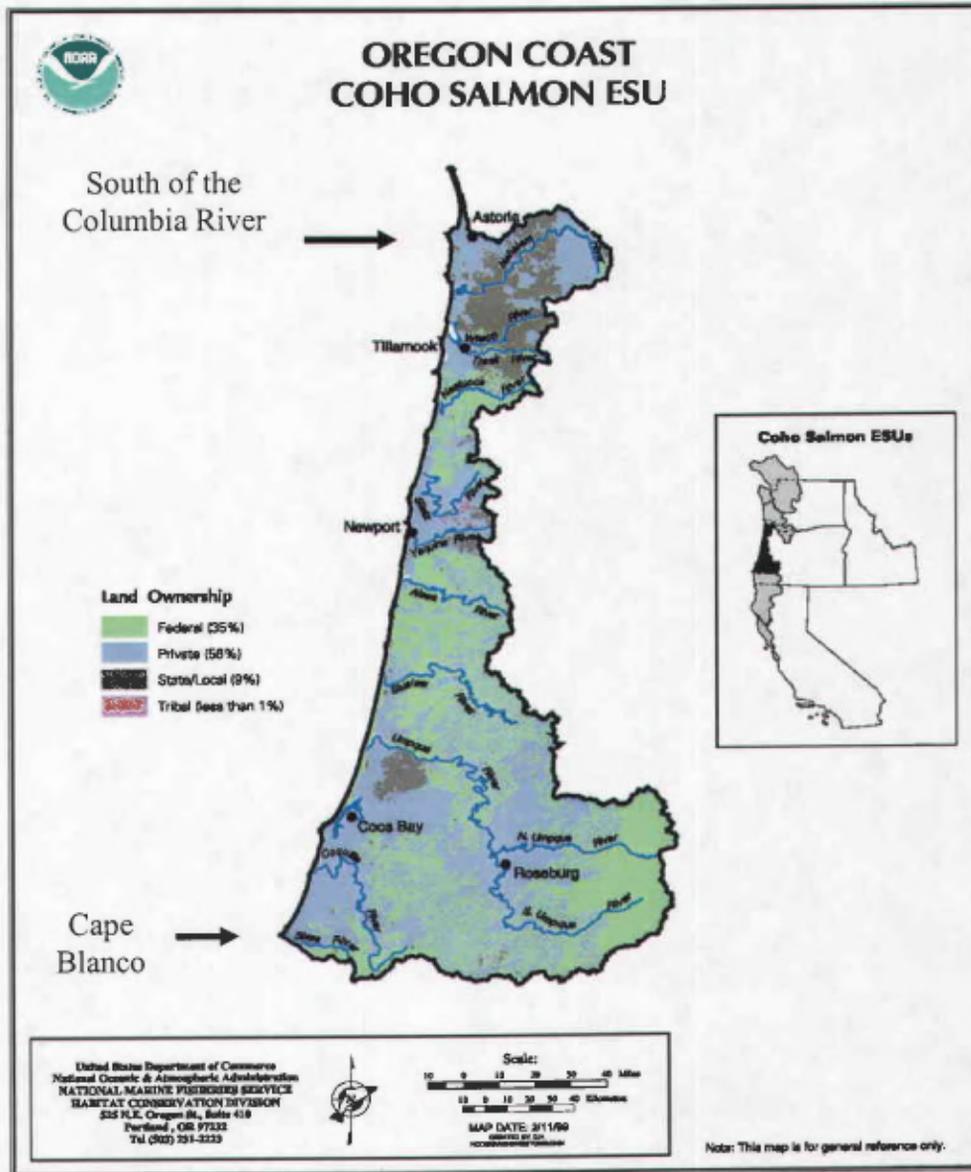


Figure 1. The Oregon Coast coho salmon evolutionarily significant unit (ESU). This ESU includes the coastal area south of the Columbia River to Cape Blanco.

Public Involvement in Recovery Planning

Recovery planning is designed to encompass a wide range of natural resource individuals including scientists, managers, and interested stakeholders. The act of recovery planning is a public participation process because without local support, the plan is less likely to succeed. During the initial stage of the recovery planning process in which the TRT is most active, outreach and education of interested stakeholders is a key component. It is upon these activities that successful implementation of the plan is built, because it is local Oregon residents who will implement the actions outlined in the plan. Outreach to interested stakeholders at an early stage can increase awareness of the process so no one is taken by surprise as documents and/or decisions are made. The public can participate through several venues. TRT meetings are open to the public for interested persons to attend and they are given the opportunity to comment on or question the TRT discussions during the public comment period. Additionally, workshops are scheduled at the time draft documents are released. Through any of these activities, stakeholders have an opportunity to comment, question, and debate the validity of the process or products with the TRT.

During the second stage of recovery planning when the policy forum is formed, public participation peaks. All of the outreach and education efforts conducted in the beginning stages will contribute to recruiting an educated pool of interested stakeholders for developing the recovery plan. The greater the diverse stakeholder representation in the policy forum, the greater the probability of acceptance and implementation of the plan by all interested constituencies (USFWS & NMFS, 2003).

The needs assessment study was designed and conducted during the beginning months of recovery planning in order to inform the NOAA Fisheries' outreach efforts. The study focused on answering six questions that would address the main goals of this project. The first goal addressed the need for the NOAA Fisheries to provide information on topics related to coho salmon and the recovery efforts. Information is the key to educated decision-making, thus, assessing the coordinator's status of knowledge on topics related to coho salmon could provide direction for outreach efforts. If coordinators do need more information, the second goal was to find out how

they prefer to receive that information. In this day and age, the Internet and web sites are used extensively to display information with the intention of communicating that information to a wider audience. Because the NOAA Fisheries has a recovery planning web site, the third goal was to determine if web sites are an effective means of communicating with watershed council coordinators. In addition to determining if web sites are an information source, the fifth goal examined what other information sources watershed council coordinators use for information on coho salmon, thus, identifying sources that would be advantageous for the NOAA Fisheries to target about recovery planning. Proceeding in this manner would disseminate information most efficiently and effectively. The last two goals addressed the NOAA Fisheries recovery planning efforts specifically. The fifth goal was to find out if this stakeholder group was interested in recovery planning. If the coordinators were interested in recovery planning and the activities of the TRT, the sixth goal, was to establish how best is it for the NOAA Fisheries to communicate with them about recovery planning activities.

The applicability of the findings in this study to other groups is limited yet the information that can be extracted from the project design and overall goals is highly valuable for other natural resource managers who are interested in increasing the success of public involvement processes. This project censused all 20 watershed council coordinators whose watersheds reside within the listed ESU, therefore, testing of hypotheses related to this study is invalid. However, this study introduces the audience to the process of conducting a needs assessment and the information that can be learned.

METHODS

NOAA Fisheries designated the Oregon Coast coho salmon that inhabit the coastal region from south of the Columbia River to Cape Blanco as a Threatened evolutionarily significant unit (ESU). This designation geographically delineated the area of interest for this needs assessment. I chose to focus the needs assessment on watershed council coordinators within this ESU for three reasons. First, watershed councils are considered a key stakeholder group in the recovery planning process.

Watershed councils are locally organized, voluntary, non-regulatory groups established to improve the condition of watersheds in their local area (OWEB, 2000). In the state of Oregon, they blossomed in the mid-1990's when the idea of organizing grassroots efforts to protect environmental health was encouraged through funding opportunities by the state of Oregon. Watershed councils receive state and federal funds distributed by the state agency of the Oregon Watershed Enhancement Board for implementation of the Oregon Plan for Salmon and Watersheds (Oregon Plan). The Oregon Plan was implemented for the purpose of salmonid recovery through restoration and conservation of healthy watersheds. Through the councils' local efforts and wide array of membership, watershed health education is disseminated among the community. Due to this local involvement, assessing the coordinators information and communication needs could effectively inform the outreach and education process conducted by the NOAA Fisheries during this recovery effort. Secondly, the implementation of the recovery planning process will occur in the councils backyards, thus, understanding their needs and opening communication pathways will benefit both groups as the recovery planning process continues. Finally, I only chose this stakeholder group, rather than conducting a broader survey of other identified interested stakeholders, because of the limited time I had to complete this project.

I used a booklet format needs assessment, which was sent by mail. This format allowed the coordinators to respond at their convenience, which was necessary because it was mailed to them during their busy summer field season. I designed the needs assessment based on guidance from Dillman (2000) and with assistance from the Survey Research Center at Oregon State University for question clarity and overall format. This assessment was reviewed and approved by the Oregon State University Institutional Review Board before it was mailed. I chose to conduct all correspondence with the watershed council coordinators using my Oregon State University affiliation instead of identifying myself with the NOAA Fisheries. Using an educational affiliation provided a neutral environment for the coordinators, which I assumed, would increase their likelihood of responding to the assessment.

The needs assessment was designed to answer pertinent questions that could inform the NOAA Fisheries outreach process during recovery planning. The assessment contained five sections. The first four sections covered the topics of Coho Salmon Life History and Ecology, Habitat Restoration for Oregon Coast Coho Salmon, the Oregon Plan for Salmon and Watersheds, and Harvest Regulations of Coho Salmon in Oregon. The questions for these sections addressed the respondent's need for more information on the topic, the sources they use for this information, and the quality of that information source. The fifth and final section of the needs assessment pertained to recovery planning efforts by NOAA Fisheries for the Oregon Coast coho salmon. The questions covered the respondent's knowledge and interest level in recovery planning, their interest in being notified of various events throughout the TRT phase, and their preferred means of communication.

All 20 coordinators within the area of the listed coho salmon ESU boundaries were mailed a needs assessment. I identified these coordinators and obtained their contact information through a list published by the Oregon Watershed Enhancement Board. An initial phone call was made to each coordinator (permitting their phone number was published) informing them they would be receiving the needs assessment in the mail. The questionnaire was mailed the following day in July 2003, and an e-mail and phone call encouraging them to return the needs assessment were made three weeks later. A second questionnaire was sent to the non-respondents six weeks after the initial mailing with a follow-up phone call to inquire about the status of the needs assessment; a final reminder phone call was made two weeks later.

Data from the responses were coded and entered into Excel, and descriptive statistics were used to build a picture of informational and communication needs for these coordinators. In close-ended questions, all of the choices offered to the respondent were options, that if chosen by the greatest percentage of respondents, NOAA Fisheries would be able to fulfill. Open-ended questions were included, and some participants chose to write in answers to the close-ended questions. The numbers that follow in this paper do not always add up to 16 (total number of returned needs assessments), because some coordinators chose not to answer all sections of the needs assessment. Percentages may not add up to 100 because of rounding.

Perception of Needs

In addition to assessing the needs of the watershed council coordinators, I surveyed the members of the TRT to compare and contrast the perceived and actual needs of the coordinators. A short survey of five questions was given to the twelve scientists, two recovery coordinators, and one staff person of the TRT. All 15 members responded. The majority of the TRT members are not directly responsible for the outreach actions implemented in recovery planning, but they are a representative group of scientists who many times are charged with conducting outreach and education for natural resource issues.

RESULTS

The needs assessment response rate was 80% (16/20). Ten of the 19 needs assessments were returned within the first three weeks; a total of 13 needs assessments were received after five weeks. Three coordinators who did not return their assessment stated they were too busy during the summer field season to respond. The fourth non-respondent was dealing with significant health issues that precluded him/her from returning the assessment. Two respondents identified themselves as other than watershed council coordinators. One of these former respondents identified them self as the "council president", while the other identified himself as "council member-partner." From personal communication with, or knowledge of, these respondents' positions in the watershed council, both persons are considered as "watershed council coordinator" for the purposes of this paper.

Oregon Coast Coho Salmon Restoration Efforts

Since the issue of declining populations of coho salmon was brought to the forefront of watershed management in the mid-1990's by the state of Oregon, many of the Oregon coastal watershed councils focus their efforts towards conserving this species. A large majority of the respondents (88%) said that more than half of their watershed council projects affect habitat improvement for Oregon Coast coho salmon. The two main reasons councils conduct coho salmon restoration activities is either because of their interest in Threatened Oregon Coast coho salmon or the influence of the Oregon Plan for Salmon and Watersheds (Oregon Plan). Respondents also

mentioned two additional motivations for conducting habitat restoration as being the availability of funding and the desire to return the coho salmon fishery to economic importance. All four of these motivations are essentially tied together. The closure of the Oregon Coast commercial coho salmon fishery in 1994 strongly affected many Oregon coastal fishing towns. This action was one of several that resulted from a decline of the Oregon Coast coho salmon (Figure 2). With the potential listing of the Oregon Coast coho salmon on the Endangered Species Act looming, the state of Oregon attempted to defer the listing by developing the Oregon Plan. Even though the listing was not held at bay, the creation of the Oregon Plan directed state dollars to watershed restoration activities affecting coho salmon along with federal money appropriated by Congress through the Pacific Coast Salmon Recovery Fund (PCSRF, 2003).

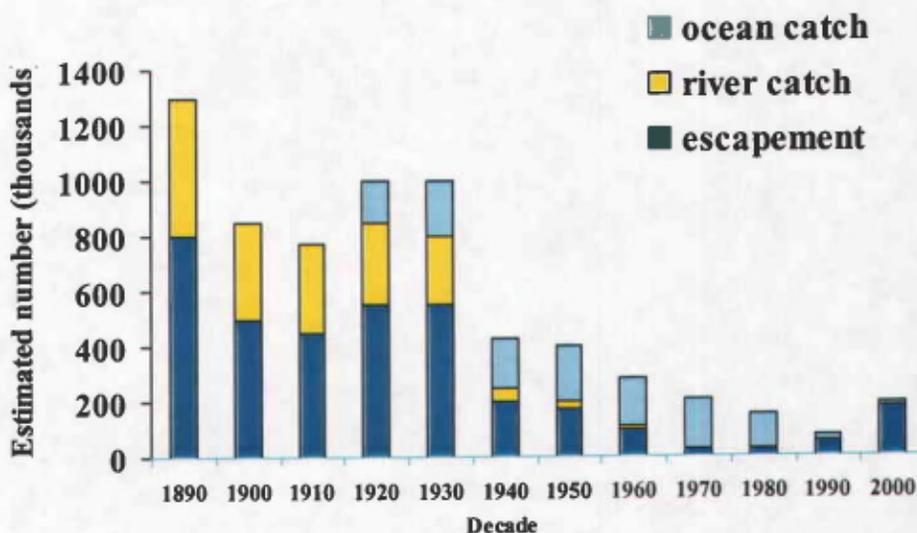


Figure 2. Abundance of Oregon Coast coho salmon from 1890 to 2000. Each bar represents the average abundance of coho salmon over that decade (ODFW 1995). Updated by ODFW in June 2003 (Nickelson, T).

