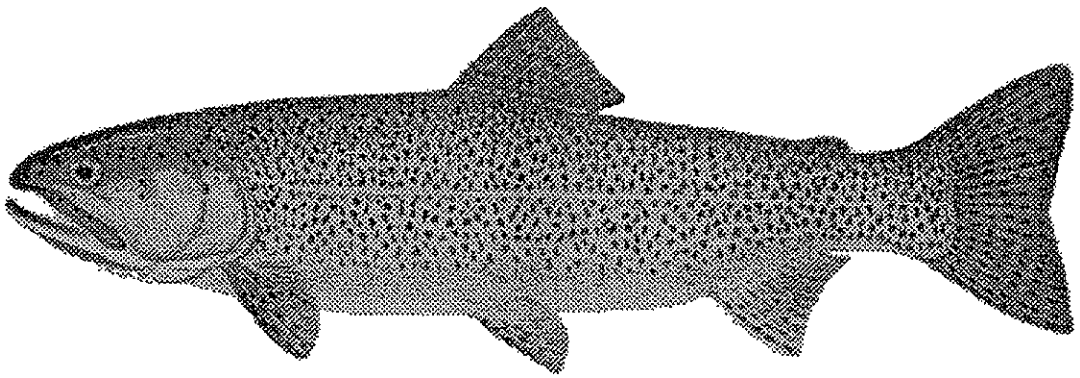
McPherson

YACHATS RIVER BASIN
FISH MANAGEMENT PLAN



Oregon Department of Fish and Wildlife

November 1997

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INTRODUCTION

The Fish Management Policy of the Oregon Department of Fish and Wildlife (ODFW) requires that management plans be prepared for each basin or management unit. The Yachats River Basin Fish Management Plan (hereafter referred to as the Yachats Plan) was developed to direct management of the fish resources of the Yachats River Basin. The scope of the plan includes the main stem Yachats River and its tributaries.

The Yachats Plan is one of several Oregon mid-coast basin plans developed by ODFW. Other plans have been developed for the basins of the Salmon River, Siletz River, Yaquina River, Alsea River, Siuslaw River, and for the small ocean tributary streams along the mid-coast.

ODFW is committed to the planning process as an integral part of all current and future management by the agency. Species plans for coho, coastal chinook, steelhead, trout and warmwater game fish have been adopted. These statewide plans guide the development of more localized plans for individual river basins and subbasins.

These plans serve several needed functions. They present a logical, systematic approach to conserving our aquatic resources. They establish management priorities and direct attention to the most critical problems affecting our fisheries so that the Department's funds and personnel can be used accordingly. They inform the public and other agencies about the Department's management programs and provide them with the opportunity to help formulate those programs.

The Yachats Plan was jointly developed by ODFW staff and a public steering committee. The steering committee included individuals who represented federal land management agencies, state and local government, private land owners, and fishing and conservation groups. The function of this committee was to help identify management direction and strategies for fish resources in the Yachats River Basin. The steering committee helped develop management policies, objectives and actions, and reviewed drafts of the plan. Yachats River Basin Steering Committee members were:

Member	Affiliation
Gary Brain	*Yachats businessman*
Dike Dame	*Oregon Trout*
Paul Englemeyer	*Audubon Society and Tenmile Creek Association*
Hans Radtke	*Fisheries Economist*
Steve Raymond	*Oregon Salmon Commission*
Gary Smith	*Diamond Wood Products*
Matt Spangler	*Lincoln County Planning Department*
Ron Taves	*STEP Volunteer*
Paul Thomas	*Siuslaw National Forest*

The plan is divided into sections that deal with habitat, ecological considerations, the major fish species or groups of species, and angling access. Each of these sections contains:

1. Background and Status—historical and current information on the topic of that section.
2. Management Considerations—important issues to consider in formulating management policies, objectives, and actions.
3. Policies—mandatory operating principles developed specifically for management activities in the basin related to that species or topic.
4. Objectives—what is intended to be accomplished.
5. Actions—means of achieving the objective.

Legal Considerations

Besides the statewide species plans, the Yachats Plan must also conform to other established constraints such as federal acts (e.g., Wild and Scenic Rivers, Wilderness, Endangered Species), state statutes, administrative rules, memoranda of understanding and other policies. These include:

1. Legislation—Oregon Revised Statutes (ORS).
2. Oregon Administrative Rules (OAR)—Goals and policies for commercial and sport fishing regulations, fish management, and salmon hatchery operation, including the Wild Fish Management and Habitat Mitigation policies.
3. Procedures developed by ODFW—Manual for Fish Management (1977); *A Department Guide for Introductions and Transfers of Finfish into Oregon Waters* (1982).
4. Agreements with other agencies—e.g., U.S. Forest Service (USFS), Bureau of Land Management (BLM), and the state Water Resources Department (WRD).
5. Rules and regulations of other federal, state, and local jurisdictions—e.g., Oregon Department of Environmental Quality (DEQ), Oregon Department of Forestry (DOF), Oregon Department of Land Conservation and Development (DLCD).

The Oregon Plan

Subsequent to the initial writing of this plan, the State of Oregon began developing a plan for restoring salmon populations along the entire length of the Oregon coast. The culmination of this effort is called the Oregon Plan. The Yachats Plan, for the most part, provides more basin specific direction for salmonid recovery efforts than found in the Oregon Plan. The Yachats Plan, however, did require minor editing to make it consistent with the objectives and actions identified in the Oregon Plan. The wording of some objectives and actions may be different than what was developed with the steering committee, but the intent has remained the same. As new information is gathered and actions to address steelhead recovery are developed, objectives and actions in the Oregon Plan, and consequently the Yachats Plan, will be revised.

YACHATS RIVER BASIN MANAGEMENT OVERVIEW

The Yachats River Basin is one in a series of similar watersheds in the Oregon coastal mountain range extending from the Nehalem to the Coquille. Rivers and streams in these watersheds generally occur in a forest dominated landscape, have moderate gradients, and medium to large estuaries. There are few dams that substantially affect anadromous fish runs. Water withdrawals impact only a small portion of the total miles of stream habitat. Water quality and temperatures are suitable for salmonids for the entire year in most areas. Rainfall throughout the area is heavy, resulting in a high density of streams relative to watershed area. The Yachats River system has about 69 contiguous miles of stream suitable for salmonids. Some of these stream reaches are highly productive.

Fishery management in the Yachats River Basin will focus on multiple fish species and the restoration of habitat conditions that benefit the entire fish assemblage (Lichatowich et al. 1995). This multi-species approach is taken because most Yachats River Basin stream reaches support co-existing populations of up to four kinds of highly valued anadromous salmonids (coho and chinook salmon, steelhead and cutthroat trout) as well as a variety of non-salmonid species. Management actions, including efforts to influence habitat conditions and angling regulations, will unavoidably affect all fish species, not simply the single target fish species. Yachats River Basin fishery management will be based on the assumption that overall fish production and benefits will be maximized by creating conditions that are favorable for the assemblage of fish species, and letting natural processes function to determine the production of individual species.

The Yachats River Basin has traditionally been managed for production of wild salmonids. Few hatchery fish have been released in the Yachats River Basin historically and none has been released in the past several decades.

All salmonid species in the Yachats River Basin are at depressed levels with the exception of resident cutthroat trout (Table 1). The depressed status of Yachats River Basin fish stocks has resulted from human induced factors including habitat degradation, excessive harvest, and hatchery influence (from adjacent streams) in combination with natural events such as droughts, floods and El Niño ocean conditions. As human induced factors are controlled and corrected, it is expected that fish abundance will increase substantially, but it is not possible to accurately forecast the shape recovery will take. In addition to the confounding effects of natural environmental variation, the recovery of individual fish species due to reduction in human impacts can only be loosely surmised. For this reason, this management plan will treat specific management targets for individual species as secondary to recovery of the entire basin and assemblage of fish species.

Table 1. Status of Yachats River Basin salmonid stocks.

Species	Status	Comments
Chum salmon	Depressed	Near southern edge of range of chum salmon; present only in the lower basin .
Fall chinook salmon	Low population level	Catch data show increasing trend.
Coho salmon	Depressed	Multiple factors responsible for depressed status: over-harvest, loss of habitat, El Niño ocean conditions.
Winter steelhead	Depressed	Multiple factors responsible for depressed status; limited inventory information.
Cutthroat trout	Searun depressed, Resident stable	Complex biology with multiple life history types.

Harvest management of wild fish will emphasize achieving adequate spawner escapement of all species to allow stocks to rebuild. Angling regulations will be designed to allow harvest of healthy species while protecting sensitive species or stocks of concern.

Habitat management will emphasize recovery of natural conditions on a watershed scale. Disturbances such as forest fires, landslides or other events that affect the landscape and aquatic habitats are recognized as a part of the natural system. It is assumed that the assemblage of fish species in the Yachats River Basin has developed the capacity to adapt and thrive in the face of these disturbances. It is only when systematic and excessive disturbance creates conditions outside the range of natural variability that native fish stocks are not likely to persist. Priority for habitat restoration activities will be given to watershed characteristics that are outside the range of natural variability and that are important to fish production (see Appendix A).

Individual species that are severely depressed will also be targeted for specific management activities to reduce the risk of extinction in the short term. This is necessary because recovery through a generalized watershed-fish assemblage approach will be gradual

over an extended period of time. This may not be adequate to address immediate threats to the continued viability of severely depressed species such as coho salmon.

The following policies, objectives, and actions pertain to management of all fish species in the Yachats River Basin.

Policies

Policy 1. Fish management in the Yachats River Basin shall be directed at protecting and restoring self-sustaining populations of all fish species native to the basin.

Policy 2. Management of individual fish populations and their habitat shall only be emphasized when remedial actions are needed to address critical stocks or species, or when a population is the cause of constraints placed on mixed-stock fisheries or land use activities.

Policy 3. Permanent natural barriers to fish migration shall not be altered to allow fish passage, and fish shall not be stocked above these barriers. However, existing fish ladders shall be maintained.

Policy 4. Conservation objectives take priority over harvest objectives.

Objectives

Objective 1. Restore and maintain productive populations of all species of salmonids native to the Yachats River Basin.