Informational Needs

Watershed council coordinators have a multitude of duties which they are conducting on limited time and budgets. They are part of a field where science and management are evolving at varying speeds and the necessity to keep them informed about the latest information is important. Coordinators were almost evenly split as to whether or not they need more information for three out of the four coho salmon subjects (Coho Salmon Life History and Ecology, Habitat Restoration for Oregon Coast Coho Salmon, Harvest Regulations of Coho Salmon in Oregon) (Figure 3). The Oregon Plan category was the only topic that they agreed they did not need more information for (88%). Their overall informational needs regarding Oregon Coast coho salmon issues show that 61% do not need more information while 39% feel they do need more information on these four topics. Removing the heavily weighted category of the Oregon Plan, the difference between the need for information decreases. Fifty-two percent of the coordinators feel they do not need more information, whereas, 48% say they do.

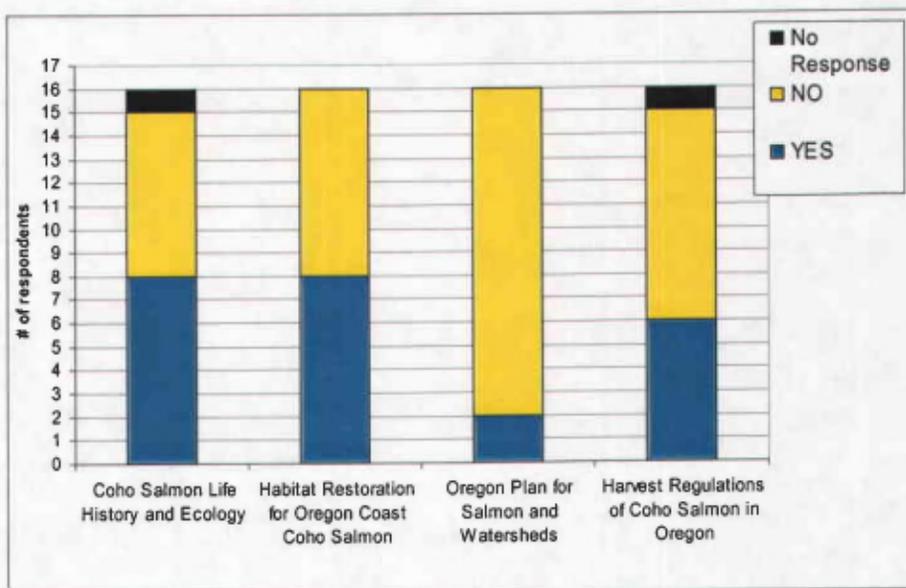


Figure 3. Response of watershed council coordinators as to their need for more information on the four topics relating to Oregon Coast coho salmon.

Mechanism to Receive Information

Approximately 50% of the coordinators need more information on three out of the four coho salmon topics, therefore, it is worthwhile to examine the avenues by which they prefer to receive that information. If coordinators needed more information on a given topic, they were asked to respond to an open-ended question regarding how they would prefer to be educated on that topic. The coordinators indicated a similar mechanism for sharing the needed information on all four topics (Table 1). The main idea stressed by the coordinators who needed more information (6 of 8 respondents on life history and ecology; 7 of 8 respondents on habitat restoration; both respondents for the Oregon Plan; 4 of 6 respondents on harvest regulations) was to present the needed information in some form of a workshop, training, or presentation.

In addition to workshops, trainings, and presentations, the coordinators mentioned the Internet in one form or another (6 of 8 respondents on life history and ecology; 5 of 8 respondents on habitat restoration; 3 of 6 respondents for harvest regulations).

	Life History and Ecology	Habitat Restoration	Oregon Plan	Harvest Regulations
Number of coordinators who need more information	8	8	2	6
Number of coordinators who indicated trainings/workshops/presentations	6	7	2	4
Number of coordinators who indicated web sites	6	5	0	3

Table 1. The response of coordinators as to how they would prefer to receive information on the four coho salmon topics.

Reliance on Web Sites for Information

The introduction of the World Wide Web has added a new dimension to society's many mechanisms of communication. Even though ideas and information are placed on web pages for public access, the question remains whether or not the intended audience is viewing the available information. Watershed council coordinators were asked to indicate what they use the Internet for and how frequently. All of the coordinators use the Internet for communication via e-mail and all but one respondent (94%) use the Internet to gather information relating to natural resource issues. Coordinators were offered an "Other" category in which 31% of them wrote in that they use the Internet to "locate funding sources." The 15 coordinators who indicated they use the Internet to obtain information on natural resource issues were also asked the frequency that they are searching web pages. Seven coordinators (47%) are searching the Internet once per week while another seven coordinators are searching the Internet a minimum of 2-3 times per week (Figure 4).

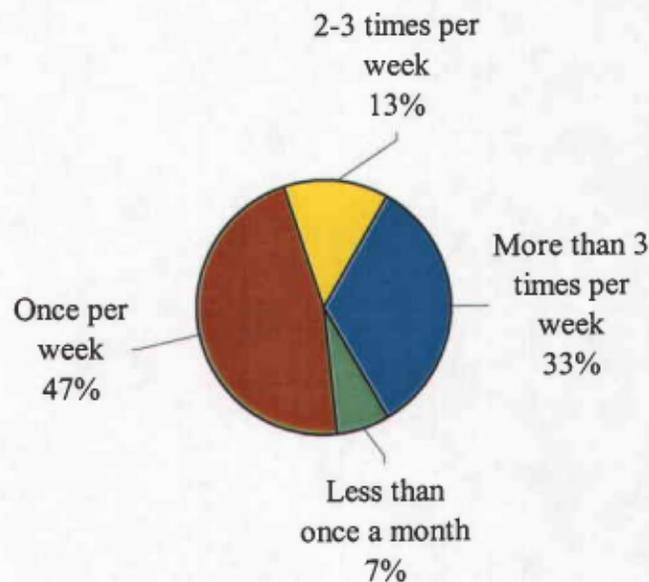


Figure 4. The frequency that watershed council coordinators are searching the Internet for natural resources information. Ninety-four percent of the coordinators are searching web pages a minimum of once per week.

Besides determining how often coordinators are searching the Internet for natural resource information, I also asked the coordinators more specifically their usage of web sites for each of the four coho salmon topics. A small percentage of them (29%) appear to rely on web sites for information pertaining to Oregon Coast coho salmon (Figure 5). Only 13% of the respondents rely on web sites to obtain information regarding coho salmon life history and ecology. The number of respondents who rely on web sites for information regarding habitat restoration for coho salmon increased by one, raising the percentage to 19. However, the reliance upon web sites for information about the Oregon Plan was much higher than any of the other categories. Sixty-three percent of the respondents are accessing information via the Internet for this subject. For information regarding another type of management action, coho salmon harvest regulations, 20% of the respondents rely on web sites. Overall, 29% of respondents rely on web sites as a source for information regarding coho salmon issues. If the Oregon Plan is removed from the calculations, the percentage of respondents who rely on web sites for information drops to 17%. The use of the Internet as a source for information appears limited, thus, its utility in outreach may be as well.

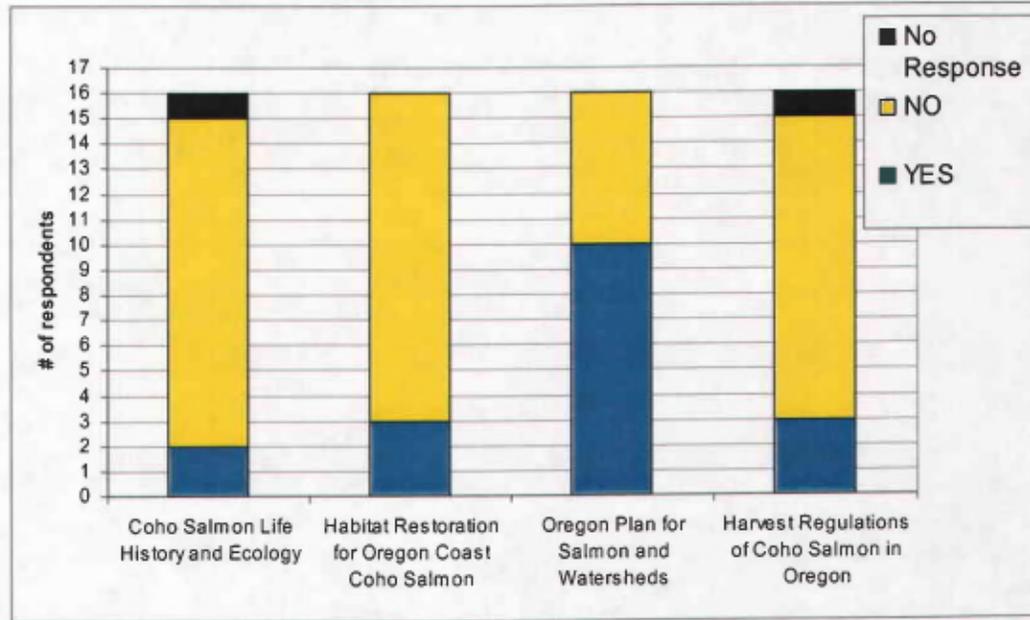


Figure 5. Response of watershed council coordinators as to their reliance on web sites for the four topics relating to Oregon Coast coho salmon. Web sites with information on the Oregon Plan for Salmon and Watersheds are used most often by the coordinators.

Informational Resources

For each of the four informational needs categories, the respondents were asked to indicate whether or not they relied on five types of informational resources. The resources given were: scientific books and journals, web sites, Oregon State University (OSU) Extension service, agency personnel within their watershed council, agency personnel outside their watershed council. To some degree, all categories were indicated as being a resource for information on coho salmon topics (Table 2). For coho salmon life history and ecology, the most commonly used resource is agency personnel within the watershed council (87%), followed by scientific books and journals and agency personnel outside their watershed council (67 % for both of these resources). OSU Extension is a resource used by 47% of the respondents while only 40% indicated that web sites are useful for information on coho salmon life history and ecology. A similar pattern of resource reliance is seen for information on habitat restoration for coho salmon. Ninety-four percent of the respondents use agency personnel within their watershed council. More than half use scientific books and

journals and agency personnel outside their watershed council (63% and 69% respectively). Fewer people rely on web sites and the OSU Extension service (33% for each resource). For information on the Oregon Plan, respondents appear to be using a wide range of resources. Agency personnel within the watershed appear to be the most commonly used resource (80%), but agency personnel outside the watershed and web sites follow closely behind with 73% of the respondents indicating they use these resources. A smaller percentage of the respondents use the OSU Extension service for this information (27%). For information regarding harvest regulations for Oregon Coast coho salmon, agency personnel, whether inside or outside the watershed council, are used most commonly by the respondents (58% and 50% respectively). Web sites are used by 25% of the respondents and only 17% use the OSU Extension for this information or find it in scientific books and journals.

	Coho Salmon Life History and Ecology	Habitat Restoration for Coho Salmon	The Oregon Plan for Salmon and Watersheds	Harvest Regulations for Oregon Coast Coho Salmon
Scientific books & journals	67% (10)	63% (10)	53% (8)	17% (2)
Web sites	40% (6)	33% (5)	73% (11)	25% (3)
Oregon State University Extension Service	47% (7)	33% (5)	27% (4)	17% (2)
Agency personnel <u>within</u> their watershed council	87% (13)	94% (15)	80% (12)	58% (7)
Agency personnel <u>outside</u> their watershed council	67% (10)	69% (11)	73% (11)	50% (6)

Table 2. The use of five different resources by watershed council coordinators for coho salmon information. Percentages given are of the proportion of coordinators who indicated they use the given resource. *Agency personnel within their watershed council* was the most popular resource noted by watershed council coordinators. Note: the numbers in parentheses () represent the number of respondents who indicated they use that resource.

If respondents indicated they used agency personnel, within and/or outside their watershed council, they were asked to specify the agency(s) (Table 3). For information on coho salmon life history and ecology, the Oregon Department of Fish and Wildlife (ODFW) was mentioned more times than any other agency (Figure 6). For information on habitat restoration for coho salmon, a wide variety of agencies were recognized: Bureau of Land Management (BLM), ODFW, Oregon Watershed Enhancement Board (OWEB), Soil and Water Conservation District (SWCD), and the United States Forest Service (USFS) (Figure 7). Coordinators mentioned the OWEB most frequently as their contact for information on the Oregon Plan (Figure 8). Again, the ODFW was indicated as the most contacted agency for information on harvest regulations (Figure 9). Overall, respondents mentioned the ODFW 49% of the time as the agency they contact for information on these topics. OWEB was most commonly mentioned after that (19%) followed by the BLM (12%) and the USFS (9%). All other agencies were mentioned less than 9% of the time (Figure 10).

Agencies mentioned as resources by watershed council coordinators	Where was the agency mentioned (key below)
Bureau of Land Management	B
Columbia River Estuary Study Task Force	W
Division of State Lands	O
Natural Resources Conservation Service	O
NOAA Fisheries	O
Oregon Department of Agriculture	O
Oregon Department of Environmental Quality	B
Oregon Department of Forestry	O
Oregon Department of Fish and Wildlife	B
Oregon State Police	O
Oregon State University	W
Oregon Water Resources Department	O
Oregon Watershed Enhancement Board	B
Pacific Fisheries Management Council	O
Soil and Water Conservation Districts	B
Tillamook Estuaries Partnership	O
United States Fish and Wildlife Service	B
United States Forest Service	B

Table 3. Agencies which are used by watershed council coordinator for information on coho salmon. All agencies that were mentioned by the coordinators for all four coho salmon topics are included. Each agency is identified with a B, O, or W, indicating where the coordinators are contact with the personnel. B = agency personnel within and outside the watershed council are used as resources; O = agency personnel outside the watershed council are used as resources; W = agency personnel within the watershed council are used as resources.

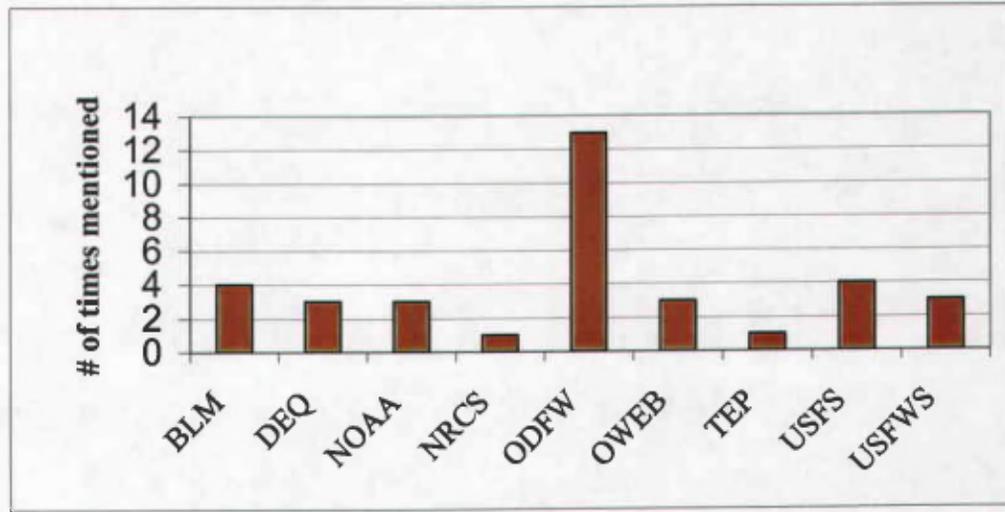


Figure 6. The agencies that watershed council coordinators indicated they use for information on **coho salmon life history and ecology**.