Assumptions and Rationale

1. Maximum production and the availability for harvest of valuable salmonid species will be achieved by focusing management on restoring and maintaining a functional ecosystem.

2. Habitat within the Yachats River Basin is still largely suitable for production of native salmonids.

3. Some fish populations within the Yachats River Basin will require remedial action to attain self-sustaining status in the near future if severe constraints on fisheries or land use practices are to be avoided.

4. Focusing management on the assemblage of species will be more efficient and have a higher probability of success than addressing single species.

5. The reaction of any single depressed fish population within the Yachats River Basin to management actions is difficult to predict. If an overall assemblage of self-sustaining wild

salmonids is restored, the relative abundance of individual species will be different from historic levels and largely unpredictable.

6. ODFW lacks resources for specific management of non-salmonid species. It is assumed that the needs of non-salmonid fish species in the Yachats River Basin that are not monitored will be provided for by maintaining and restoring the full assemblage of indigenous salmonids.

Actions

1.1 Achieve the habitat objectives described in this plan.

1.2 Bring the level of hatchery fish in natural spawning areas of the Yachats River Basin to less than 10% of the total natural spawning population for each species.

1.3 Control fish harvest so that each species in the Yachats River Basin is able to produce to its maximum potential.

1.4 Institute remedial recovery programs for fish species that are now severely depressed within the Yachats River Basin.

1.5 Develop information to determine if marine mammal predation is a primary constraint preventing the recovery of any of the native salmonid species in the Yachats River Basin.

HABITAT

Basin Description

The Yachats River Basin is about 44 square miles in size and contains about 69 miles of stream. Major tributaries of the Yachats River include the North Fork and School Fork. The Yachats River enters the Pacific Ocean at the town of Yachats (Figure 1). Table 2 gives the approximate amount of fish habitat in the basin.

Table 2. Yachats River Basin size and approximate amount of fish habitat. Preliminary draft analysis (ODFW 1994).

Basin Size	44 square miles
Large main stem	14 miles
Medium size tributaries: coho and/or steelhead predominate	30 miles
Small tributaries[a]: cutthroat only in most cases	25 miles

[a] Estimates of small stream habitat were based on the Oregon Department of Forestry's 1993 study of stream miles with fish in townships near Toledo and Seaside.

Land Use

About two-thirds of the land in the Yachats River Basin is in federal ownership and nearly one-third privately owned (Table 3).

Table 3. Land ownership in the Yachats River Basin.

Basin area (square miles)	Percent of total area			
	BLM	USFS	State	Private
44	6.0	66.0	0.3	27.7

The dominant land use in the Oregon mid-coast is forestry (Table 4). Areas managed as forest contain or are used to produce coniferous and deciduous trees. Rural wood lots, land regenerating from cuts and burns, as well as mixed and pure stands of merchantable or non-merchantable timber are included. The upper Yachats River Basin is managed for timber production.

Table 4. Land use in the Oregon mid-coast (Oregon Water Resources Department, 1980).

	Forest	Range	Non-irrigated agriculture	Irrigated agriculture	Urban	Water[a]	Other[b]
Total acres	1,392,765	33,093	21,745	1,249	10,966	14,199	25,510
% of total	92.9	2.2	1.4	0.1	0.7	1.0	1.7

[a] Includes natural and human-made lakes and impoundments.
[b] Includes highway interchanges, airstrips, cemeteries, and other developed areas not adjacent to urban centers.

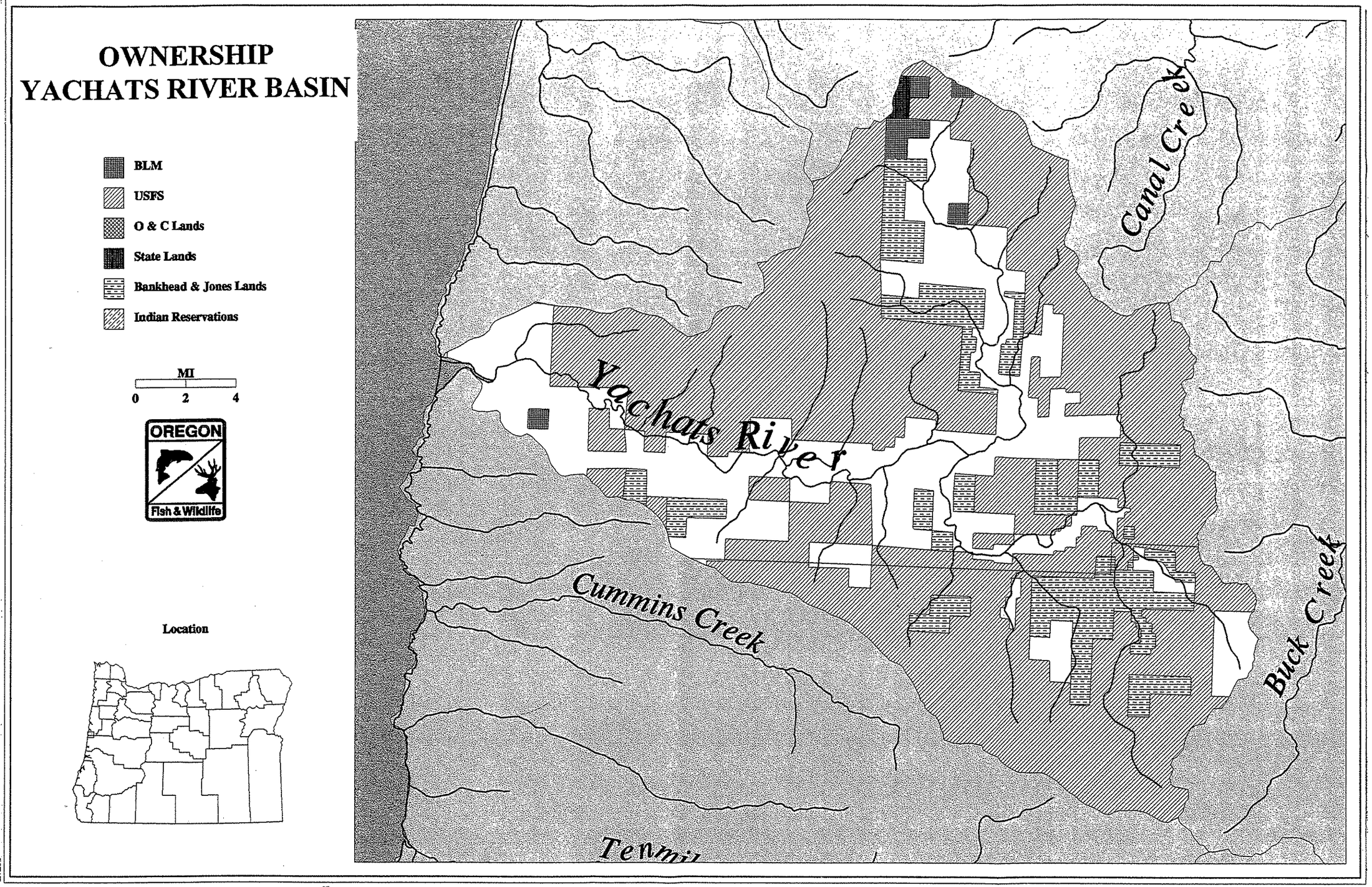
Secondary uses of land in the Yachats River Basin include range, agriculture, and residential use. Range land is found in the lower basin and includes areas characterized by grasses, shrubs, meadows, unimproved pasture and scattered trees. Areas managed for range are found primarily along water courses. Urban development in the Yachats River Basin is found in the city of Yachats which has a population of about 625 (Center for Population Research and Census 1995).

ODFW Role in Habitat Management

The ODFW plays an important role in habitat management by acting in an advisory capacity on fishery matters for land management agencies with control over land use decisions. The ODFW, however, does not have regulatory control over land management activities affecting fish habitat.

The ODFW plays a lead role in advising on fish habitat needs in land management decisions developed by State of Oregon land management agencies including the Oregon Department of Forestry, the Division of State Lands, the Oregon Water Resources Department, Department of Environmental Quality and the Department of Geology and Mineral Industries. ODFW also plays an advisory role in local and county land use planning activities. Overall activities within this category represent the majority of land management activities affecting fish habitat on privately owned lands in the Yachats River Basin.

Figure 1. Land Ownership in the Yachats River Basin



Federal land management agencies have their own fishery biologists who play a lead role in providing consultation concerning fish habitat on federal lands. The ODFW consults with USFS and BLM staff in an advisory role and will work to coordinate direct fish management activities with the USFS and BLM habitat protection efforts on federal land.

The ODFW also works with land owners to implement cooperative fish habitat enhancement efforts in areas where there is a desire to do habitat improvement projects or where a deviation from specific legal standards is needed to address a particular situation.

Goals for Habitat Conditions

A long-term goal for fish habitat within the Yachats River Basin is to return the watershed to natural conditions that allow fish production levels approaching those prior to human disturbance. This long-term goal recognizes that complete habitat recovery is not likely in some areas due to established allocation of land and water to other uses that are sometimes in conflict with providing complete habitat recovery. It also recognizes that the Yachats River Basin has very little fish habitat that is irreversibly lost so a high level of recovery is achievable. Accomplishing this long-term goal will take hundreds of years.

The short-term goal for fish habitat within the Yachats River Basin is to reverse the declining condition of habitat so that measurable improvement can be achieved in key aspects of watershed conditions that are reflective of the basin's capacity to produce fish. These include:

1. Maintenance or increases in stream flows during summer low flow periods.
2. Reduction in summer stream temperatures where artificial warming occurs.
3. Increased in-stream structure.
4. Decreased sediment input into the waterway.
5. Maintenance of water quality.
6. Restoration of natural fish passage conditions throughout the watershed.
7. Increased habitat area available to anadromous and resident fish.

Management to Achieve Goals

Actions in this plan will focus efforts on the short-term goal of achieving measurable improvements in watershed conditions that are reflective of the basin's capacity to produce fish. Consideration will be given to improving watershed conditions by protecting habitat from detrimental effects of land use, allowing natural recovery to progress, and undertaking specific targeted restoration projects where natural recovery is not likely to occur in a timely manner. Management issues and approaches for each aspect of watershed condition are as follows.

In-stream Flows

Peak flows during winter floods may increase if a watershed has extensive roads or cleared land. Intensified flood events will disrupt salmonid habitat by scouring spawning redds, and reducing channel stability. Concerns about increased winter peak flow from cleared lands have been addressed in part by limits on clear-cut sizes on state and private lands.

The mechanism for maintaining in-stream flows will be enforcement of ODFW in-stream water rights (Table 5). Potential for increased summer flow will be dependent on conservation efforts or shifting water users away from summer withdrawals and toward use of water stored during winter high flow periods. The in-stream water rights do not have priority over some water uses. It is likely withdrawals will increase gradually unless the in-stream water right is modified to cap exempt withdrawals or existing water users are switched to the use of stored water.

Table 5. In-stream water rights in the Yachats River Basin from converted minimum perennial stream flows.

Location	Priority Dates
Yachats River	
mouth to river mile 5.0	7-12-66
mouth to river mile 5.8	3-26-74
river mile 5.8 to 8.8	7-12-66
	3-26-74
North Fork Yachats	
mouth	7-12-66
mouth	3-26-74

In the Yachats River Basin, an additional 5 IWR applications have been filed with the Water Resources Department for consideration. These applications are listed in Table 6.

By law, the Water Resources Department is responsible for monitoring stream flows and regulating junior users in times of shortage. In reality, the Water Resources Department is currently not staffed at the field level with sufficient personnel to adequately monitor in-stream flows. If in-stream water rights are to be of value, district personnel will need to assist the Water Resources Department in prioritizing important sites to be monitored or procuring funding for additional staff.

Table 6. In-stream water right applications in the Yachats River Basin.

Stream	Reach (river miles)	Priority Date
Yachats River		
	0-8.7	3-25-91
	8.7-15.2	3-25-91
No. Fk. Yachats		
Williamson Cr.	0	3-25-91
Earley Creek	0	3-25-91
School Fk.		
unnamed tributary	0	3-25-91

Water Temperature

Altered stream temperatures can result from a variety of land use activities and can have major ramifications for salmonids. Altered water temperatures have been linked to changes in fish survival, growth, reproductive success, migration, interspecific competition, resistance to disease and parasites and overall system productivity (Boechler and McAllister 1992). Elevated temperatures during summer low flow periods are the principal concern identified in mid-coast rivers and streams.

Water temperatures in the Yachats River Basin have been monitored intermittently at various locations. High water temperature does not appear to be as important a limiting factor in the Yachats as it is in adjacent rivers such as the Alsea or Siuslaw. Research has shown that the best salmonid production occurs in streams that remain constantly below 60° F. While salmonids can survive occasional peaks of 70° or more, best production is attained in streams that remain consistently below 64° F. Figures 2 and 3 show water temperature data from 1994. Maintenance of a suitable water temperature regime should be a high priority for habitat management in the Yachats River Basin.

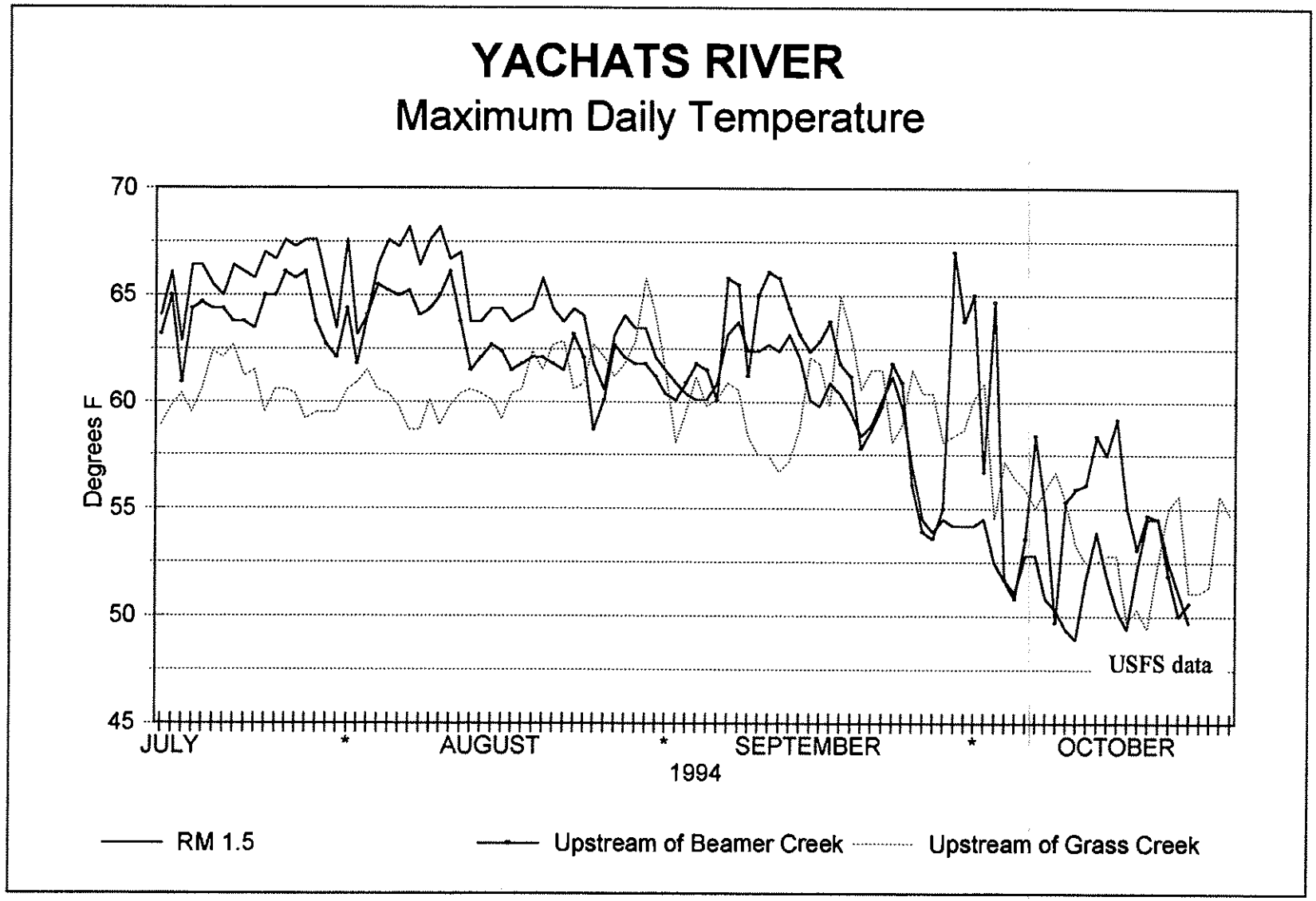


Figure 2. Stream temperatures in the Yachats River, 1994.

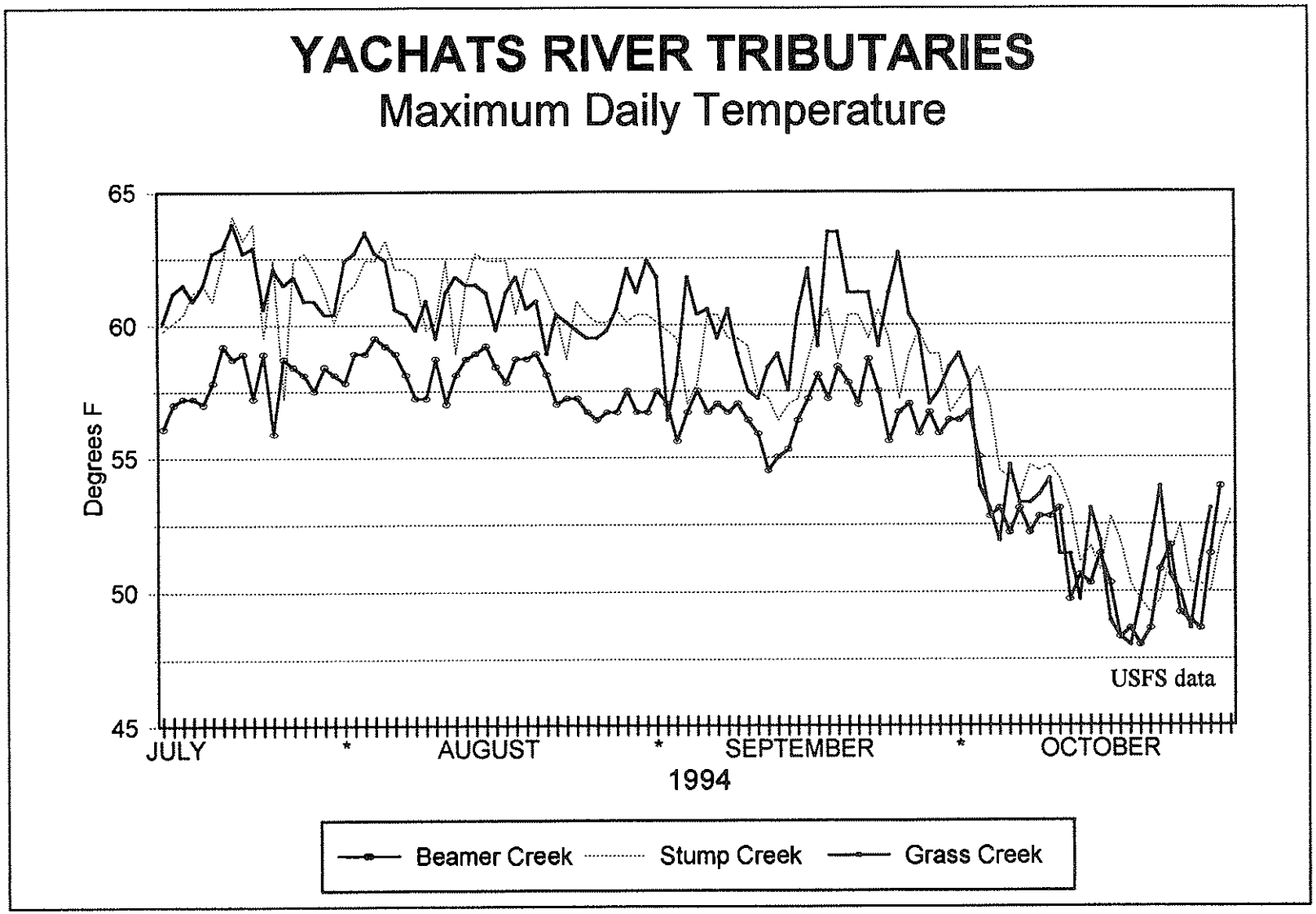


Figure 3. Stream temperatures in Yachats River tributaries, 1994.