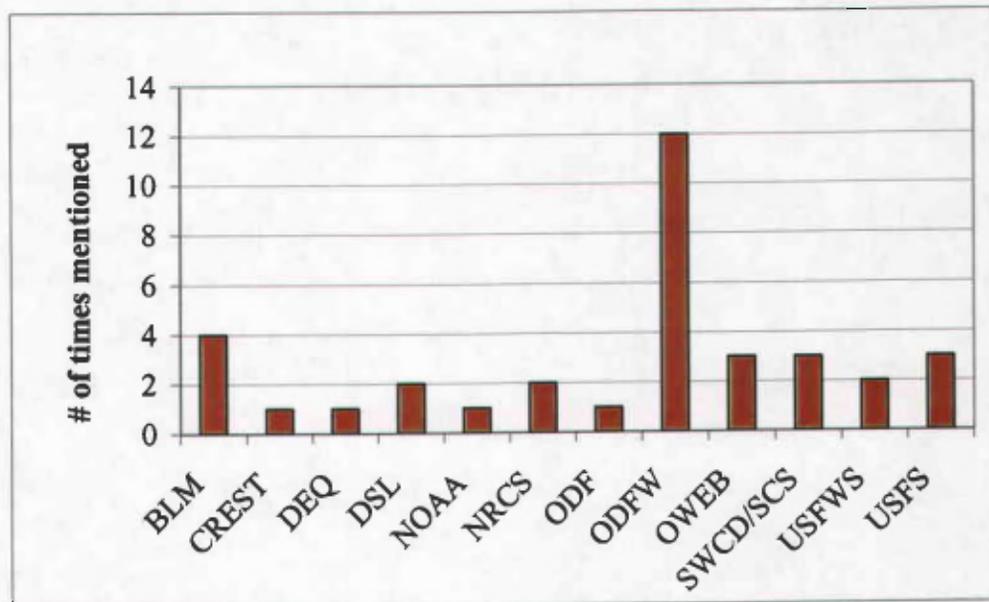


Figure 7. The agencies that watershed council coordinators indicated they use for information on **habitat restoration for coho salmon**.

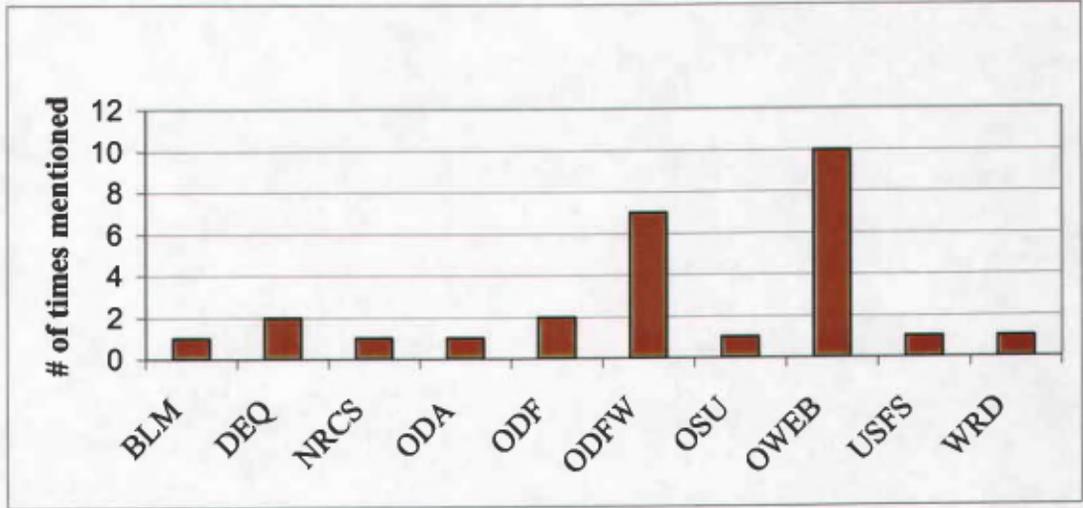


Figure 8. The agencies that watershed council coordinators indicated they use for information on the **Oregon Plan for Salmon and Watersheds**.

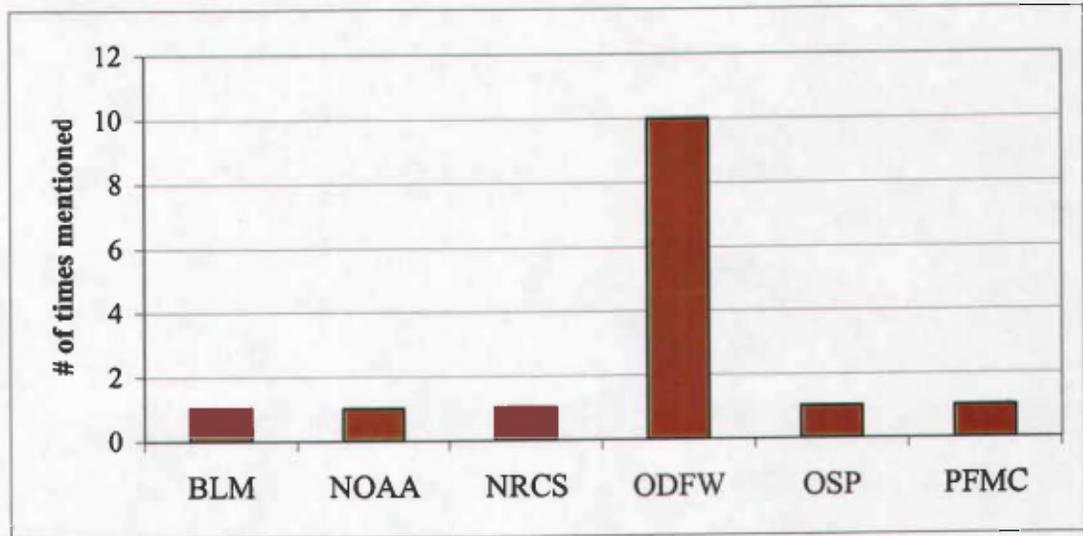


Figure 9. The agencies that watershed council coordinators indicated they use for information on **harvest regulation for coho salmon**.

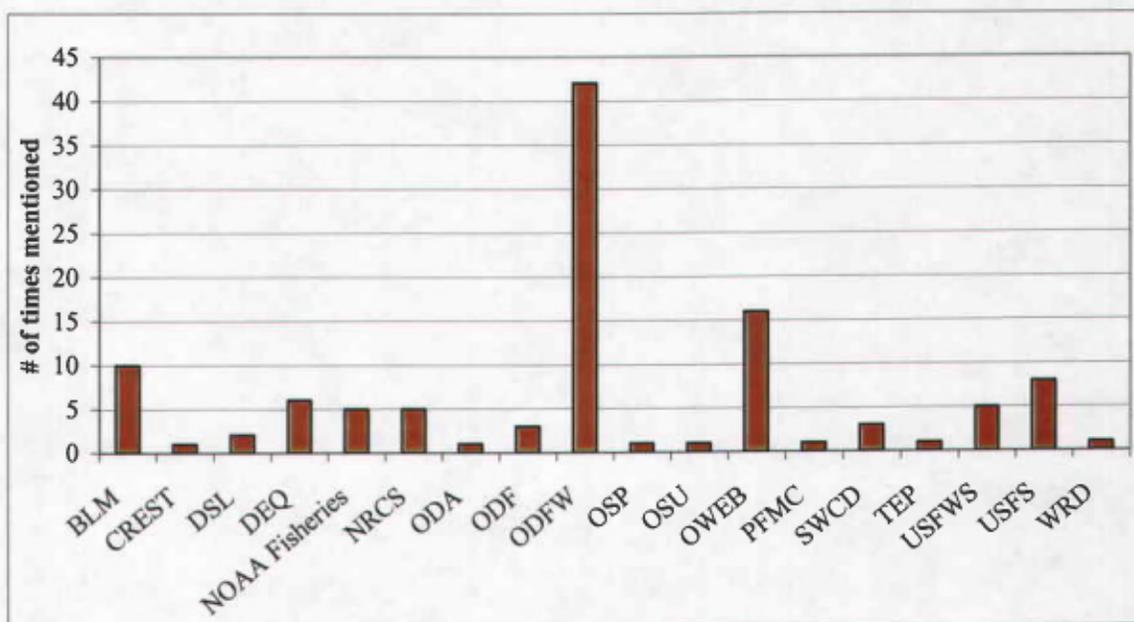


Figure 10. A summary of all the agencies that watershed council coordinators mentioned as resources for information on the four coho salmon topics.

In addition to the watershed council coordinators identifying the resources they use, they also ranked the five resources as to which ones they rely on most. The coordinators ranked the first, second, and third resources they rely on most of the five given in the needs assessment (scientific books and journals, web sites, OSU Extension, agency personnel within their watershed council, agency personnel outside their watershed council). Agency personnel within the watershed council are used most often by the coordinators (Table 4). For each of the four categories of information, they ranked as the most-used resource by the greatest number of respondents. Agency employees outside the watershed council were ranked second for all categories except coho salmon life history and ecology where they were third. Scientific books and journals were relied on secondarily for information on coho salmon life history and ecology. The third most-used resource varied between scientific books and journals and web sites in the categories of habitat restoration, Oregon Plan, and harvest regulations.

	Coho Salmon Life History and Ecology	Habitat Restoration for Coho Salmon	The Oregon Plan for Salmon and Watersheds	Harvest Regulations for Oregon Coast Coho Salmon
Rely on most	Agency employees <u>within</u> the watershed council			
Rely on second	Scientific books & journals	Agency employees <u>outside</u> the watershed council	Agency employees <u>outside</u> the watershed council	Agency employees <u>outside</u> the watershed council
Rely on third	Agency employees <u>outside</u> the watershed council	Scientific books & journals	Web sites	Web sites

Table 3. Ranking of resources by watershed councils. Agency employees within the watershed council were ranked as the most relied upon resource for obtaining information in every category.

Recovery Planning for the Threatened Oregon Coast Coho Salmon

Recovery planning outreach efforts need to be gauged for the audience the efforts are to serve. Eighty-one percent of the respondents consider themselves somewhat informed about recovery planning for the Oregon Coast coho salmon and 19% were completely uninformed (Figure 11). None of the respondents consider themselves adequately informed. Of the respondents who were aware of recovery planning, the majority (50%) learned about it from agency personnel within their watershed council. The agency personnel were from NOAA, OWEB, ODFW, Oregon State University, Soil and Water Conservation District, and the county commissioner’s office. The second most common resource coordinators first learned of the NOAA Fisheries recovery planning process was through the news media (25%). Thirteen percent of the respondents learned of these efforts from agency personnel outside their watershed council, specifically the NOAA and the OWEB. No respondent indicated that they had heard of recovery planning through web sites or OSU Extension. Regarding the

interest of the coordinators about NOAA Fisheries' recovery planning process for the Threatened Oregon Coast coho salmon, only one respondent was not interested in recovery planning. Twenty-five percent are somewhat interested, while the remaining 69% considered themselves very interested in the process (Figure 12).

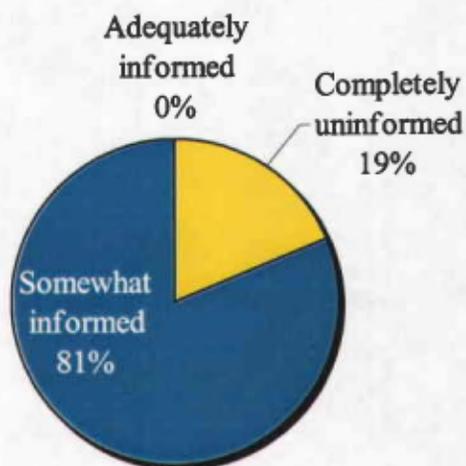


Figure 11. The coordinators response regarding their level of **information** about NOAA Fisheries recovery planning process for the Oregon Coast coho salmon.

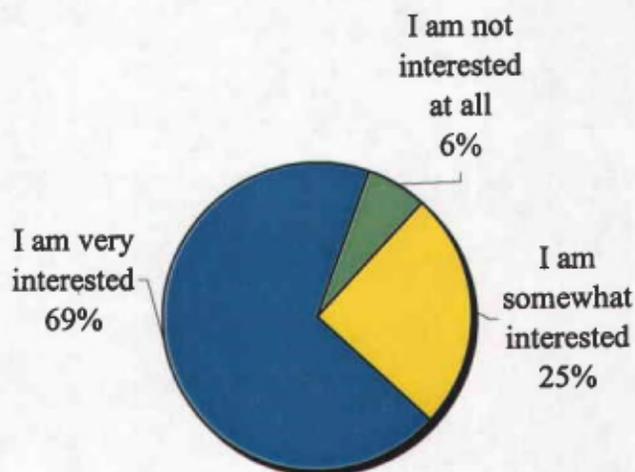


Figure 12. The coordinators response regarding their level of **interest** for the NOAA Fisheries recovery planning process for the Oregon Coast coho salmon.

Stakeholder Preferred Communication Mechanisms

Determining the communication mechanism preferred by watershed council coordinators can help to ensure they are being effectively notified of the recovery planning activities. Respondents indicated their interest in being notified of upcoming meetings, available meeting minutes, and available draft Technical Recovery Team documents. If they indicated they were interested in being notified, they were asked to rank their preferred communication methods from a list of options.

Eighty-eight percent of respondents are interested in being notified of upcoming meetings. Of those 88%, 86% would prefer to be notified via e-mail. Notification using a letter was second and the least preferred method was simply posting the upcoming meetings on a web site with no notification given to the coordinators (Figure 13).