Research has determined that increased water temperatures result primarily from exposure of the water surface to the sun. Efforts to prevent excessive summer water temperature will focus on increasing stream shading. In forest lands, the buffer requirements designed to provide large woody debris recruitment should generally be effective at providing stream shading. Loss of stream shade from residential development will be addressed through enforcement of county setbacks that require a 50-foot setback of undisturbed vegetation along the waterway. Efforts will be made to bring non-compliant residences into compliance and all new development will be expected to be consistent with the 50-foot setback.

Agricultural lands appear to be where the most severe depletion of riparian shading has occurred. Efforts will be made to cooperatively work with land owners to increase stream-side shading and to develop standards for agricultural lands that provide waterway protection that is consistent with other land uses in the basins.

Another probable cause of increased stream temperatures is channel widening that results from increased sediment deposition in the stream channel. Sediment deposition in the stream channel forces the flow toward the stream banks which erode, thereby resulting in a wider channel. This can be addressed by controlling the input of sediment into the drainage.

Water temperatures during the spring, winter, and fall probably also have been altered due to reduction in the riparian canopy. These alterations can impact fish by affecting life history characteristics such as egg incubation time. It will, however, be very difficult to understand and control these impacts, so in the Yachats River we will focus on providing riparian conditions needed to insulate against summer temperature increases and hope this is sufficient to address temperature alteration during other time periods.

In-stream Structure

A primary factor that has reduced fish production in all coastal basins is the loss of in-stream habitat provided by large woody material. In-stream large woody debris (LWD) is an essential habitat element for a number of reasons. LWD creates pools and backwater areas that provide slack water refuges during winter high flows and rearing habitat during the summer. LWD also provides nutrient input and traps sediment, including gravel required for spawning.

In-stream structure has been lost because it was removed from stream channels to prevent fish passage problems following logging operations, to prevent jams that trigger floods, damage bridges, or interfere with boat traffic. Additionally, logging of large trees from riparian areas has cut off the primary source of continued recruitment of large woody structure to the stream channels. The situation is aggravated because riparian areas are now dominated by alder rather than conifers which provide a much better and more durable source of in-stream structure.

Table 7 shows reduced LWD volumes in commercial timberlands compared to wilderness areas over broad areas of western Oregon. Surveys in recent years have verified that LWD volume is very low in most areas.

Table 7. Large woody debris in managed and old-growth forest streams in the Oregon coast range (Boechler and McAllister, 1992).

Stream	Large woody debris Frequency (number/mile)	Volume (m^3/mile)	Comments
Old-Growth			
Coos/Coquille tributaries	928	783	Ursitti (1990)
South Fork Drift Creek	-	1,475	Schwartz (1990)
Lobster Creek	317	-	Sedell et al. (1988)
Cummins Creek	352-405	-	Sedell et al. (1988)
Average	541	1,129	
Managed			
Clatskanie River	49	48	
Coast Creek	89	57	
Elliot Creek	112	145	
So. Fk. Wilson River	50	176	
Edwards Creek	80	256	
L. No. Fk. Wilson River	134	402	Good riparian
East Creek	168	485	Beaver activity
Devils Lake Fork	148	627	Debris jam
Deyoe Creek	275	886	Beaver activity
Knowles Creek	18-53	-	Sedell et al. (1988)
Lobster Creek	18-35	-	Sedell et al. (1988)
Average	122	342	

A key action to increase LWD recruitment is the recent Oregon Forest Practices Act (FPA). The FPA should increase conifer retention in buffer strips several fold, which will ultimately provide more in-stream LWD. Recovery will be slow, however, because most conifers in buffer strips are small or riparian zones are dominated by brush and hardwoods. The FPA will also provide flexibility to landowners to convert brush and alder dominated riparian zones to conifers which may result in better fish habitat in the long-term. Hardwoods do provide valuable LWD, but they decay quickly and are not large enough to remain stable in bigger tributaries.

At the local level, ODFW will work with Oregon Department of Forestry and timber operators to educate and emphasize the importance of conifer retention in buffer strips bordering important streams for coho salmon. The ODFW will also coordinate with DOF and private landowners to artificially place LWD in streams with high potential for coho salmon production where logging operations are taking place. These cooperative efforts will be undertaken under the Stream Enhancement Initiative (SEI), a program to implement cooperative fishery improvement projects on private timberlands. This artificial structure placement will not be done as an alternative to natural recruitment of LWD, but will be undertaken to improve fish habitat in the interim until stream-side trees mature and are recruited naturally. Numerous other habitat enhancement projects are being planned by ODFW, USFS, BLM and others to increase LWD in streams. Funding is being provided from a variety of sources, including the Oregon Forest Industries Council, the Fish Habitat and Restoration Program, and several federal grant programs.

The effectiveness of increasing in-stream channel complexity will be evaluated using on-going habitat surveys by ODFW, private timber managers and the USFS. Measurements of vegetation in riparian areas will also be continued to see if conifers and other large trees are becoming more prevalent. This will provide a more immediate indication that we are moving in the desired direction.

Beaver dam pools provide some of the best juvenile coho habitat on the mid-coast (Nickelson et al 1992). Beaver dams provide a rapid fix to the deficiencies in protected pool habitat that is essential for over-winter survival of juvenile coho salmon. Due to their beneficial influence on fish habitat, beaver populations will be encouraged. Some control may still be necessary where damage to road crossings is unavoidable or where plantation damage is severe. The ODFW will recommend that problems with beavers blocking culverts be addressed by modifying the road crossing rather than by trapping the beavers in areas utilized by important fish resources. The ODFW will also recommend that hardwood-to-conifer conversions not be undertaken in stream reaches where important fish populations are found and beaver activity is likely. ODFW will participate in cooperative beaver management planning with forest landowners. The number of pools created by beaver dams is included in most stream surveys.

Sedimentation

Land use activities have generally increased the rate of erosion and sediment input into coastal waterways. Sedimentation can take the form of torrential landslides that scour stream channels and deliver large amounts of sediment in a single event. These slides destroy fish habitat in small streams. They create instability of spawning bars and channel widening with secondary erosion as the sediment flows downstream. In gentle topography, large slides are less prevalent, but flushing rates are low. Surface erosion of fines from roads and exposed soils can degrade spawning areas. The accumulation of sediment in pool habitats results in reduced egg-to-fry survival.

Forestry related roads are the primary source of increased sediment input into waterways. It is essential that roads are managed so they do not induce slides or contribute to surface erosion if fish habitat is to be improved. The degree to which road induced sediment has impacted salmonid habitat in the Yachats River Basin is not well understood. It may range from moderate to severe.

Livestock grazing is another land use that contributes significant volumes of sediments to coastal streams. Frquently, all riparian vegetation is removed from stream banks to enhance grass production by eliminating shade. The lack of root strength from riparian trees, and the activity of the livestock on the stream banks promote excessive bank erosion.

Erosion and increased sediment input from multiple sources spread throughout a watershed act in combination to impact fish habitats downstream. Regulatory mechanisms are currently not available to address these cumulative effects. The 1991 legislature directed the Oregon Department of Forestry to develop methods to address cumulative effects by 1995. These efforts will hopefully provide a basis to assure that multiple small sources of sediment input do not contribute to an overall degradation of fish habitat.

Monitoring to determine if sediment input is being effectively controlled is needed. The methods to do this are currently being developed. Measurement of sediment input from natural and artificial sources should be a top priority for funding.

Evaluation and correction of erosion problems resulting from road systems is an activity that would be beneficial if private forest landowners desire to do cooperative fish enhancement projects. Beneficial actions to reduce risk could include pulling back sidecast, replacing undersized or deteriorated culverts, water-barring cat roads, and closing non-essential roads.

The ODFW generally discourages in-water work because such work frequently destroys fish and wildlife habitat, degrades water quality, and interferes with water-oriented recreation. The ODFW also recognizes that some in-water projects are necessary to meet human needs and that many activities can be conducted with minimal disturbance to the environment. The ODFW has recommended time periods for in-water work that will result in the least damage to fish and wildlife. Preferred time periods may vary in different areas due to different fish populations that could be impacted. The type of activity and method of operation may also influence the preferred work period. The normal recommended time period for in-water work in a particular area in the Yachats River Basin is July 1 to September 15.

Water Quality

Fish habitat in the Yachats River Basin can be influenced by factors such as chemical spills, herbicide spraying and the use of fertilizers. In some cases, a clear link has not been established between the water quality variable and impacts to fish production. Impacts of water quality problems on fish production in the Yachats River Basin will be controlled by

existing water quality laws. The ODFW will also work with the DEQ and other agencies to monitor water quality to assure that standards are met.

Fish Passage

There are no major areas of the Yachats River Basin that are inaccessible to anadromous fish due to artificial blockages. Impassable culverts may prevent adult anadromous fish from reaching some of the small streams. Obstructions to the upstream movement of juveniles is more frequent because of their lesser ability to pass culverts with high velocities. Juvenile steelhead, coho and cutthroat all make seasonal upstream migration patterns so juvenile passage problems may reduce overall production. The Oregon Forest Practices Act requires that all new stream crossings be maintained so they are passable by both adult and juvenile salmonids.The ODFW District is beginning a systematic survey of culverts to identify fish passage problems.

Passage problems at culverts or other structures can be addressed through the SEI program, cooperative efforts on non-forest lands, or by evoking fish passage laws that require passage at all artificial structures be maintained. There is one fish ladder in the Yachats River Basin on Axtel Creek. The ODFW periodically checks ladders to assure they are functioning properly.

Water diversions can also impact fish that are removed from the stream along with the diverted water. ODFW will continue to work with the Oregon Water Resources Department (WRD) and those responsible for water diversions to assure that adequate screening is maintained or installed on these and other diversions that may occur in the future.

Aquatic Habitat Area

Habitat area can be reduced by channelization, diking or by filling. Major areas of loss are diked estuarine areas and sloughs in floodplains used for agriculture. These areas are very productive and contribute to the ability of juvenile salmonids to survive winter flow conditions. Estuarine losses can sometimes be remedied by breaching dikes. Further loss of habitat area from diking and filling is now controlled by strong laws on filling wetlands and waterways.

Aerial photos can be used to evaluate changes in aquatic habitat area over time. The availability of historic aerial photos and time schedules for future photos has not been investigated.

Policies

Policy 1. The Department shall actively pursue and promote habitat protection and improvement necessary to achieve the objectives for management of the basin's aquatic resources.

Policy 2. The Department shall coordinate with and advise landowners and management agencies of the Yachats River Basin.

Policy 3. Habitat protection shall be emphasized over habitat restoration and enhancement.

Policy 4. Potential losses of fish production from habitat alteration shall be prevented or reduced to the extent possible.

Objectives

Objective 1. Maintain or increase in-stream flows during summer low flow periods in the Yachats River Basin.

Assumptions and Rationale

1. Adequate in-stream flows are necessary for fish passage, spawning, and rearing.

2. The ODFW acts as an advisory agency to the WRD, which is responsible for water use regulations.

Actions

1.1 Use flow monitoring at Yachats to evaluate the effectiveness of maintaining stream flows.

1.2 Establish in-stream water rights on additional streams which exhibit fish and wildlife values.

1.3 Attempt to acquire abandoned water rights for in-stream use.

1.4 Request the WRD to strictly enforce ODFW's in-stream water rights.

1.5 Request the WRD to monitor water diversions.

1.6 Track the cumulative volume of water withdrawals in the Yachats River Basin.

1.7 Recommend that new irrigation rights or extended domestic rights not use summer flows below in-stream water rights.

1.8 Support reservoir storage as an alternative to existing water withdrawals.

Objective 2. Reduce summer water temperatures where artificial warming occurs that is detrimental to fish.

Assumptions and Rationale

1. Water quality concerns in the basin are primarily related to high water temperatures.

2. Lack of shading from riparian vegetation has increased water temperatures in the basin.

3. Water temperatures can be monitored using automated temperature recorders.

4. Temperature monitoring will complement existing records and will be used to pinpoint stream reaches where excessive warming is occurring.

5. Temperature monitoring will provide a baseline to evaluate effectiveness at providing cooler summer water temperatures in the future.

Actions

2.1 Implement a comprehensive program to measure stream temperatures throughout the basin in collaboration with private landowners and other agencies.

2.2 Monitor stream temperatures in key areas.

2.3 Increase riparian shading in forested lands through implementation of the Forest Practice Act rules.

2.4 Increase riparian shading in agricultural lands by working cooperatively with land owners to increase stream-side shading.

2.5 Develop standards for agricultural lands that provide waterway protection that is consistent with other land uses in the basins.

2.6 Increase riparian shading in residential or developed areas through enforcement of county setbacks which require 50 feet of undisturbed vegetation.

2.7 Reduce inputs of sediments into stream channels which result in channel widening and greater exposure of the stream channel to warming.

Objective 3. Increase in-stream channel complexity in the Yachats River Basin.

Assumptions and Rationale

1. In-stream channel complexity is necessary for restoring productive populations of coho salmon, winter steelhead, and cutthroat trout.

2. In-stream channel complexity has been severely reduced from historic levels.

3. Conifer trees in the riparian zone are needed to prvide LWD in the future.

Actions

3.1 Measure in-stream levels of natural channel complexity and vegetation in the streamside riparian zone in collaboration with other agencies and landowners.

3.2 Recommend that existing trees in buffer strips that are likely to be recruited to stream channels as large woody debris be maintained during comment on land use activities.

3.3 Identify areas that show high potential for benefiting from input of large woody debris.

3.4 Coordinate with Oregon Department of Forestry, private landowners, and federal agencies to artificially place LWD in streams.

3.5 Encourage beaver populations in stream reaches where beaver dams benefit fish habitat.

3.6 Re-establish conifers in riparian areas where it is possible to do so without removing existing alder and softwood species or trapping beavers to the extent that other beneficial values from the buffer strip are compromised.

3.7 Institute a program to inform landowners about the benefits of leaving LWD in streams.

Objective 4. Reduce artificially accelerated erosion rates and inputs of sediments into waterways in the Yachats River Basin.

Assumptions and Rationale

1. The principal sources of artificially induced sediment input are from the road system and livestock grazing.

2. Sedimentation of spawning and rearing habitat reduces fish production.

Actions

4.1 Consider cumulative sediment input when providing recommendations on land use activities.

4.2 Make recommendations to correct road system problems that contribute to increased erosion and sedimentation of waterways.

4.3 Identify standardized methods to measure and monitor sedimentation rates in stream channels.

4.4 Measure and monitor sedimentation rates in stream channels.

4.5 Report all mass failures on state or private forest lands to ODF and review the ODF report on failures as a basis to improve understanding of mechanisms causing failures.

4.6 Report all mass failures on federal land to the USFS and review the USFS report on failures as a basis to improve understanding of mechanisms causing failures.

4.7 Promote fencing of riparian areas to prevent damage from livestock.

Objective 5. Prevent chemical contaminants from degrading fish habitat in the Yachats River Basin.

Assumptions and Rationale

1. The Oregon Forest Practices Act's "Application of Chemical" rules are adequate to protect fishery habitat from detrimental impacts during herbicide applications on forest lands.

2. The Yachats River Basin Fish Management Plan will not be a forum to refine standards for chemical applications on forest lands.

Actions

5.1 Recommend enforcement of existing water quality standards where detrimental impacts to fishery resources are a concern.

5.2 Recommend that land management agencies or private landowners measure water quality parameters that are important to fish in areas where problems may occur.

Objective 6. Protect natural fish passage conditions in the Yachats River Basin.

Assumptions and Rationale

1. The fish assemblage in the Yachats River Basin will be the most productive if natural passage conditions exist in the drainage.

2. Natural barriers to fish migration will not be altered. Existing fish ladders will be maintained.

Actions

6.1 Inventory culverts and other artificial obstructions that impede passage of juvenile and adult fish in collaboration with other agencies and landowners.

6.2 Pursue measures to correct passage problems associated with culverts, dams, tide gates, and other artificial obstructions where benefits exceed costs.

Objective 7. Increase habitat area available to fish in the Yachats River Basin.

Assumptions and Rationale

1. Fish habitat can be lost due to channelization, diking or filling of natural waterways.

Actions

7.1 Evaluate historic and existing aquatic habitat areas.

7.2 Implement programs to measure changes in aquatic habitat areas over time.

7.3 Identify high priority habitats (spawning areas, etc.) which should be protected from waterway alterations.

7.4 Make recommendations to prevent channelization of streams and rivers.

7.5 Make recommendations to prevent diking of wetlands and estuaries.

7.6 Make recommendations to prevent the filling of estuaries.

7.7 Pursue measures to restore historic habitat areas lost due to channelization or diking where fishery benefits are high.

Objective 8. Coordinate with other agencies and landowners to implement habitat protection and restoration activities.

Assumptions and Rationale

1. ODFW has authority for direct fish management activities, but must coordinate with land managers to integrate fish management activities with habitat management.

2. Most mid-coast basins have land management responsibility that is controlled by multiple jurisdictions.

Actions

8.1 Communicate with land management entities so habitat and fish management activities are integrated.

FALL CHINOOK SALMON

Background

Fall chinook salmon are native to the Yachats River Basin. Important spawning habitat for fall chinook is found in the mainstem Yachats River and North Fork. There is no hatchery program for fall chinook in the Yachats River Basin.

Status

The Yachats River Basin contains a small population of wild fall chinook. The number of chinook present is relatively low compared to sub-basins of similar size. It is thought that fall chinook in the Yachats River Basin are limited by the small amount of estuarine rearing habitat available.

Insufficient information is available to describe the trend in Yachats River Basin fall chinook salmon. Spawning surveys were conducted the past two years (1993 and 1994) by ODFW and volunteers to begin evaluating trends in escapement. Only 75 and 61 chinook were counted (total count) in these two years respectively. Because of difficult viewing conditions, these two counts are probably low. However, it did not appear that there were large numbers of chinook spawning in the Yachats system these two years.

There is a fishery on fall chinook in the Yachats River at the present time. The trend in catch of fall chinook appears to have been increasing since 1975, following the trend of most other fall chinook populations on the Oregon Coast (Figure 3).

Life History Characteristics and Habitat Needs

Adult fall chinook enter the system primarily during October and November. Peak spawning occurs during November.

Juvenile fall chinook rear primarily in the main stem and estuary. Juveniles enter the ocean in their first year of life from mid-summer through October.

Concern exists that increased timber management activity in the upper basin could create siltation and land slides which reduce gravel bar quality and stability in spawning areas used by fall chinook. Care is needed to assure that land use activities do not result in cumulative degradation of the spawning habitat.

Angling and Harvest

There is no direct information on where Yachats fall chinook are caught in ocean fisheries, but based on observations in nearby rivers it is thought to be off the Canadian and Alaskan coasts.

The in-river catch of fall chinook in the Yachats River Basin has been about 30 to 40 fish in most recent years. The trend of the catch appears to be increasing since 1975. (Figure 3). This is consistent with the trend of abundance of fall chinook in adjacent mid-coast rivers. Angling for chinook is permitted up to the confluence of the North Fork Yachats River.