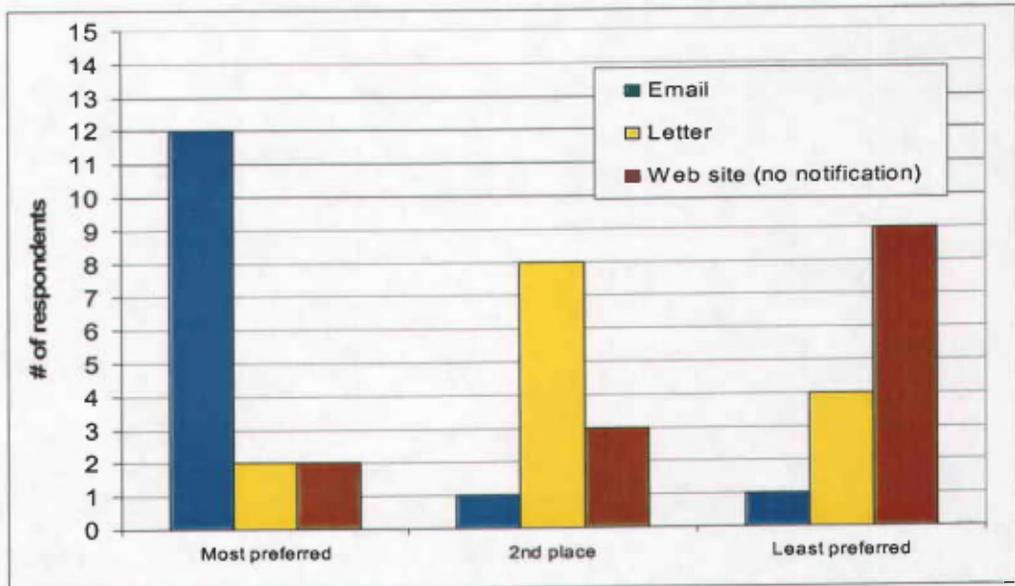


Figure 13. Ranking of the communication mechanisms for watershed council coordinators being notified of upcoming meetings. Twelve of the 14 respondents prefer to be notified via e-mail. Their least preferred method was posting the notice of an upcoming meeting on a web site with no personal notification.

Eighty-one percent of the respondents wish to be notified of the availability of Technical Recovery Team meeting minutes. E-mail was the most preferred method of notification, with 69% of the respondents indicating this option as their top choice. A newsletter, was second choice, a letter third choice, and no notification, only posting on a web site, is the least preferred method. No respondent ranked e-mail as the least preferred method (Figure 14).

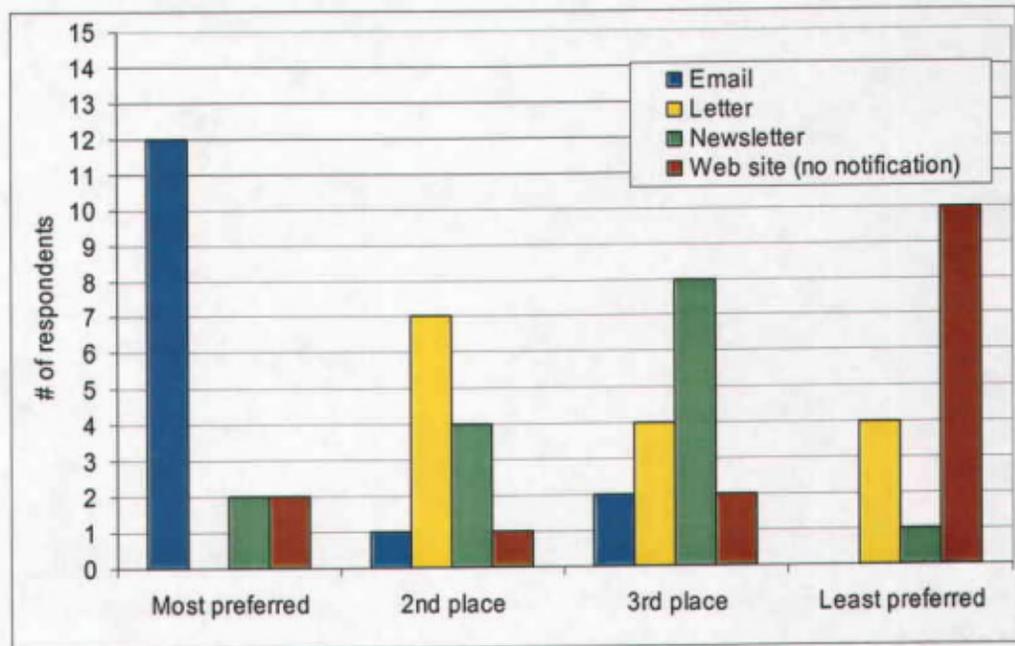


Figure 14. Ranking of the communication mechanisms for watershed council coordinators being notified of the availability of TRT meeting minutes. E-mail is the most preferred communication method. Three of the 13 respondents indicated that they would prefer no notification of the availability of meeting minutes, only posting on a web site would be necessary.

Ninety-four percent of the respondents would be interested in being informed when draft documents/reports from the Technical Recovery Team are available for review. E-mail was the preferred method of notification followed by a letter, newsletter and lastly no notification, only posting on a web site (Figure 15).

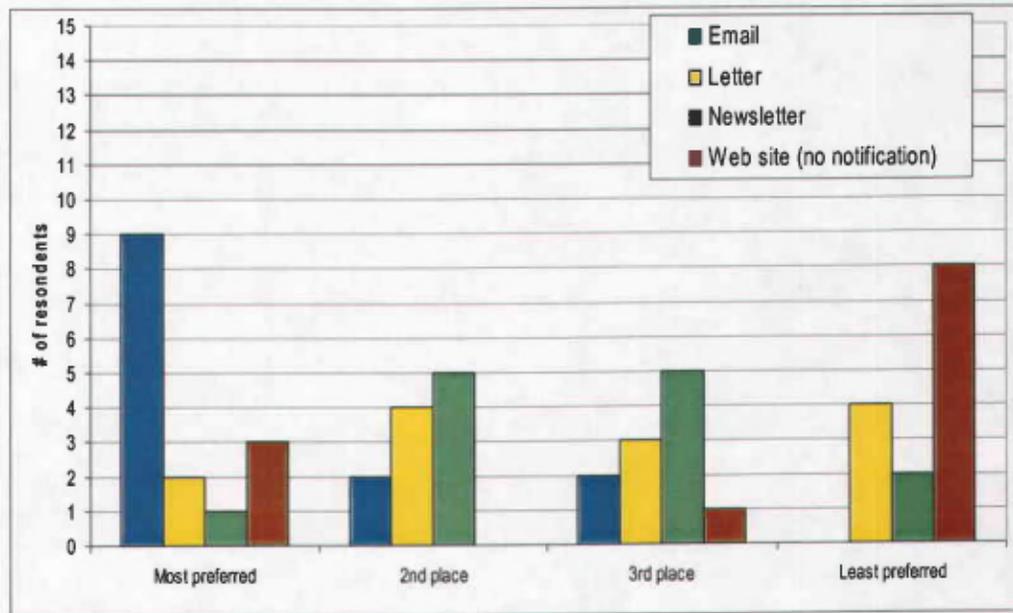


Figure 15. Ranking of the communication mechanisms for watershed council coordinators being notified of the availability of TRT draft documents/reports. Most watershed council coordinators prefer being notified by e-mail. Ten of the fifteen respondents indicated posting these documents/reports without notifying the coordinators would be the least preferred method.

In addition to being notified of these Technical Recovery Team activities, 87% of the watershed council coordinators would be interested in having a presentation given to their watershed council on the NOAA Fisheries’ recovery planning for the Threatened Oregon Coast coho salmon (Figure 16).

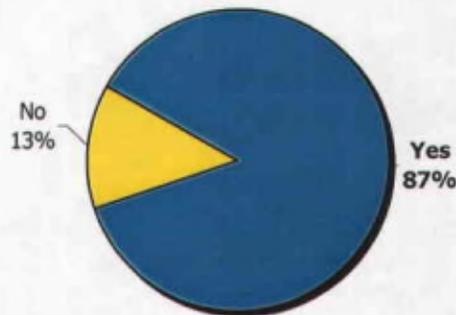


Figure 16. The coordinator’s interest in having a recovery planning presentation given to their watershed council.

Outreach Perspectives of the Technical Recovery Team

The members of the Technical Recovery Team represent varying stakeholder groups including state, federal, tribal, and private interests. All 15 members responded to a shortened questionnaire designed to compare and contrast the TRT members' responses to those of the watershed council coordinators.

The TRT members varied in their opinions of whether or not the watershed council coordinators need more information on the four coho salmon topics. The majority of the TRT members believe the coordinators need more information on coho salmon life history and ecology (73%) (Figure 17) and habitat restoration for Oregon Coast coho salmon (80%) (Figure 18) but they were more evenly split as to whether or not the coordinators need more information on the Oregon Plan (47%) (Figure 19) and the harvest regulations of coho salmon in Oregon (47%) (Figure 20). Overall, the majority of TRT members feel the coordinators need more information on topics relating to coho salmon (62%) (Figure 21).

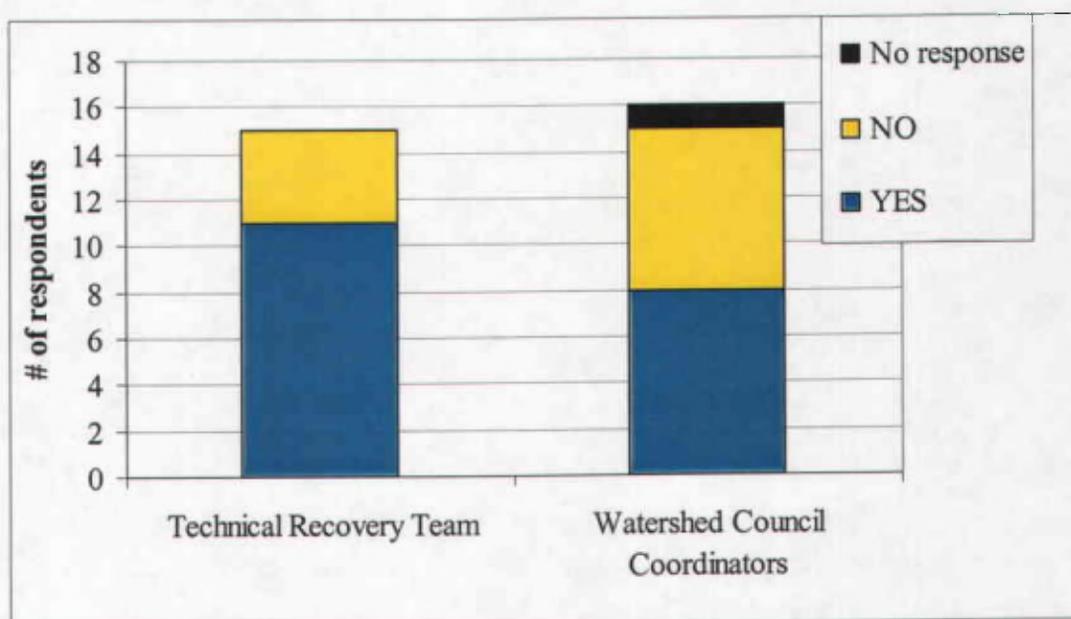


Figure 17. A comparison between the responses given by the Technical Recovery Team members and the watershed council coordinators as to coordinator's need for more information about coho salmon life history and ecology.

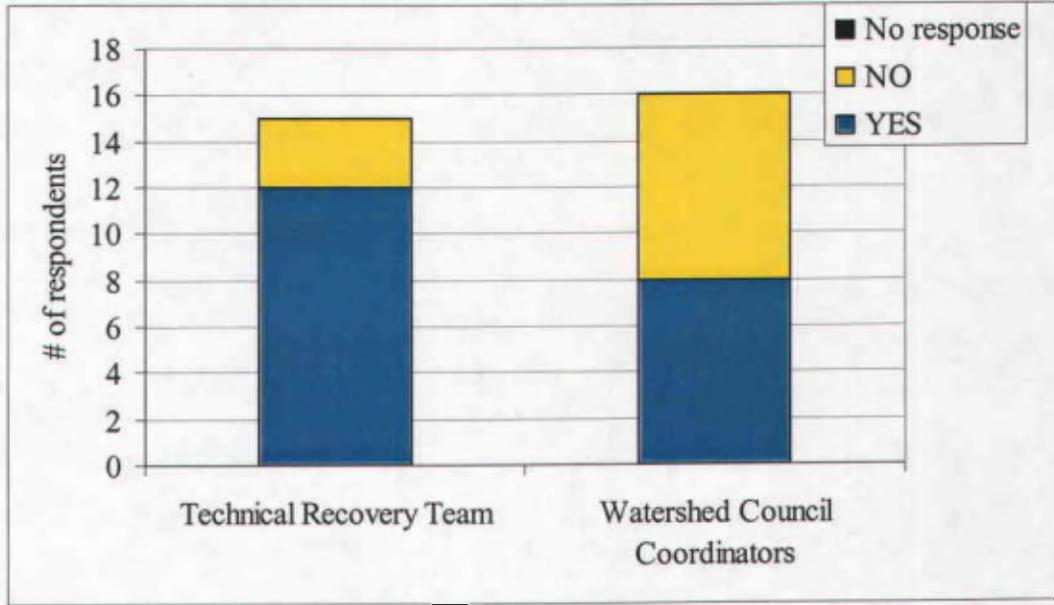


Figure 18. A comparison between the responses given by the Technical Recovery Team members and the watershed council coordinators as to coordinator's need for more information about **habitat restoration for coho salmon**.

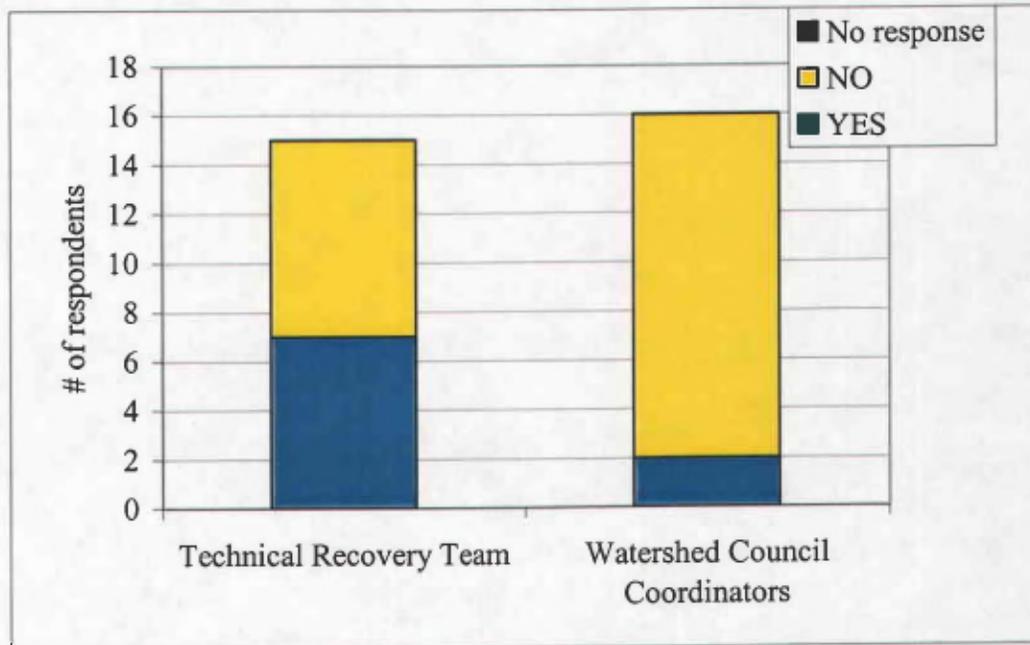


Figure 19. A comparison between the responses given by the Technical Recovery Team members and the watershed council coordinators as to coordinator's need for more information about **Oregon Plan for Salmon and Watersheds**.