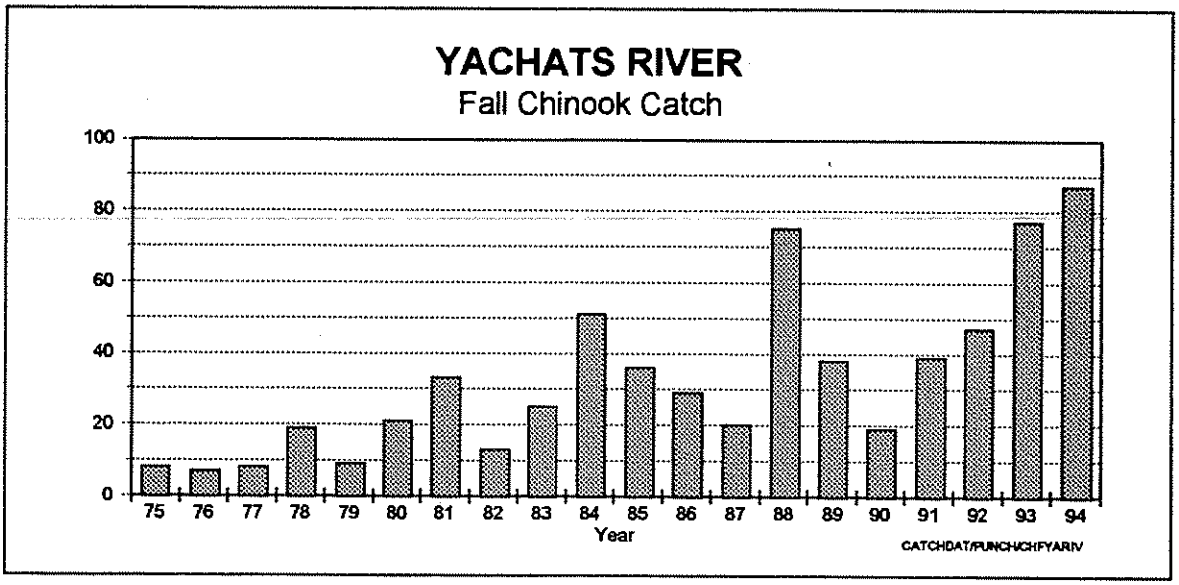


Figure 3. Punchcard estimates of fall chinook catch in the Yachats River.

Management Considerations

Despite the apparent increasing trend in the fall chinook population as indicated by the sport catch, it appears likely that the fall chinook escapement in the Yachats River Basin has been below 300 fish in the past few years. Three hundred spawners is generally considered the minimum number of spawners necessary to maintain the genetic resources of a population (ODFW WFMP). It would, therefore, be contrary to ODFW policy to continue to harvest fall chinook in the Yachats River Basin unless it is determined that the population is above the minimum population size.

Some members of the Yachats River Basin Steering Committee felt that chinook were being over harvested and that significant illegal harvest was occurring. While data to support these allegations do not exist, it appears prudent to recommend vigorous enforcement of all regulations in light of the apparently small size of the fall chinook population.

Fall chinook salmon in the Yachats River Basin will be managed for wild production only, as specified in the Coastal Chinook Salmon Plan (ODFW 1991). Management activities are directed toward improvement of inventory, monitoring methods and habitat protection.

Policies

Policy 1. Fall chinook in the Yachats River Basin shall be managed for wild production only.

Objectives

Objective 1. Achieve spawning escapement of at least 300 spawners.

Assumptions and Rationale

1. A spawning population of at least 300 spawners is needed to maintain the genetic stability of the Yachats fall chinook population.

2. Available data indicate there are probably fewer than 300 fall chinook spawners.

3. Ocean survival of fall chinook smolts will be similar to past years.

4. Harvest of fall chinook in ocean fisheries will remain similar to recent years.

5. Accomplishment of watershed habitat protection objectives will be successful.

Actions

1.1 Develop an information base and methodology for measuring and monitoring fall chinook in the Yachats River Basin over the next five years.

1.2 Continue to do extensive spawning surveys throughout the basin for several years to determine spawning distribution of fall chinook.

1.3 Establish standard spawning surveys for long-term monitoring of fall chinook escapement.

1.4 Propose closure of the fishery on fall chinook until the spawning population is shown to be over 300 spawners.

1.5 Initiate a sampling program to monitor juvenile fall chinook population numbers and distribution.

Objective 2. Provide an opportunity to harvest an average of 40 fall chinook in the in-river fishery.

Assumptions and Rationale

1. The escapement objective has precedence over the fishery objective.

2. Favorable ocean conditions for fall chinook production will continue.

3. The average catch of fall chinook during 1981-93 was about 39 fish, based on punchcard estimates.

Actions

2.1 Maintain existing angling regulations if the escapement objective is consistently met.

2.2 Support vigorous enforcement of harvest regulations to minimize illegal harvest of fall chinook in the Yachats River.

2.3 Continue to monitor harvest with punchcard estimates.

CHUM SALMON

Background

Chum salmon are occasionally observed in the Yachats River. Historically, the distribution of chum salmon along the Pacific coast has ranged from the Sacramento River in California north to the Arctic Ocean (Groot and Margolis 1991). Currently, the central Oregon coast is the southern extent of self-sustaining chum populations. While chum salmon occur in greater numbers in coastal streams to the north, few are observed in streams and river systems south of the Alsea River. There are no hatchery releases of chum salmon in the Yachats River Basin.

Status

Chum salmon are listed by the state of Oregon as a sensitive species because of small run sizes and statewide declines in abundance. It is unknown if chum salmon in the Yachats River Basin constitute a self-sustaining population, or are strays from other river basins. If a viable population of chum salmon exists in the Yachats River Basin, it is very small in size.

Life History Characteristics and Habitat Needs

Adult chum salmon generally return to spawn in Oregon from October to December (Henry 1954). Chum salmon are not very adept at passing barriers. Maintaining easy upstream passage for adults is essential.

Chum salmon spawn in lower portions of stream systems. Erosion in the basin often contributes sediment that is deposited or creates instability on gravel bars used by spawning chum.

Juvenile chum salmon rear only a very short period of time in freshwater before migrating downstream into the brackish water of the estuary. Estuarine rearing areas include shallow side channels, many of which have been lost due to dikes and tidegates. Juveniles smolt and migrate to the ocean in late spring or early summer.

Angling and Harvest

All angling for chum salmon is prohibited in the Yachats River Basin.

Management Considerations

Chum salmon are listed as a sensitive species statewide. Chum salmon are occasionally observed in the Yachats River. It is unknown if chum salmon in the Yachats River Basin constitute a self-sustaining population, or are strays from other river basins. If a viable population of chum salmon exists in the Yachats River Basin, it is very small in size.

Policies

Policy 1. Chum salmon in the Yachats River Basin shall be managed for natural production only.

Objectives

Objective: Determine if a self-sustaining natural population of chum salmon exists in the Yachats River Basin.

Assumptions and Rationale

1. A minimum of 300 adults is needed to maintain genetic fitness in a population.

2. Fish populations on the edge of their species range have an increased risk of extinction.

3. Accomplishing the habitat protection and restoration objectives will generally provide the habitat necessary to support chum salmon populations.

Actions

1.1 Monitor chum salmon escapement by recording observations of chum salmon on chinook spawning surveys.

1.2 Conduct additional exploratory spawning surveys in the tidewater tributaries containing potential chum spawning habitat in the Yachats River Basin.

COHO SALMON

Background

Coho salmon are native to the Yachats River Basin. Coho are widely distributed in low and medium gradient streams throughout the basin (Figure 4). There is no hatchery program for coho salmon in the Yachats River Basin.

Status

Wild coho are currently a major concern because they are severely depressed in some coastal areas and are being petitioned for coastwide listing under the Endangered Species Act. The concern over conservation of wild coho has created the necessity to sharply restrict ocean and freshwater salmon fisheries and has been a major consideration in developing revisions to the Oregon Forest Practices Act.

Table 10. Number of coho salmon observed in randomly selected surveys in the Yachats River Basin

Year	Survey	Survey length (mi)	# Times Surveyed	Total Coho Observed
1990-91	Helms Cr.	1.10	14	none
	Beamer Cr.	0.80	15	6 Adults
1991-92	Marks Cr.	0.60	10	none
	Fish Cr.	1.20	10	2 Adults
1992-93	Schoolfork Cr.	0.95	15	13 Adults, 3 Jacks
	Beamer Cr.	0.80	14	5 Adults
1993-94	Keller Cr.	1.10	14	5 Adults, 1 Jack
	N. Fk. Yachats	1.28	10	20 Adults
	N. Fk. Yachats	0.94	10	14 Adults, 1 Jack
	Axtel Cr.	0.66	14	8 Adults, 2 Jacks
	Carson Cr.	1.15	14	none
1994-95	Yachats (mainstem)	1.00	9	1 Adult
	N. Fk. Yachats	1.44	10	3 Adults
	Stump Cr.	0.62	13	4 Adults
	Keller Cr.	1.10	13	none
	Fish Cr.	1.20	11	none
1995-96	Bend Cr.	1.10	11	none
	Neiglick Cr.	0.37	9	none
	Grass - Lower	0.96	11	7 Adults
	Grass - Upper	0.89	11	9 Adults, 2 Jacks
1996-97	S. Fk. Yachats	0.86	14	18 Adults
	Stump Cr. Trib. A	1.0	13	2 Adults
	Bend Cr.	1.1	14	none
	Beamer Cr.	0.80	14	3 Adults

The Yachats River has approximately 44 miles of coho habitat. This represents about 3% of the total coho production habitat on the Oregon coast. The total annual run of coho returning to the Yachats River Basin in recent years has been estimated to be less than 1,000 fish. In the 1992-93 spawning year the run size was estimated to be only 400 coho. Table 11 gives the estimated spawning counts in the two standard index counts (Williamson Creek and School Fork). Figure 5 shows the peak count trends from 1951 - 1993.

Table 11. Estimated numbers of spawning coho in the Yachats River Basin based on numbers observed in the School Fork and Williamson Creek Standard Spawning Surveys.

Year	Williamson Creek (1.3 mi)	School Fork Creek (0.7 mi)	Average Fish per mile[a]	Population Estimate[b]
1981	2[c]	2[c]	2.0	118
1982	3[c]	8	6.5	384
1983	7	2	4.5	266
1884	14[c]	7[c]	10.5	620
1985	28	15	21.5	1,269
1986	18	23	20.5	1,210
1987	21	6	13.5	797
1988	7	28	17.5	1,033
1989	5	5	5.0	295
1990	1	5	3.0	177
1991	1[c]	1[c]	1.0	59
1992	14	13	13.5	797
1993	9	3	6.0	354
Average	10	9.1	9.6	568

[a] Calculated by dividing sum of fish by sum of miles

[b] Based on 44 miles of suitable spawning habit (Cooney and Jacobs 1992) and the assumption that spawning surveyors observe 75% of the fish present (Solazzi 1984)

[c] Unofficial estimate. Number of distribution of observations did not meet standard AUC methodology as described by Cooney and Jacobs (1995).