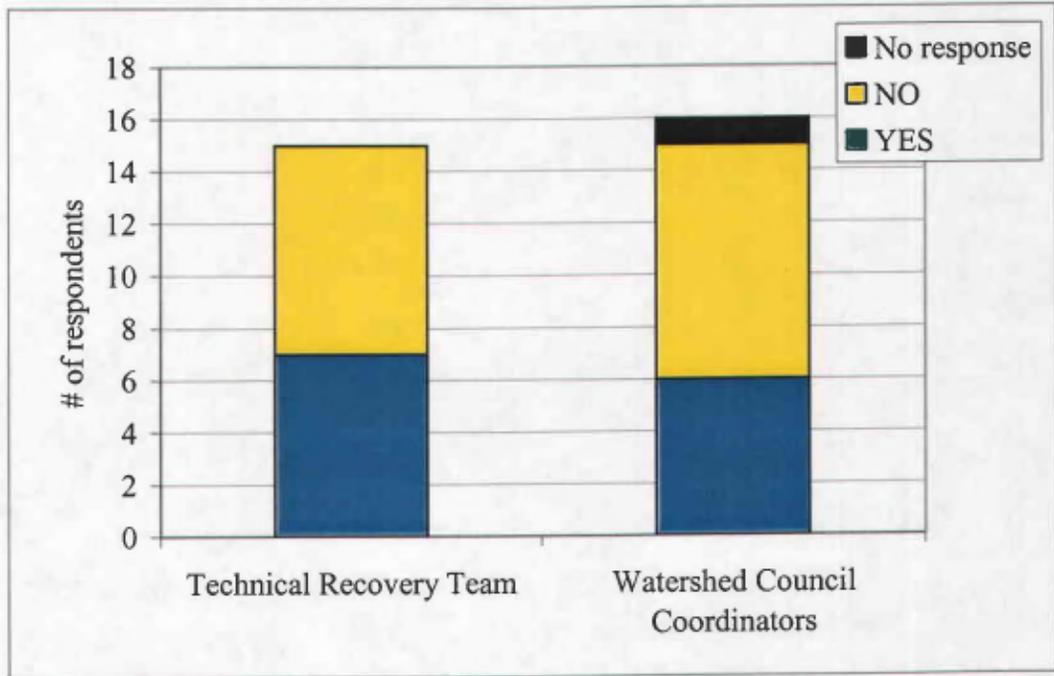


Figure 20. A comparison between the responses given by the Technical Recovery Team members and the watershed council coordinators as to coordinator’s need for more information about **harvest regulations for Oregon coast coho salmon**.

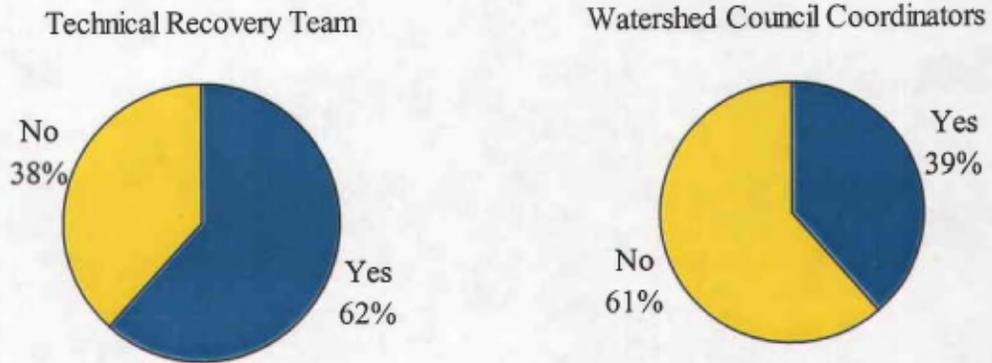


Figure 21. A comparison between the responses given by the Technical Recovery Team members and the watershed council coordinators as to the overall need for more information on the four coho salmon topics.

The TRT members ranked the five resources (scientific books and journals, web sites, OSU Extension, agency personnel within the watershed council, agency personnel outside the watershed council) for which ones they perceive are used most often by watershed council coordinators (Table 5). Agency personnel within the watershed council were ranked as the most widely used resource. Web sites and agency personnel outside the watershed council tied for second. OSU Extension was indicated to be the fourth most commonly used resource followed by scientific books and journals.

	Technical Recovery Team	Watershed Council Coordinators
Most commonly used resource	Agency personnel <u>within</u> the watershed council	Agency personnel <u>within</u> the watershed council
2nd most commonly used resource	Web sites and	Agency personnel <u>outside</u> the watershed council
3rd most commonly used resource	Agency personnel <u>outside</u> the watershed council	Scientific books and journals
4th most commonly used resource	OSU Extension	Web sites
Least used resource	Scientific books and journals	OSU Extension

Table 5. A comparison between the responses given by the Technical Recovery Team members and the watershed council coordinators as to which resources are used most commonly by watershed council coordinators for information on coho salmon topics.

The TRT members ranked the top four agencies that watershed council coordinators rely upon most from a list of eight given to them. The Oregon Department of Fish and Wildlife (ODFW) was indicated as the agency relied upon most by watershed council coordinators followed by Oregon Watershed Enhancement Board (OWEB), United States Forest Service (USFS), and lastly NOAA Fisheries (Table 6).

	Technical Recovery Team	Watershed Council Coordinators
Most commonly used agency	Oregon Department of Fisheries and Wildlife	Oregon Department of Fisheries and Wildlife
2nd most commonly used agency	Oregon Watershed Enhancement Board	Oregon Watershed Enhancement Board
3rd most commonly used agency	United States Forest Service	Bureau of Land Management
4th most commonly used agency	NOAA Fisheries	United States Forest Service

Table 6. A comparison between the responses given by the Technical Recovery Team members and the watershed council coordinators as to which agencies are used most commonly by watershed council coordinators for information on coho salmon topics.

The TRT members indicated the coordinators would prefer a varying range of notification methods depending upon the issue. For upcoming meetings, 74% of the TRT members indicated e-mail would be the preferred method of communication by watershed council coordinators (Table 7). Thirteen percent of the members indicated a letter or web site would be the coordinators preferred means of being informed about future meetings. For the availability of meeting minutes, 54% of the TRT members indicated e-mail would be the coordinator's preferred method of communication. Thirty-three percent of the TRT members believe the coordinators would prefer no notification while 13% thought a newsletter would be most preferred. For being notified of the availability of TRT draft documents or reports, 40% of TRT members believe the coordinators would prefer to be notified by e-mail while another 40% of the members thought the coordinators would wish to have no notification of the documents availability. Twenty percent of the members believe a newsletter would be the preferred communication method by coordinators.

Notification of upcoming Technical Recovery Team meetings		
	Technical Recovery Team	Watershed Council Coordinators
E-mail	74%	80%
Letter	13%	13%
Posting on a web site, no notification	13%	13%
Notification of the availability of meeting minutes		
	Technical Recovery Team	Watershed Council Coordinators
E-mail	54%	60%
Letter	0%	13%
Newsletter	13%	7%
Posting on a web site, no notification	33%	20%
Notification of the availability of Technical Recovery Team draft documents/reports		
	Technical Recovery Team	Watershed Council Coordinators
E-mail	40%	75%
Letter	0%	0%
Newsletter	20%	13%
Posting on a web site, no notification	40%	13%

Table 7. A comparison between the responses of the Technical Recovery Team members and the watershed council coordinators as to the most preferred method by watershed council coordinators for communicating with them about upcoming meetings, the availability of meeting minutes, and the availability of Technical Recovery Team draft documents/reports. The percentages represent the proportion of responses that indicated a particular method as the most preferred choice.

DISCUSSION

Outreach techniques vary greatly depending upon a myriad of social, political and economic factors; however, opinions on the importance of initiating a productive outreach program for effective public participation do not. In the toolbox of public outreach efforts, a needs assessment can serve a key role in engaging the public in natural resource management. The needs assessment used in this case study achieved three goals that will contribute to the success of recovery planning. First, the needs assessment served as an additional outreach mechanism to increase the awareness of the recovery planning process. Secondly, the assessment provided specific recommendations to NOAA Fisheries' personnel about the informational needs, resource usage, and communication preferences of selected stakeholders in order for the agency to best serve and engage the interest group of Oregon coastal watershed council coordinators. Third, the needs assessment was a mechanism that opened up communication pathways between the agency and the stakeholder.

Informational Needs

Information is the basis for making educated decisions on any topic. The needs assessment queried the watershed council coordinators about their need for more information on coho salmon topics that represent a range of issues addressed in recovery planning. By local watershed liaisons having a firm grasp on the topics of coho salmon life history and ecology, habitat restoration, the Oregon Plan, and harvest regulations, they can contribute constructively to the complex recovery planning process as well as share their knowledge with local citizens. The watershed council coordinators were almost evenly split as to their need for information on three of the four coho salmon informational categories. Examining each category closer may help to discern why half of the coordinators need more information and the other half of them do not. Although, understanding the precise reasoning behind their responses would require more in-depth investigation, time did not allow for it in this study.

Superficially examining each of the four coho salmon categories provides preliminary insight for the reasoning behind the coordinator's informational needs. The categories of coho salmon life history and ecology and habitat restoration for

Oregon Coast coho salmon are both scientifically founded areas of interest. The coordinator's educational background, training, and/or length of time they have been involved in the watershed council may affect their knowledge in these areas. In one way or another, half of the coordinators are filling their informational needs by either immediate sources (web sites, agency personnel, workshops etc) or from their educational background, because all of the respondents who answered they did not need more information on these topics indicated their reasoning to be they "had enough information on the topic."

The 14 respondents who indicated they did not need more information on the Oregon Plan also cited the reasoning being they had enough information on this topic. However, the motivation behind this answer may be different. The Oregon Plan is one of the most publicized programs for maintaining healthy watersheds in Oregon and a large majority of the watershed councils rely on funding that was initiated by the enactment of the Oregon Plan. Thus, the coordinators are very familiar with its goals, objectives, and processes. This wealth of information may lead to lack of interest demonstrated by the coordinators for more information on the Oregon Plan.

Even though the coordinators were almost evenly split as to their need for information on harvest regulations for Oregon Coast coho salmon, their reasoning behind their answer distinguished this response from the others. This category of harvest regulations was the only one that solicited responses from the coordinators indicating they did not need more information because they were not interested in the topic. The coordinator's lack of interest could be attributed to the fact that the wild coho salmon fishery within the state of Oregon has been closed since 1994. A few coordinators did not feel this was an informational need but if and when the wild coho salmon fishery becomes reinstated, information on harvest regulations may become a greater need.

The informational needs expressed by these 16 coordinators in the needs assessment may remain relatively consistent over time. The current composition of council coordinators along the Oregon Coast is extremely varied with regard to their educational background and exposure to coho salmon issues. This range of interests and experience among the coordinators is apparent from half of them needing more

information and the other half feeling they have enough information. As a whole, it is not likely the dynamics of this group of council coordinators within the Oregon Coast ESU will change because the position of being a watershed council coordinator attracts an eclectic and diverse applicant pool.

Because approximately 50% of the coordinators need more information on three out of the four coho salmon topics, it was worthwhile to examine the avenues by which they prefer to receive information. The coordinators indicated a similar mechanism for sharing the needed information on all four topics. The main idea stressed by the respondents was to present the needed information in some form of a workshop, training, or presentation. Human-to-human contact was requested as that allows for a question and answer period, direct observation of techniques, and for a larger portion of the community to participate. In addition to workshops, trainings, and presentations, the coordinators mentioned the Internet in one form or another. Tying a web site to the information presented at a training or workshop allows for the attendee to review the topics presented as well as share the information learned at the workshop with others. Information regarding the three topics of coho salmon life history and ecology, habitat restoration, and harvest regulations would be communicated most effectively if provided in the manner of a workshop or training along with an informational web site the attendees could refer to.

The way in which watershed council coordinators answered many of these questions, specifically the manner in which they would prefer to receive needed information, is indicative of their lifestyle. All of the watershed council coordinators I spoke with during this study are extremely busy trying to manage a myriad of tasks to maintain a productive council. Many of them are volunteer coordinators who rely on another job for economic stability. Their many duties do not accommodate time to be searching the Internet for information, evaluating the validity of the source of the information, and discerning if it is the most recent information available. Coordinators would prefer to have people in the specified field provide them, and others, with the critical pieces of information. Person-to-person contact is the strength of most outreach programs. This appears it should be no different here.

Utility of a Web Site to Fulfill Informational Needs

The utility of a web site to convey information to watershed council coordinators regarding coho salmon topics can be limiting if the web site is not constructed to attract and retain their attention. Ninety-four percent of the coordinators use the Internet to gather information on natural resources, which indicates web sites are one approach to sharing information with these stakeholders. However, when the coordinators were asked if they rely on web sites to obtain information for each of the specific coho salmon topics there was an overwhelmingly negative response of a reliance on web sites (71%). Examining the characteristics of each category may shed light on the utility of web sites and may help to explain the respondents non-affinity for web sites.

The two informational categories of coho salmon life history and ecology and habitat restoration solicited the greatest non-reliance on web sites for information by the coordinators. Both of these topics, coho salmon life history and habitat restoration, are fundamentally founded in science and, in the case of the habitat restoration, is very hands on. The science used to substantiate findings in both of these areas is certainly evolving. For coho salmon, their general life history is well described but the understanding of the fishes' temporal and spatial relationship with the habitat is an active field of research (Miller & Sadro, 2003). The science regarding habitat restoration has changed over the years and will continue to do so as research continues. Due to the changing nature of both of these fields, coordinators may feel that when new developments occur, they are less likely to learn of them from web sites. Newly published literature with advanced thinking can be difficult to locate and verify the literature's validity on the Internet. Respondents may feel more comfortable to rely on agency personnel within the watershed council or whom they personally know for this type of information.

The same reasons given for coho salmon life history and ecology and habitat restoration may apply to the lack of reliance on web sites for information on harvest regulations of coho salmon in Oregon. Information on harvest regulations is not so much an evolving science, but harvest quotas do change annually. Coordinators may have a difficult time keeping up with changing regulations on the Internet. An e-mail

notification leading the coordinator to a web site with concise, timely information may be of highest utility because of the coordinators expressed preference of having web sites tied to pertinent information.

The watershed council coordinators rely much more heavily upon web sites for information on the Oregon Plan than any other category (60%). Because this is a management/policy-based issue, they may feel that there is one agency responsible for changes which may affect them, therefore, reliance upon a single web site will provide the needed information. The Oregon Plan web site may fulfill this need. Although, it is interesting to note that the Oregon Plan web site has not been updated since 2001. This did not seem to bother the coordinators because all of the coordinators indicated they used the web site of the agency who plays a large role in implementing the Oregon Plan, the Oregon Watershed Enhancement Board (OWEB), instead of the Oregon Plan web site itself. The coordinators noted that they had limited time outside of fieldwork; therefore, using their time to access OWEB's web site for gathering this information is sufficient.