Figure 4. Distribution of Coho Salmon in the Yachats River Basin

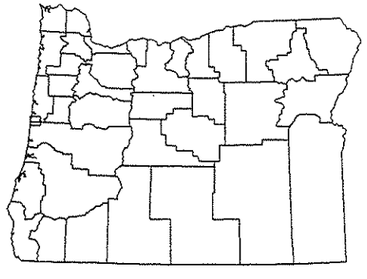
COHO DISTRIBUTION YACHATS RIVER BASIN

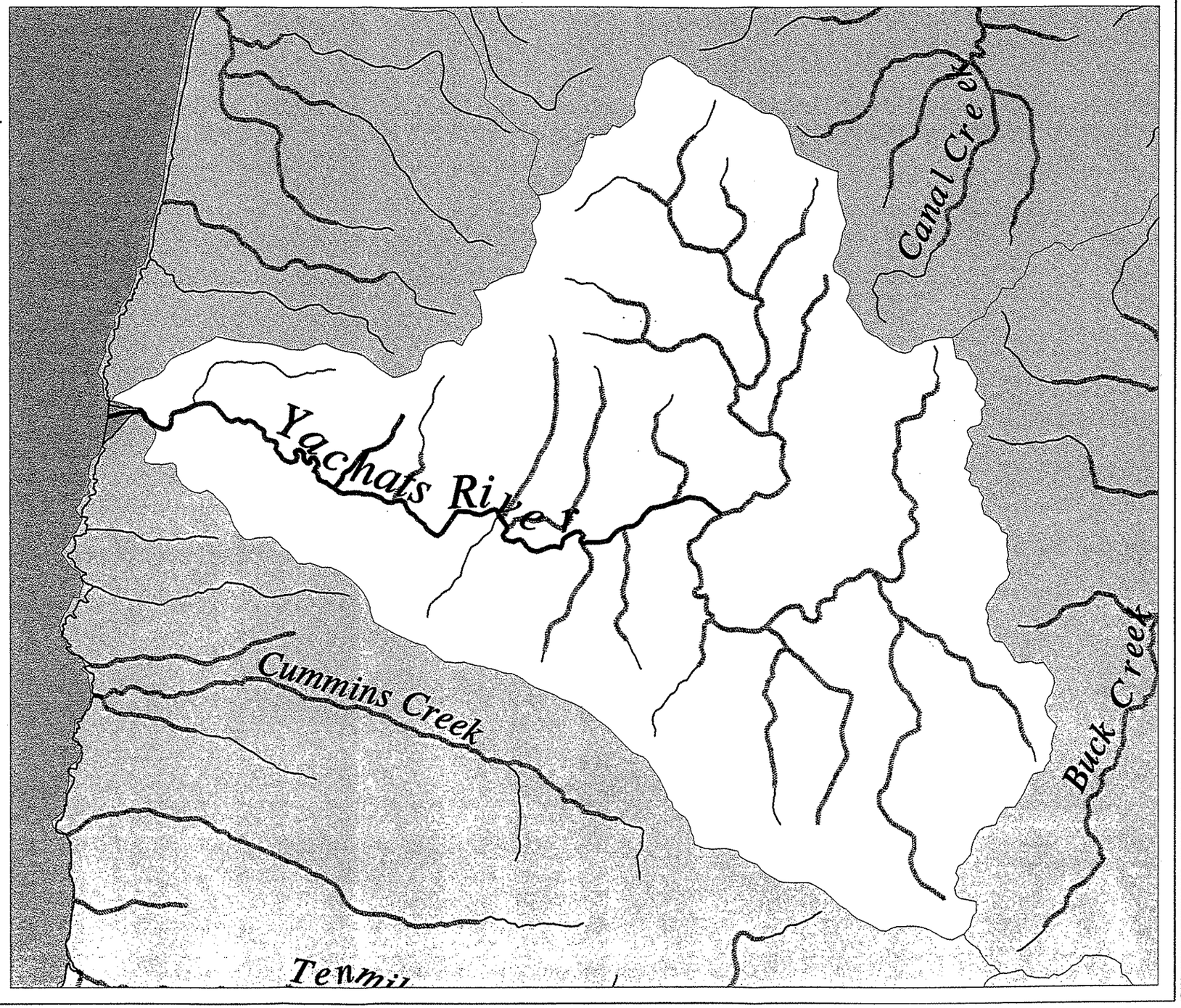
- Spawning & Rearing
- Rearing Only
- Migration Routes & Fish Presence
- Fish Hatchery
- Barrier to Migration

MI
0 2 4

OREGON Fish & Wildlife

Location





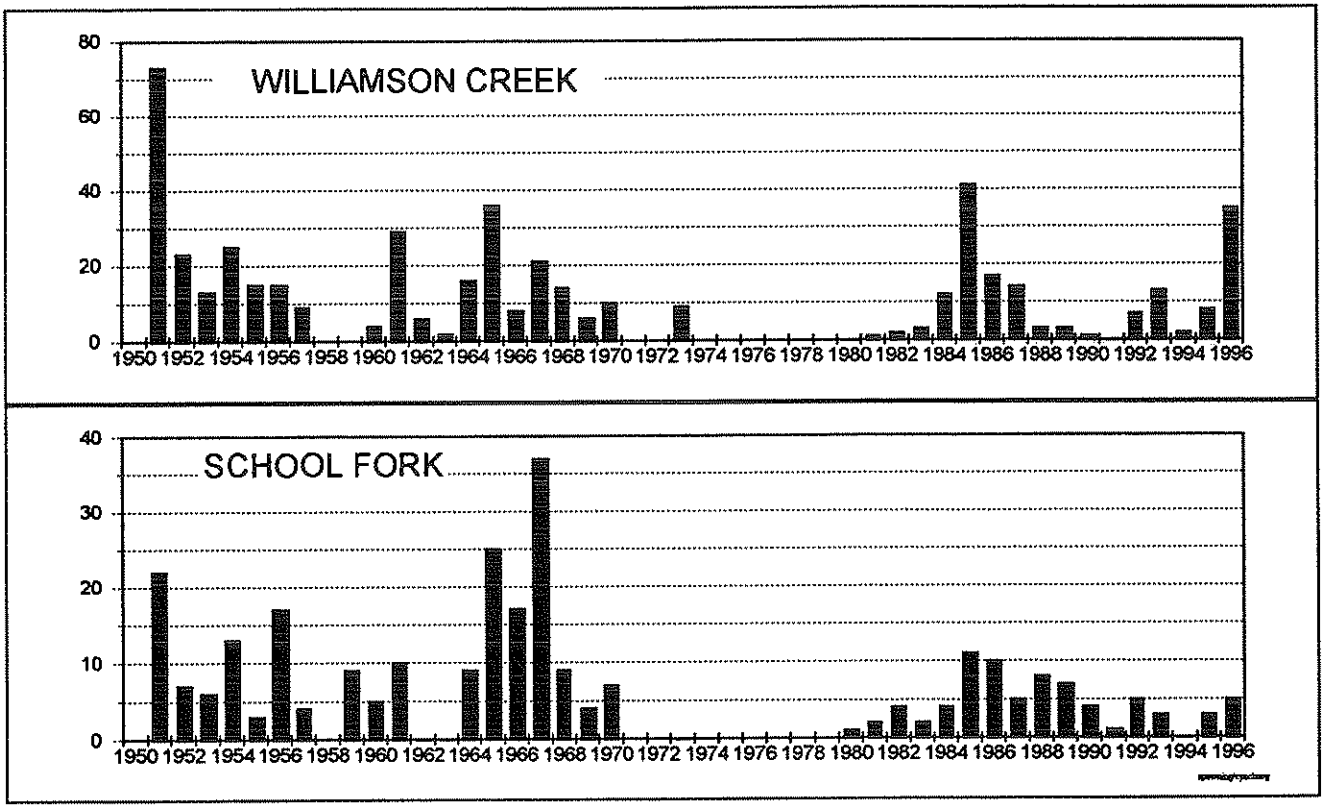


Figure 5. Peak counts of adult coho in Yachats standard surveys.

Coho escapement goals for Oregon coastal rivers are currently based on an aggregation of all coastal streams from the Coquille to the Necanicum for the purpose of managing mixed stock ocean fisheries. These goals are being reviewed due to the severe coho conservation problem and because new research verifies that estimates of coho escapement used to develop the goals are highly inflated. It is likely that these escapement goals will be modified in the near future through action related to the Endangered Species petition, actions by the Pacific Fishery Management Council or the ODFW Commission.

Life History Characteristics and Habitat Needs

Coho salmon return to spawn in the Yachats River Basin in the fall and winter. Spawning occurs in low and medium gradient tributary streams in November through February.

Fry emerge in the spring and rear in backwater areas and stream margins (Nickelson et al. 1992). Juvenile coho need streams of low gradient and velocity. They are found mostly in pools. Research has shown that beaver ponds and complex pools with large quantities of wood hold the highest number of juvenile fish.

Winter habitat is a critical factor for coho. Winter habitat must provide refuge for juveniles from high stream velocities. Typical refuge areas include backwaters behind beaver ponds, log jams, sheltered side channels and backwaters. Winter habitat also must provide food and cover from predators.

Coho smolts migrate to the ocean in the spring after rearing one year in freshwater. After the first summer in the ocean, a small proportion of the males attain sexual maturity and return to spawn as 2-year-old jacks. Most of the coho remain an additional year at sea before returning to freshwater to spawn at age 3 and an average size of about 8 pounds.

Habitat Restoration Activities

The highest priority for habitat restoration in the Yachats River Basin is coho salmon. Stream reaches that should be targeted for habitat restoration work include the Yachats River, Beamer Creek, the North Fork Yachats and its tributaries Fish Creek and Williamson Creek (Appendix Table A-1). Specific sites and activities for restoration should be targeted in cooperation with private timber owners. Habitat surveys will provide information to determine where habitat restoration should occur and baseline information to determine the effectiveness of these efforts.

The following activities are recommended for restoration of coho salmon in the Yachats River Basin.

1. Place structure in bedrock areas. Increased in- stream structure will provide winter habitat, a likely factor limiting coho production. In-stream structure should be placed in stream reaches in low gradient floodplain areas to get the most benefit. These sites could be identified from stream habitat surveys and topographic maps. Projects of this type could frequently be implemented cooperatively during logging operations.