The way in which watershed council coordinators use the Internet for information on the Oregon Plan may provide insight as to how to increase the usefulness of web sites for this stakeholder group. From their response, it appears that the coordinators do not spend time searching the Internet for information but most likely rely on web sites that they know about and trust. Continuously updating a web site enhances the attractiveness of that site and encourages users to return.

Resources

In addition to learning if the watershed council coordinators need information on coho salmon, understanding where they receive their information is very important to conducting an efficient outreach program. The majority of watershed council coordinators use agency personnel, either within or outside their watershed council, as their primary source of information. By understanding the primary resources used by stakeholders for gathering information, an outreach program can direct their efforts towards the resources that will be of highest utility. From the results of the needs assessment, educating and informing a resource such as the OSU Extension service on recovery planning would not be as effective as contacting agency personnel at ODFW.

If the goal of outreach is to increase awareness of the issue, then targeting groups which supply information to these watershed councils will achieve this goal (White 1998). This is not to say that such a resource as the OSU Extension service should not be informed and educated about recovery planning, but in a day and age when resources are being funneled to other more pressing political and social causes outside natural resources, priorities must be set that maximize efficiency. Web sites, again, appear to be most commonly used for management-type information, which may work well for NOAA Fisheries' recovery planning web site. A web site may be useful as a means of outreach if it can be established as a relevant web site that is continually updated with new information. Scientific books and journals appear to also be a popular information resource on coho salmon life history and ecology, and habitat restoration. This need can be serviced by putting lists and/or links to research articles and books on the web site.

Communication Mechanisms

Watershed council coordinators are aware that the Oregon Coast coho salmon is listed as Threatened on the Endangered Species Act and that recovery planning is underway, but it is the job of outreach by NOAA Fisheries to ensure they are adequately informed citizens about the process. The respondents expressed a significant interest in being informed of upcoming meetings, availability of meeting minutes, and the release of draft documents/reports. This response was not unexpected because implementation of the recovery plan will occur in their watersheds, yet, gaining awareness as to how the coordinators want to be communicated with informs the outreach process significantly.

The watershed council coordinators chose from various types of communication mechanisms, but e-mail was consistently the preferred choice. With e-mail being the preferred communication mechanism by stakeholders, it was not surprising that posting information on the web site, with no notification, was least preferred in every category (notification of upcoming meetings, notification of available meeting minutes, notification of available draft documents/reports). These responses lend to a comment that a coordinator expressed concerning communication. "We don't hear anything from NOAA Fisheries for long periods of time and then they

come out of the closet and notify us about something they have been working on all along. That is very unnerving.” Coordinators, among other interested parties, want to be kept in the informational loop. They want to be updated and aware of what is going on, even if they may not be actively participating at the time. Outreach personnel can carefully foster the relationship between the stakeholders and the agency by keeping these pathways of communication open. Actions such as these may lead to greater trust between the stakeholders and the federal government.

Perception of Needs

The perception of needs can be very different from the actual needs of the stakeholder group, but this was not necessarily the situation in the study. If the outreach plan was going to be based on the answers given by the TRT members’, the plan would have been slightly off-course. The TRT members’ believed strongly the coordinators would need more information on coho salmon life history and ecology and habitat restoration while the coordinators themselves were not as unified. The coordinator’s indecisiveness as a whole speaks toward their diverse backgrounds and is a piece of information that should not be underestimated. The TRT members did not share a common perception of the coordinators information needs on the Oregon Plan, whereas, the coordinators expressed an almost unanimous feeling. Again, evaluating the informational needs of the coordinators to all four sections provided insight into what type of needs they have.

The TRT members correctly perceived the two most commonly used resources by watershed council coordinators to be agency personnel within and outside the watershed council; however, the similarities end there. The coordinators use scientific books and journals as their third most commonly used resource whereas the TRT members underestimated the use of this resource and ranked it last. The coordinators least-used resource was the OSU Extension. The perceived and actual reliance on web sites is an interesting finding that would not have surfaced without this comparison. The TRT members ranked this resource as tied for second while the watershed council coordinators indicated the Internet to be their fourth most-used resource. A false reliance could have been placed on the ability to communicate recovery planning information through the NOAA Fisheries’ web site.

Inquiring about the agencies that TRT members perceive watershed council coordinators to rely on for coho salmon information shed light on perhaps a common misconception among stakeholders about NOAA Fisheries. The TRT members and the watershed council coordinators ranked agency personnel from the Oregon Department of Fish and Wildlife as the most-used resource. The other three agencies the TRT members ranked in order were Oregon Watershed Enhancement Board, United States Forest Service, and NOAA Fisheries. The only discrepancy in this list and the coordinator's list was the exclusion of BLM and the inclusion of NOAA Fisheries by the TRT members. It appears that the perception and reality of reliance on NOAA Fisheries for coho salmon information is not correct. Even though the Oregon Coast coho salmon have been listed on the ESA since August 1998, NOAA Fisheries personnel are not being used as a resource for this information. Therefore, without a change in outreach by NOAA Fisheries, NOAA Fisheries may continue to be unappreciated and unrecognized for their work.

Recognizing the communication needs of the watershed council coordinators can lead to effective transmittal of key information. The TRT members' perceived correctly that the coordinators would wish to be notified by way of e-mail of upcoming meetings and the availability of meeting minutes on the web site. The most interesting difference between the two groups' answers was with regard to the availability of TRT draft documents and reports. The coordinators indicated strongly (80%) that they wanted to be sent an e-mail message when these documents were available while only 13% preferred no notification. The TRT members were split as to whether e-mail or no notification would be the most preferred option (40% for each category). The production of such a draft document and the potential for review and comment appears to be most important from a watershed council coordinators perspective whereas it is less important from the view of a TRT member.

The ability to compare and contrast the needs of the coordinators with the TRT members was an invaluable piece of information that may not be capable in every such study. The TRT perceived some of the coordinator's needs correctly but they did not replicate their answers completely. The coordinator's answers provided some insight to the motivation behind their needs which would have been unattainable by

only surveying the TRT. Even the TRT responses provided insight as to how they believe themselves, coho salmon information, and communication preferences is perceived or preferred by the stakeholders.

CONCLUSIONS AND RECOMMENDATIONS

Outreach activities are diverse from one institution to another; thus, the array of tools incorporated by outreach coordinators is vast. Each outreach plan is situation specific due to the complexity of natural resource issues. However, general tools and concepts may apply to each public participation process with tailoring of those concepts and ideas to fit the needs of the social, political, and economic climate of the locale. The needs assessment is an example of a pliable tool that can be customized to serve outreach programs in state, local, non-governmental, and non-profit public participation programs. Needs assessments are versatile, easily formulated, and are a mechanism to foster a communication pathway with stakeholders. They are one tool that can be tailored to fit into the toolbox of most outreach personnel.

Incorporating a needs assessment into the initial stages of an outreach plan will serve three purposes for advancing the goals of the citizen involvement program. First, it provides a formal mechanism of informing the interested public of the natural resource issue at hand. Secondly, it has the potential to open the communication pathway between the public and the agency. It is inherent in the act of requesting information from a group that contact between the surveyor and the subject may occur. In conducting this needs assessment, I spoke with several of the coordinators about the recovery planning process. I answered their questions and heard their concerns. This dialogue, whether it is over the phone or through e-mail, opens the channels of communication and contributes to the potential of constructive conservation efforts in the future. Thirdly, the entity conducting the needs assessment has the opportunity to gather necessary information that will help to serve the stakeholders, and the community, more efficiently and effectively. All of these attributes of a needs assessment contribute to creating a successful public participation program.

From conducting this needs assessment, the following four recommendations surfaced that can positively impact the outreach program of NOAA Fisheries as well as inform other outreach programs whether within the realm of recovery planning or in other natural resource management settings:

1. *Information.* The coordinators expressed a mixed need for more information on three of the coho salmon topics. Even though there was not a clear unified message from the coordinators on a need for more information, at least half of them would be well-served by NOAA Fisheries providing more information on coho salmon life history and ecology, habitat restoration, and harvest regulations. Since NOAA Fisheries personnel are not seen as a source for this type of information, it would be beneficial for the agency to attempt to have federal agency personnel lead workshops or trainings on these topics. If this option is not feasible, having NOAA Fisheries' personnel work with state, local, or other individuals to hold trainings would meet the identified needs.

2. *Web site.* The utility of a web site varies significantly depending upon a range of factors specific to each public participation program; examining these factors is necessary to ensure that the web site is serving the purpose it is intended for. In this technologically advanced era, it may be easy to over-emphasize the use of the Internet; thus, a critical look at the constituents the web site is intended to serve and the capabilities of meeting those needs will benefit the outreach program. Information regarding the coordinators use of the Internet and web sites was obtained by way of the needs assessment to inform the dependence and expected usage of the NOAA Fisheries' recovery planning web site for Oregon Coast coho salmon information. A web site is only as good as the number of people who know about it and visit it. This is especially true when trying to reach a stakeholder group, such as watershed council coordinators, who have very limited time and resources to be surfing the Internet. The respondents indicated that they return to web sites they are familiar with, consider reliable, and can benefit directly from the site. NOAA Fisheries needs to continue advertising the recovery planning web site for Oregon Coast coho salmon in order for the widest range of people to have access to it. However, the second step is to make the web site as attractive as possible to keep interested stakeholders returning to it.

The answers given by the coordinators indicated two mechanisms that will accomplish this. First, for the coordinators who would like more information on coho salmon life history and ecology, habitat restoration, and harvest regulations, links to web sites and books could be incorporated into NOAA Fisheries' existing web site. Secondly, it would be beneficial to provide links on NOAA Fisheries' web site for funding sources for watershed councils. The watershed council coordinators rely on grant funding to conduct business and 33% of the respondents chose to write-in that they use the Internet to gather this type of information. If this option would have been given in the needs assessment, I imagine the percentage would have been greater. Updating the NOAA Fisheries' web site with this type of information may increase the number of coordinators referring to the web site and in the process, become more educated and active participants in the recovery planning process.

3. Resources. Gathering information about which resources the stakeholder group relies on most provides a clearer picture as to where to focus time and energy on outreach and education for recovery planning. Agency employees within and outside the watershed council were repeatedly ranked as the top two resources watershed council coordinators rely on for information in all four of the coho salmon topics. It is likely that this reliance probably extends beyond the four categories inquired about in this needs assessment and could be applicable to any range of information the coordinators are interested in. Watershed council coordinators rely heavily on the Oregon Department of Fish and Wildlife (ODFW) for a whole host of information, as do probably many other stakeholders interested in Oregon Coast coho salmon recovery planning. To disseminate information most effectively and to the greatest audience interested in recovery planning, it would be advantageous to conduct outreach to agency personnel with ODFW, Bureau of Land Management, Oregon Watershed Enhancement Board, and the United States Forest Service.

4. Communication. In a public participation process, communicating to interested stakeholders about current events and upcoming involvement opportunities requires reaching them in the most effective form possible. The coordinators clearly stated this mechanism of communication as being e-mail. Because they are primarily out in the field conducting projects or meeting with stakeholders, they spend limited

time in the office and in front of a computer. They do not spend their time searching the Internet for updates or checking a web site periodically to see if the latest meeting minutes were posted. To serve this stakeholder group best, it would be of minimal cost and minimal staff time to create an email list-serve for notification of, at minimum, upcoming meetings, meeting minutes, and the release of draft documents. One step further would be to e-mail the respondents a quarterly newsletter that would provide a synopsis of the meetings and the activities taking place with regards to recovery planning. Another alternative to reach this stakeholder group would be to choose an independent newsletter(s) that is popular among watershed council coordinators and submit articles on a periodic basis with the latest updates on recovery planning.

Future research may use this assessment of watershed council coordinators to address the link between outreach mechanism, effectiveness, and overall success of the public participation process. In the case of the needs assessment, it would be advantageous to determine if by addressing the needs of the stakeholders, does public participation in the recovery planning process increase. Investigating this question may lead to streamlining outreach procedures in order for the most effective and efficient mechanisms to be implemented.

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APPENDIX A
COVER LETTER FOR NEEDS ASSESSMENT

July 1, 2003

Dear _____,

I am a graduate student at Oregon State University conducting research on how federal agencies conduct outreach to inform and engage the public in natural resource issues. I am focusing my attention on the National Marine Fisheries Service (NOAA Fisheries) because they are in the beginning stages of recovery planning for the threatened Oregon coast coho salmon (for more information please refer to NOAA Fisheries' salmon recovery planning website at <http://www.nwfsc.noaa.gov/trt/index.html>).

Because watershed councils are a conduit for information to local citizens, I am conducting this needs assessment of coastal watershed council coordinators to provide recommendations to NOAA Fisheries on how to structure their outreach and educational efforts so they are of greatest utility for the public.

The goals of this needs assessment are:

- 1) To assess the informational needs of council coordinators on topics related to coho salmon
- 2) To assess the resources council coordinators use to gather information regarding coho salmon
- 3) To understand how council coordinators wish to receive information about the recovery planning process

NOAA Fisheries' recovery planning website will be updated based on the response to this assessment. In addition, each council coordinator will receive a follow-up summary of the results of this assessment.

This survey is voluntary and you may skip any question you prefer not to answer. Only a small group of watershed council coordinators will receive this needs assessment, so your participation is vital to the study. Your answers will be kept confidential to the extent permitted by law. Your needs assessment will be destroyed once your responses have been recorded. There are no foreseeable risks to you as a participant in this project; nor are there any direct benefits. If you have any questions or comments about this study, please don't hesitate to get in contact with me or the principal investigator of this study, Robert Frenkel (541-737-1207). If you have questions about your rights as a research participant, please contact the Oregon State University Institutional Review Board (IRB) Human Protection Administrator at 541-737-3437 or IRB@oregonstate.edu.

I greatly appreciate your willingness to participate in this effort. Your response will help NOAA Fisheries to improve their communication with council coordinators and council members. I estimate it will take approximately 20 minutes to complete this needs assessment. Please send your completed assessment in the stamped envelope provided.

Thank you for your help. I appreciate your cooperation.

Bridgette A. Lohrman
Candidate, M.S. Marine Resource Management
College of Oceanic & Atmospheric Sciences
Oregon State University
blohrman@coas.oregonstate.edu

APPENDIX B
NEEDS ASSESSMENT

Recovery Planning for the Threatened Oregon Coast Coho Salmon



Assessing the Informational Needs of Oregon Coastal Watershed Councils

Please return your completed survey to:

Bridgette Lohrman
Oregon State University
College of Oceanic & Atmospheric Sciences
104 Ocean Admin Bldg
Corvallis, OR 97331

(541) 867-0424

General Background Questions

Q1. What is your position in the watershed council?

Q2. What percentage of your council's current projects affect habitat improvement for coastal coho salmon? *(Please circle one number)*

- 1 ZERO TO 25%
- 2 26 TO 50%
- 3 51 TO 75%
- 4 76 TO 100%

Q3. Of the following options, which most closely describes the main reason why your council decided to conduct coho salmon restoration activities? *(Please circle one number)*

- 1 FUNDING AVAILABILITY
- 2 YOUR WATERSHED COUNCIL'S INTEREST ON THREATENED COHO SALMON
- 3 LAWS AND REGULATIONS
- 4 OREGON PLAN FOR SALMON AND WATERSHEDS EMPHASIS
- 5 OTHER (Please describe _____)

Q4. What do you use the Internet for? *(Please circle all that apply)*

- 1 COMMUNICATION (I.E. E-MAIL)
- 2 GATHERING INFORMATION RELATING TO NATURAL RESOURCE ISSUES
- 3 OTHER (Please describe _____)

→ Q4A. If you use the Internet to gather information relating to natural resource issues, how frequently are you searching the Internet?
(Please circle one number)

- 1 LESS THAN ONCE A MONTH
- 2 ONCE PER WEEK
- 3 2-3 TIMES PER WEEK
- 4 MORE THAN 3 TIMES PER WEEK

Thank you for answering this section. Please continue on to the next section.

Coho Salmon Life History and Ecology Questions

Q5. Do you feel you need more information on coho salmon life history and ecology?

- 1 NO
- 2 YES

→ **Q5A. If no, what is the reason you do not feel you need information on this topic?**
(Please circle one number)

- 1 I HAVE ENOUGH INFORMATION ON THIS TOPIC
- 2 I AM NOT INTERESTED IN THIS TOPIC
- 3 OTHER (Please describe) _____

→ **Q5B. If yes, how would you prefer to receive that information? (Via websites on the Internet, trainings, workshops, etc) Please describe.**

Q6. Do you rely on websites to obtain information about coho salmon life history and ecology?

- 1 NO
- 2 YES

→ **Q6A. If yes, please list the names of the 3 websites you visit most often for information about coho salmon life history and ecology?**

1) _____

2) _____

3) _____

Q7. Please indicate whether or not you rely on each of the following resources for information about **coho salmon life history and ecology**? (Please circle one number for each category)

	YES	NO
a. SCIENTIFIC BOOKS AND JOURNALS.....	1	2
b. WEBSITES	1	2
c. OSU EXTENSION.....	1	2
d. AGENCY EMPLOYEES <i>WITHIN</i> YOUR WATERSHED COUNCIL (PLEASE SPECIFY AGENCY _____).....	1	2
e. AGENCY EMPLOYEES <i>OUTSIDE</i> YOUR WATERSHED COUNCIL (PLEASE SPECIFY AGENCY _____).....	1	2

Q8. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about **coho salmon life history and ecology**. (Please write appropriate letter from question 7 on each line)

- _____ RESOURCE I RELY ON MOST
- _____ RESOURCE I RELY ON SECOND
- _____ RESOURCE I RELY ON THIRD

Q9. For the resource you indicated above as the one you rely on the most, please rate that resource as excellent, good, fair, or poor. (Please circle one number)

- 1 EXCELLENT
- 2 GOOD
- 3 FAIR
- 4 POOR

Thank you for answering this section. Please continue on to the next section.

Habitat Restoration for Oregon Coast Coho Salmon Questions

Q10. Do you feel you need more information on **habitat restoration for Oregon coast coho salmon?**

- 1 NO
- 2 YES

Q10A. If no, what is the reason you do not feel you need information on this topic?
(Please circle one number)

- 1 I HAVE ENOUGH INFORMATION ON THIS TOPIC
- 2 I AM NOT INTERESTED IN THIS TOPIC
- 3 OTHER (Please describe) _____

Q10B. If yes, how would you prefer to receive that information? (Via websites on the Internet, trainings, workshops, etc) Please describe.

Q11. Do you rely on websites to obtain information about **habitat restoration for Oregon coast coho salmon?**

- 1 NO
- 2 YES

Q11A. If yes, please list the names of the 3 websites you visit most often for information about **habitat restoration for Oregon coast coho salmon?**

1) _____

2) _____

3) _____

Q12. Please indicate whether or not you rely on each of the following resources for information about **habitat restoration for Oregon coast coho salmon**? *(Please circle one number for each category)*

	YES	NO
a. SCIENTIFIC BOOKS AND JOURNALS.....	1	2
b. WEBSITES.....	1	2
c. OSU EXTENSION.....	1	2
d. AGENCY EMPLOYEES <i>WITHIN</i> YOUR WATERSHED COUNCIL (PLEASE SPECIFY AGENCY _____).....	1	2
e. AGENCY EMPLOYEES <i>OUTSIDE</i> YOUR WATERSHED COUNCIL (PLEASE SPECIFY AGENCY _____).....	1	2

Q13. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about **habitat restoration for Oregon coast coho salmon**. *(Please write appropriate letter from question 12 on each line)*

- _____ RESOURCE I RELY MOST ON
- _____ RESOURCE I RELY ON SECOND
- _____ RESOURCE I RELY ON THIRD

Q14. For the resource you indicated above as the one you rely on the most, please rate that resource as excellent, good, fair, or poor. *(Please circle one number)*

- 1 EXCELLENT
- 2 GOOD
- 3 FAIR
- 4 POOR

Thank you for answering this section. Please continue on to the next section.

Oregon Plan for Salmon and Watersheds Questions

Q15. Do you feel you need more information about the Oregon Plan for Salmon and Watersheds?

- 1 NO
- 2 YES

→ Q15A. If no, what is the reason you do not feel you need information on this topic?
(Please circle one number)

- 1 I HAVE ENOUGH INFORMATION ON THIS TOPIC
- 2 I AM NOT INTERESTED IN THIS TOPIC
- 3 OTHER (Please describe) _____

→ Q15B. If yes, how would you prefer to receive that information? (Via websites on the Internet, trainings, workshops, etc) Please describe.

Q16. Do you rely on websites to obtain information about the Oregon Plan for Salmon and Watersheds?

- 1 NO
- 2 YES

→ Q16A. If yes, please list the names of the 3 websites you visit most often for information about **Oregon Plan for Salmon and Watersheds?**

- 1) _____
- 2) _____
- 3) _____

Q17. Please indicate whether or not you rely on each of the following resources for information about **Oregon Plan for Salmon and Watersheds**? *(Please circle one number for each category)*

	YES	NO
a. SCIENTIFIC BOOKS AND JOURNALS.....	1	2
b. WEBSITES.....	1	2
c. OSU EXTENSION.....	1	2
d. AGENCY EMPLOYEES <i>WITHIN</i> YOUR WATERSHED COUNCIL (PLEASE SPECIFY AGENCY _____).....	1	2
e. AGENCY EMPLOYEES <i>OUTSIDE</i> YOUR WATERSHED COUNCIL (PLEASE SPECIFY AGENCY _____).....	1	2

Q18. Of those resources you indicated you rely on in above, please indicate your first, second, and third resources you rely on most to obtain information about **Oregon Plan for Salmon and Watersheds**. *(Please write appropriate letter from question 17 on each line)*

- _____ RESOURCE I RELY MOST ON
- _____ RESOURCE I RELY ON SECOND
- _____ RESOURCE I RELY ON THIRD

Q19. For the resource you indicated above as the one you rely on the most, please rate that resource as excellent, good, fair, or poor. *(Please circle one number)*

- 1 EXCELLENT
- 2 GOOD
- 3 FAIR
- 4 POOR

Thank you for answering this section. Please continue on to the next section.

Harvest Regulations of coho Salmon in Oregon Questions

Q20. Do you feel you need more information about the harvest regulations of coho salmon in Oregon?

- 1 NO
- 2 YES

→ **Q20A. If no, what is the reason you do not feel you need information on this topic?**
(Please circle one number)

- 1 I HAVE ENOUGH INFORMATION ON THIS TOPIC
- 2 I AM NOT INTERESTED IN THIS TOPIC
- 3 OTHER (Please describe) _____

→ **Q20B. If yes, how would you prefer to receive that information? (Via websites on the Internet, trainings, workshops, etc) Please describe.**

Q21. Do you rely on websites to obtain information about harvest regulations of coho salmon in Oregon?

- 1 NO
- 2 YES

→ **Q21A. If yes, please list the names of the 3 websites you visit most often for information about harvest regulations of coho salmon in Oregon?**

- 1) _____
- 2) _____
- 3) _____

Q22. Please indicate whether or not you rely on each of the following resources for information about **harvest regulations of coho salmon in Oregon**? (Please circle one number for each category)

	YES	NO
a. SCIENTIFIC BOOKS AND JOURNALS.....	1	2
b. WEBSITES.....	1	2
c. OSU EXTENSION.....	1	2
d. AGENCY EMPLOYEES <i>WITHIN</i> YOUR WATERSHED COUNCIL (PLEASE SPECIFY AGENCY _____).....	1	2
e. AGENCY EMPLOYEES <i>OUTSIDE</i> YOUR WATERSHED COUNCIL (PLEASE SPECIFY AGENCY _____).....	1	2

Q23. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about **harvest regulations of coho salmon in Oregon**. (Write appropriate letter from question 22 on each line)

- _____ RESOURCE I RELY MOST ON
- _____ RESOURCE I RELY ON SECOND
- _____ RESOURCE I RELY ON THIRD

Q24. For the resource you indicated above as the one you rely on the most, please rate that resource as excellent, good, fair, or poor. (Please circle one number)

- 1 EXCELLENT
- 2 GOOD
- 3 FAIR
- 4 POOR

Thank you for answering this section. Please continue on to the final section.

This section pertains directly to NOAA Fisheries recovery planning process for the Oregon coast coho salmon as mandated by the Endangered Species Act.

Q25. How informed are you regarding **NOAA Fisheries recovery planning** efforts for the threatened Oregon coast coho salmon? *(Please circle one number)*

- 1 I AM COMPLETELY UNINFORMED. THIS IS THE FIRST TIME I HAVE HEARD ABOUT THIS PROCESS. _____ → **Go now to Q27**
- 2 I AM SOMEWHAT INFORMED
- 3 I AM ADEQUATELY INFORMED

Q26. Where did you first learn of **NOAA Fisheries recovery planning** for the threatened Oregon coast coho salmon? *(Please circle one number)*

- 1 WEBSITES
- 2 OSU EXTENSION
- 3 AGENCY EMPLOYEES *OUTSIDE* YOUR WATERSHED COUNCILS (IF SO, SPECIFY AGENCY _____)
- 4 AGENCY EMPLOYEES *WITHIN* YOUR WATERSHED COUNCILS (IF SO, SPECIFY AGENCY _____)
- 5 NEWS MEDIA
- 6 OTHER _____

→ Q26A. If you first learned of NOAA Fisheries recovery planning through a website, please list the name of that website.

Q27. How would you rate your interest level on the topic of **NOAA Fisheries recovery planning** for threatened Oregon coast coho salmon? *(Please circle one number)*

- 1 I AM NOT INTERESTED AT ALL
- 2 I AM SOMEWHAT INTERESTED
- 3 I AM VERY INTERESTED

Q28. Would you be interested in being notified of upcoming Oregon coast coho salmon Technical Recovery Team **meetings**?

- 1 NO
- 2 YES



Q28A. If yes, how would you prefer to be informed about **upcoming meetings**? Please rank the following methods of communication from 1 to 3 with 1 being the method you most prefer and 3 being the method you least prefer. *(Please place a number from one to three in each space).*

- _____ BY E-MAIL
- _____ BY LETTER
- _____ BY POSTING ON A WEBSITE. NO NOTIFICATION IS NECESSARY.

Q29. Would you be interested in being informed of the availability of **meeting minutes** from the Oregon coast coho salmon Technical Recovery Team meetings?

- 1 NO
- 2 YES

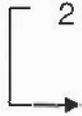


Q29A. If yes, how would you prefer to be informed about the availability of these **meeting minutes**? Please rank the following methods of communication from 1 to 4 with 1 being the method you most prefer and 4 being the method you least prefer. *(Please place a number from one to four in each space).*

- _____ BY E-MAIL
- _____ BY LETTER
- _____ BY NEWSLETTER
- _____ BY POSTING ON A WEBSITE. NO NOTIFICATION IS NECESSARY.

Q30. Would you be interested in being informed that draft **documents/reports** from the Oregon coast coho salmon Technical Recovery Team are available for review?

- 1 NO
- 2 YES



Q30A. If yes, how would you prefer to be informed about the availability of these **documents/reports**? Please rank the following methods of communication from 1 to 4 with 1 being the method you most prefer and 4 being the method you least prefer. *(Please place a number from one to four in each space).*

- _____ BY E-MAIL
- _____ BY LETTER
- _____ BY NEWSLETTER
- _____ BY POSTING ON A WEBSITE. NO NOTIFICATION IS NECESSARY.

Q31. Would you be interested in having a presentation given to your watershed council about NOAA Fisheries recovery planning?

- 1 NO
- 2 YES



Q31A. If yes, feel free to email the Oregon Coast Recovery Planning Coordinator, Rosemary Furfey, at Rosemary.Furfey@noaa.gov to schedule a presentation.

Q32. Please use this space to make any additional comments about communication between NOAA Fisheries and watershed council coordinators or about this questionnaire in general.

Thank you for your assistance!
Please return the completed questionnaire in the stamped envelope provided.

APPENDIX C
CODE BOOK

Variable Name	Variable Label	Type of Variable
Disposition	Response Disposition	1= "Complete" 2 = "Undeliverable" 3= "Non respondent" 4 = "Refused" 5 = "Incomplete"
Q1	Q1. What is your position in the watershed council?	Nominal
Q2	Q2. What percentage of your council's current projects affect habitat improvement for coastal coho salmon?	Categorical Variable 1 = "Zero to 25%" 2 = "26 to 50%" 3 = "51 to 75%" 4 = "76 to 100%" 9 = no response
Q3	Q3. Of the following options, which most closely describes the main reason why your council decided to conduct coho salmon restoration activities?	Categorical Variable 1 = "Funding Availability" 2 = "Your watershed council's interest on threatened coho salmon" 3 = "Laws and regulations" 4 = "Oregon plan for salmon and watershed" 5 = "Other" 9 = "No response"
Q3Other	Other	Nominal
Q4	Q4. What do you use the Internet for?	Categorical Variable 1 = "Communication" 2 = "Gathering information relating to natural resource issues" 3 = "Other" 9 = "No response"
Q4Other	Other	Nominal
Q4a	Q4a. If you use the Internet to gather information relating to natural resource issues, how frequently are you searching the Internet?	Categorical Variable 1 = "Less than once a month" 2 = "Once per week" 3 = "2-3 times per week" 4 = "More than 3 times per week" 9 = "No response"
Q5	Q5. Do you feel you need more information on coho salmon life history and ecology ?	Categorical Variable 1 = "No" 2 = "Yes" 9 = "No response"
Q5a	Q5a. If no, what is the	Categorical Variable

	reason you do not feel you need information on this topic?	1 = "I have enough information on this topic" 2 = "I am not interested in this topic" 3 = "Other" 9 = "No response"
Q5aOther	Other	Nominal
Q5b	Q5b. If yes, how would you prefer to receive that information? (Via websites on the Internet, trainings, workshops, etc) Please describe.	Nominal
Q6	Q6. Do you rely on websites to obtain information about coho salmon life history and ecology ?	Categorical Variable 1 = "No" 2 = "Yes" 9 = "No response"
Q6a	Q6a. If yes, please list the <u>names</u> of the 3 websites you visit most often for information about coho salmon life history and ecology ?	Nominal
Q7	Q7. Please indicate whether or not you rely on each of the following resources for information about coho salmon life history and ecology ?	
Q7a	Q7a. Scientific Books and Journals	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q7b	Q7b. Websites	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q7c	Q7c. OSU Extension	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q7d	Q7d. Agency employees within your watershed council	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"

Q7d-specify	Specify Agency	Nominal
Q7e.	Q7e. Agency employees outside your watershed council	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q7e – specify	Specify Agency	Nominal
Q8 - most	Q8. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about coho salmon life history and ecology	Categorical Variable 1 = "Scientific books and journals" 2 = "Websites" 3 = "OSU Extension" 4 = "Agency employees within your watershed council" 5 = "Agency employees outside your watershed council" 9 = "No response"
Q8 – second	Q8. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about coho salmon life history and ecology	Categorical Variable 1 = "Scientific books and journals" 2 = "Websites" 3 = "OSU Extension" 4 = "Agency employees within your watershed council" 5 = "Agency employees outside your watershed council" 9 = "No response"
Q8 - third	Q8. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about coho salmon life history and ecology	Categorical Variable 1 = "Scientific books and journals" 2 = "Websites" 3 = "OSU Extension" 4 = "Agency employees within your watershed council" 5 = "Agency employees outside your watershed council" 9 = "No response"
Q9	Q9. For the resource you indicated above as the one you rely on the most, please rate that resource as	Categorical Variable 1 = "Excellent" 2 = "Good" 3 = "Fair"

	excellent, good, fair, or poor.	4 = "Poor" 9 = "No response"
Q10	Q10. Do you feel you need more information on habitat restoration for Oregon coast coho salmon ?	Categorical Variable 1 = "No" 2 = "Yes" 9 = "No response"
Q10a	Q10a. If no, what is the reason you do not feel you need information on this topic?	Categorical Variable 1 = "I have enough information on this topic" 2 = "I am not interested in this topic" 3 = "Other" 9 = "No response"
Q10a - Other	Other	Nominal
Q11	Q11. Do you rely on websites to obtain information about coho salmon life history and ecology?	Categorical Variable 1 = "No" 2 = "Yes" 9 = "No response"
Q11a	Q11a. If yes, please list the <u>names</u> of the 3 websites you visit most often for information about habitat restoration for Oregon coast coho salmon ?	Nominal.
Q12	Q12. Please indicate whether or not you rely on each of the following resources for information about habitat restoration for Oregon coast coho salmon ?	
Q12a	Q12a. Scientific Books and Journals	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q12b	Q12b. Websites	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q12c	Q12c. OSU Extension	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q12d	Q12d. Agency employees	Categorical Variable

	within your watershed council	1 = "Yes" 2 = "No" 9 = "No response"
Q12d – Specify	Specify Agency	Nominal
Q12e	Q12e. Agency employees outside your watershed council	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q12e. Specify	Specify Agency	Nominal
Q13 most	Q13. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about habitat restoration for Oregon coast coho salmon.	Categorical Variable 1 = "Scientific books and journals" 2 = "Websites" 3 = "OSU Extension" 4 = "Agency employees within your watershed council" 5 = "Agency employees outside your watershed council" 9 = "No response"
Q13 second	Q13. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about habitat restoration for Oregon coast coho salmon.	Categorical Variable 1 = "Scientific books and journals" 2 = "Websites" 3 = "OSU Extension" 4 = "Agency employees within your watershed council" 5 = "Agency employees outside your watershed council" 9 = "No response"
Q13 third	Q13. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about habitat restoration for Oregon coast coho salmon.	Categorical Variable 1 = "Scientific books and journals" 2 = "Websites" 3 = "OSU Extension" 4 = "Agency employees within your watershed council" 5 = "Agency employees outside your watershed council" 9 = "No response"
Q14	Q14. For the resource you	Categorical Variable

	indicated above as the one you rely on the most, please rate that resource as excellent, good, fair, or poor.	1 = "Excellent" 2 = "Good" 3 = "Fair" 4 = "Poor" 9 = "No response"
Q15	Q15. Do you feel you need more information about the Oregon Plan for Salmon and Watersheds ?	Categorical Variable 1 = "No" 2 = "Yes" 9 = "No response"
Q15a	Q15a. If no, what is the reason you do not feel you need information on this topic?	Categorical Variable 1 = "I have enough information on this topic" 2 = "I am not interested in this topic" 3 = "Other" 9 = "No response"
Q15aOther	Other	Nominal
Q15b	Q15b. If yes, how would you prefer to receive that information? (Via websites on the Internet, trainings, workshops, etc)	Nominal
Q16	Q16. Do you rely on websites to obtain information about the Oregon Plan for Salmon and Watersheds ?	Categorical Variable 1 = "No" 2 = "Yes" 9 = "No response"
Q16a	Q16a. If yes, please list the names of the 3 websites you visit most often for information about Oregon Plan for Salmon and Watersheds ?	Nominal
Q17	Q17. Please indicate whether or not you rely on each of the following resources for information about Oregon Plan for Salmon and Watersheds ?	
Q17a	Q17a. Scientific Books and Journals	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q17b	Q17b. Websites	Categorical Variable 1 = "Yes"

		2 = "No" 9 = "No response"
Q17c	Q17c. OSU Extension	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q17d	Q17d. Agency employees within your watershed council	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q17d – Specify	Specify Agency	Nominal
Q17e	Q17e. Agency employees outside your watershed council	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q17e Specify	Specify Agency	Nominal
Q18 most	Q18. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about Oregon Plan for Salmon and Watersheds.	Categorical Variable 1 = "Scientific books and journals" 2 = "Websites" 3 = "OSU Extension" 4 = "Agency employees within your watershed council" 5 = "Agency employees outside your watershed council" 9 = "No response"
Q18 second	Q18. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about Oregon Plan for Salmon and Watersheds.	Categorical Variable 1 = "Scientific books and journals" 2 = "Websites" 3 = "OSU Extension" 4 = "Agency employees within your watershed council" 5 = "Agency employees outside your watershed council" 9 = "No response"
Q18 third	Q18. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about	Categorical Variable 1 = "Scientific books and journals" 2 = "Websites" 3 = "OSU Extension" 4 = "Agency employees

	Oregon Plan for Salmon and Watersheds.	within your watershed council" 5 = "Agency employees outside your watershed council" 9 = "No response"
Q19	Q19. For the resource you indicated above as the one you rely on the most, please rate that resource as excellent, good, fair, or poor.	Categorical Variable 1 = "Excellent" 2 = "Good" 3 = "Fair" 4 = "Poor" 9 = "No response"
Q20	Q20. Do you feel you need more information about the harvest regulations of coho salmon in Oregon?	Categorical Variable 1 = "No" 2 = "Yes" 9 = "No response"
Q20a	Q20a. If no, what is the reason you do not feel you need information on this topic?	Categorical Variable 1 = "I have enough information on this topic" 2 = "I am not interested in this topic" 3 = "Other" 9 = "No response"
Q20a - Other	Other	Nominal
Q20b	Q20b. If yes, how would you prefer to receive that information? (Via websites on the Internet, trainings, workshops, etc)	Nominal
Q21	Q21. Do you rely on websites to obtain information about harvest regulations of coho salmon in Oregon?	Categorical Variable 1 = "No" 2 = "Yes" 9 = "No response"
Q21a	Q21a. If yes, please list the names of the 3 websites you visit most often for information about harvest regulations of coho salmon in Oregon?	Nominal
Q22	Q22. Please indicate whether or not you rely on each of the following resources for information about harvest regulations	

	of coho salmon in Oregon?	
Q22a	Q22a. Scientific Books and Journals	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q22b	Q22b. Websites	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q22c	Q22c. OSU Extension	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q22d.	Q22d. Agency employees within your watershed council	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q22d – Specify	Specify Agency	Nominal
Q22e.	Q22e. Agency employees outside your watershed council	Categorical Variable 1 = "Yes" 2 = "No" 9 = "No response"
Q22e. Specify	Specify Agency	Nominal
Q23 most	Q23. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about harvest regulations of coho salmon in Oregon.	Categorical Variable 1 = "Scientific books and journals" 2 = "Websites" 3 = "OSU Extension" 4 = "Agency employees within your watershed council" 5 = "Agency employees outside your watershed council" 9 = "No response"
Q23 second	Q18. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about harvest regulations of coho salmon in Oregon.	Categorical Variable 1 = "Scientific books and journals" 2 = "Websites" 3 = "OSU Extension" 4 = "Agency employees within your watershed council" 5 = "Agency employees outside your watershed"

		council” 9 = “No response”
Q23 third	Q23. Of those resources you indicated you rely on above, please indicate your first, second, and third resources you rely on most to obtain information about harvest regulations of coho salmon in Oregon.	Categorical Variable 1 = “Scientific books and journals” 2 = “Websites” 3 = “OSU Extension” 4 = “Agency employees within your watershed council” 5 = “Agency employees outside your watershed council” 9 = “No response”
Q24	Q24. For the resource you indicated above as the one you rely on the most, please rate that resource as excellent, good, fair, or poor.	Categorical Variable 1 = “Excellent” 2 = “Good” 3 = “Fair” 4 = “Poor” 9 = “No response”
Q25	Q25. How informed are you regarding NOAA Fisheries recovery planning efforts for the threatened Oregon coast coho salmon?	Categorical Variable 1 = “I am completely uninformed. This is the first time I have heard about this process.” 2 = “I am somewhat informed” 3 = “I am adequately informed” 9 = “No response”
Q26	Q26. Where did you first learn of NOAA Fisheries recovery planning for the threatened Oregon coast coho salmon?	Categorical Variable 1 = “Websites” 2 = “OSU Extension” 3 = “Agency employees outside your watershed council” 4 = “Agency employees within your watershed council” 5 = “News media” 6 = “Other” 9 = “No response”
Q26/3 – Specify	Specify Agency	Nominal
Q26/4 – Specify	Specify Agency	Nominal
Q26 Other	Other	Nominal
Q26a	Q26a. If you first learned	Nominal

	of NOAA Fisheries recovery planning through a website, please list the name of that website.	
Q27	Q27. How would you rate your interest level on the topic of NOAA Fisheries recovery planning for threatened Oregon coast coho salmon?	Categorical Variable 1 = "I am not interested at all." 2 = "I am somewhat interested" 3 = "I am very interested" 9 = "No response"
Q28	Q28. Would you be interested in being notified of upcoming Oregon coast coho salmon Technical Recovery Team meetings ?	Categorical Variable 1 = "No" 2 = "Yes" 9 = "No response"
Q28a	Q28a. If yes, how would you prefer to be informed about upcoming meetings ? Please rank the following methods of communication from 1 to 3 with 1 being the method you most prefer and 3 being the method you least prefer.	Continuous (ranges from 1 to 3).
Q29	Q29. Would you be interested in being informed of the availability of meeting minutes from the Oregon coast coho salmon Technical Recovery Team meetings?	Categorical Variable 1 = "No" 2 = "Yes" 9 = "No response"
Q29a	Q29a. If yes, how would you prefer to be informed about the availability of these meeting minutes ? Please rank the following methods of communication from 1 to 4 with 1 being the method you most prefer and 4 being the method you least prefer.	Continuous (ranges from 1 to 4).
Q30	Q30. Would you be interested in being informed that draft	Categorical Variable 1 = "No" 2 = "Yes"

	documents/reports from the Oregon coast coho salmon Technical Recovery Team are available for review?	9 = "No response"
Q30a	Q30a. If yes, how would you prefer to be informed about the availability of these documents/reports ? Please rank the following methods of communication from 1 to 4 with 1 being the method you most prefer and 4 being the method you least prefer.	Continuous (ranges from 1 to 4).
Q31	Q31. Would you be interested in having a presentation given to your watershed council about NOAA Fisheries recovery planning?	Categorical Variable 1 = "No" 2 = "Yes" 9 = "No response"
Q32	Q32. Please use this space to make any additional comments about communication between NOAA Fisheries and watershed council coordinators or about this questionnaire in general.	Nominal

APPENDIX D
TECHNICAL RECOVERY TEAM SURVEY

Technical Recovery Team Survey

1. What is your job title? _____
2. Do Oregon coastal watershed council coordinators feel they need more information on the following topics? (Please circle YES or NO for each category)

COHO SALMON LIFE HISTORY AND ECOLOGY	YES	NO
HABITAT RESTORATION FOR OREGON COAST COHO SALMON	YES	NO
OREGON PLAN FOR SALMON AND WATERSHEDS	YES	NO
HARVEST REGULATIONS OF COHO SALMON IN OREGON	YES	NO

3. What resources do watershed council coordinators use for information regarding Oregon Coast coho salmon issues (as the ones listed in #2)? Please rank the following resources from 1 to 5 with 1 being the resource you think is most widely used and 5 being the resource you think is used least by watershed council coordinators. (Please place a number from 1 to 5 in each space).

SCIENTIFIC BOOKS AND JOURNALS
WEBSITES
OREGON STATE UNIVERSITY EXTENSION
AGENCY EMPLOYEES <i>WITHIN</i> THE WATERSHED COUNCIL
AGENCY EMPLOYEES <i>OUTSIDE</i> THE WATERSHED COUNCIL

4. Which of the following agencies are watershed council coordinators in contact with the most for information on Oregon Coast coho salmon issues (as the ones listed in #2)? (Please rank the top 4 agency's most commonly used with 1 being the most used).

_____ Bureau of Land Management
_____ National Resources Conservation Service
_____ NOAA Fisheries
_____ Oregon Department of Environmental Quality
_____ Oregon Department of Fish and Wildlife
_____ Oregon Watershed Enhancement Board
_____ United States Forest Service
_____ United States Fish and Wildlife Service

5. What is the preferred communication method by watershed council coordinators for the following topics: notification of upcoming meetings, notification of the availability of meeting minutes, notification of the availability of draft TRT documents/reports? (Please circle one communication method for each of the topics on the left.)

NOTIFICATION OF UPCOMING MEETINGS	BY E-MAIL	BY LETTER	BY POSTING ON A WEBSITE. NO NOTIFICATION IS NECESSARY.	
AVAILABILITY OF MEETING MINUTES	BY E-MAIL	BY LETTER	BY NEWSLETTER	BY POSTING ON A WEBSITE. NO NOTIFICATION IS NECESSARY.
AVAILABILITY OF DRAFT TRT DOCUMENTS/REPORTS	BY E-MAIL	BY LETTER	BY NEWSLETTER	BY POSTING ON A WEBSITE. NO NOTIFICATION IS NECESSARY.