   Increased in-stream structure can also result from correcting culverts that are chronically plugged by beavers. Correcting these culverts alleviates the need to trap beavers. This in turn results in more beaver dams which provide excellent juvenile coho habitat.

   In-stream structure placement would also benefit winter steelhead and to a lesser degree cutthroat trout.

2. Plant conifers in riparian areas. This action is recommended where there is currently an absence of riparian tree cover. Benefits include shading the stream and cooling the water as well as ultimately providing a source of large woody debris to the stream. It is not desirable to remove hardwood tree species in order to establish conifers. This will cause a short-term reduction in habitat quality, which is the timeframe that is of greatest concern with coho salmon given their very depressed status.

Angling and Harvest

Yachats River Basin coho salmon contribute primarily to ocean fisheries from the central Oregon coast to northern California. The overall exploitation rate on coho in the ocean fishery has averaged about 80% from 1970-83 and 50% since 1983.

The in-river harvest of coho averaged about 50 fish during 1970-92 (Figure 6). In 1992 the Yachats River was closed to harvest of coho for six years at the request of local residents. In 1993 emergency regulations were enacted to close coho harvest on most coastal watersheds to increase spawning escapement.

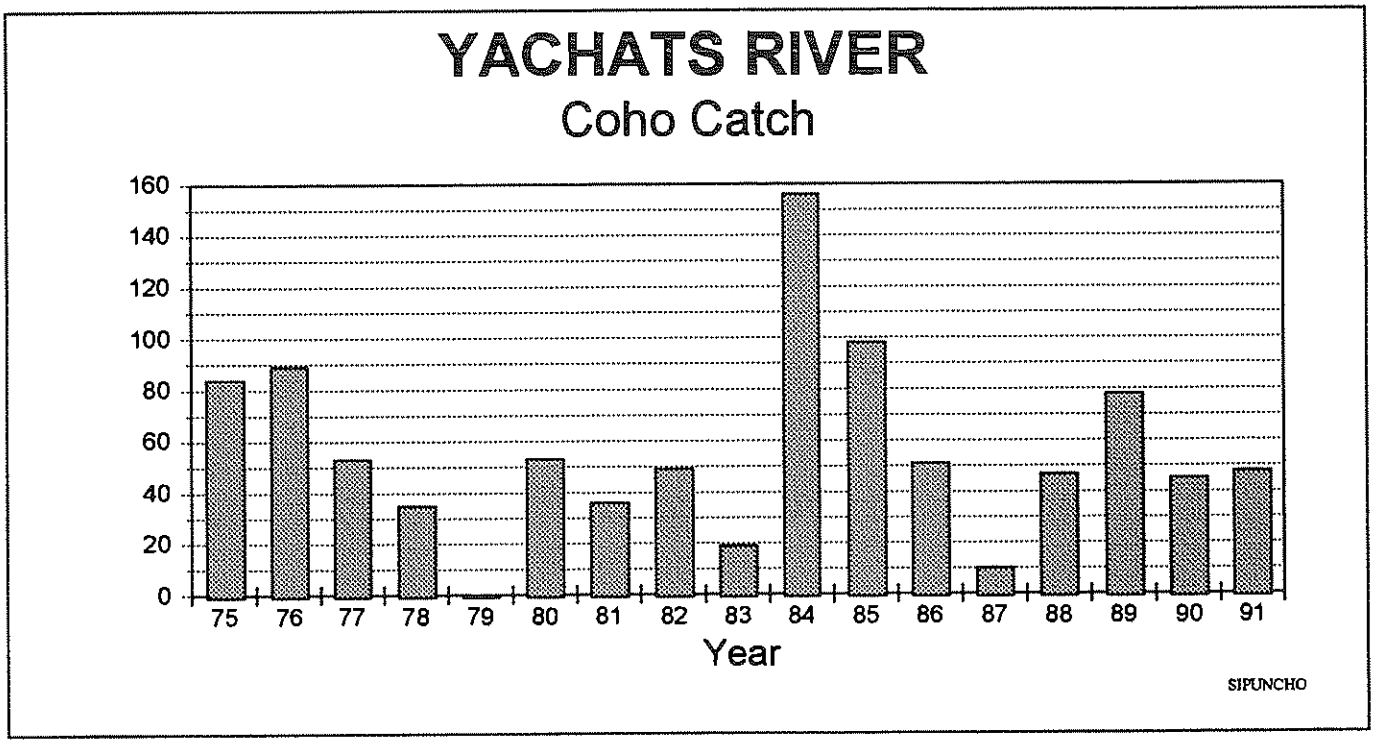


Figure 6. Sport catch of coho in the Yachats River 1975 - 1991.

Escapement Goals

The ODFW Coho Plan gives direction that coho salmon in Oregon coastal streams will be managed primarily to maximize natural production (ODFW 1982). Maximizing natural production requires that there are enough adult spawners to fully seed the freshwater habitat. The most relevant research information available indicates that about 40 adult spawners are required to fully seed typical coho habitat (Beidler et al. 1980). For this reason an overall escapement of 40 coho spawners per mile is proposed for the Yachats River Basin.

While the plan states specific goals for numbers of spawners, it also recognizes that there will be a high degree of variability between individual streams, stream reaches, and

between years. Some streams or stream reaches will have more spawners because they have concentrations of spawning gravel, or because the associated rearing habitat is above average. Conversely, other areas of poorer quality spawning and rearing habitat would be expected to have fewer spawning fish. Evaluation of the data in terms of achieving the escapement goals will involve a synthesis of average densities of spawners between stream reaches, between years, and looking at trends and other pertinent information. Because of this high variability, the two existing standard spawning surveys are not sufficient to adequately characterize the trends in spawning escapement within the Yachats River Basin.

In addition to the escapement objectives, the plan proposes a freshwater juvenile coho abundance objective. The freshwater density of juvenile coho will provide a further reference point to evaluate progress of recovery of the coho populations and the effectiveness of the spawning population in providing full seeding of the available habitat.

A density in late summer of 1.5 coho per square meter is considered to be an approximate density indicative of full juvenile seeding. The juvenile seeding measurements will serve as a check on habitat quality and the appropriateness of the adult escapement objective.

Management Considerations

Coho salmon in the Yachats River Basin will be managed for wild production only. Hatchery coho can be used only for specific restoration objectives. Spawning populations will continue to be monitored. Achieving the habitat objectives outlined in the Habitat chapter will enhance the productivity of coho salmon. Natural production may provide for ocean and in-river fisheries in the future.

Resumption of an in-river fishery on coho will be considered when significant progress has been made toward achieving full seeding as indicated by significant increases in spawning escapement for several consecutive years or by indications that freshwater rearing habitats are approaching full seeding.

Policies

Policy 1. The Yachats River Basin shall be managed for production of wild coho salmon.

Objectives

Objective 1. Provide an average annual wild coho spawning escapement in the Yachats River Basin of 40 fish per mile of juvenile coho salmon rearing habitat.

Assumptions and Rationale

1. Coho salmon in the Yachats River Basin are severely depressed from historic levels.

2. Ocean conditions in the next 5-10 years must improve to levels experienced during 1977-90.

3. This escapement goal is consistent with estimates of spawners needed to adequately seed rearing habitat (Beidler et al. 1980).

4. This escapement goal is consistent with the intent of the escapement objective for wild coho salmon in coastal basins stated in the Coho Salmon Plan (ODFW 1982).

5. Achieving this goal for the Yachats River Basin will be a consideration, but not a singular constraint, on mixed-stock ocean fisheries.

6. Ocean fisheries targeting finclipped hatchery coho salmon will be in place by 1998. This will allow harvest rates on wild coho to be maintained at low levels.

7. Beaver populations will continue to provide habitat that is essential for over-winter survival of juvenile coho salmon in some stream reaches.

8. The absence of in-stream habitat complexity created by large woody material and the lack of large conifers in riparian areas necessitates that large woody structures be artificially placed in some stream reaches to provide productive coho habitat.

9. The production level that Yachats River Basin coho salmon will achieve given improved habitat conditions, reduced interaction with hatchery fish, and adequate fishery escapement cannot be accurately predicted.

Actions

1.1 Continue to monitor escapement annually in the 2 standard survey areas in the Yachats River Basin.

1.2 Systematically survey potential coho habitat throughout the Yachats River Basin to prioritize protection and restoration needs and provide baseline information to evaluate the effectiveness of these efforts. Use this information to refine estimates of stream miles that are suitable habitat for coho salmon.

1.3 In review of land use activities, give emphasis to providing comment on land use activities that may impact important habitats for coho salmon.

1.4 Develop and seek funding for proposals to restore coho salmon habitat by artificially placing LWD in stream channels, creating backwater areas, and improving upstream

passage in tributaries with high potential for improved coho production. Implement habitat restoration projects designed primarily to increase coho production.

1.5 Recommend to forest landowners that during timber harvest operations along important coho salmon streams that they voluntarily improve coho habitat under the Stream Enhancement Initiative Program.

1.6 Recommend to landowners that beavers are managed so habitat benefits for coho salmon are achieved.

1.7 Restrict all recreational angling for coho salmon within the Yachats River Basin until substantial increases in production and escapement occur.

Objective 2. Achieve an average summer juvenile coho salmon seeding level of at least one fish per square meter of pool habitat in streams suitable for coho production.

Assumptions and Rationale

1. Juvenile coho densities of at least 1 fish per meter squared of pool habitat are indicative of full seeding.

2. An adult spawning escapement of 40 adults per mile, as stated in Objective 1, should fully seed juvenile rearing habitat.

Actions

2.1 Conduct annual surveys of juvenile coho salmon to determine density and distribution in the basin.

2.2 Based on the results from coho adult spawning surveys and juvenile surveys, evaluate the appropriateness of the adult spawner goal and refine if warranted.

Objective 3. Recover Yachats River Basin wild coho salmon sufficiently to allow an in-river fishery on wild coho.

Assumptions and Rationale

1. Escapement levels for coho in the Yachats must return to levels above minimum escapement before any in-river harvest is permitted.

Actions

3.1. Consider opening fisheries for wild coho salmon in the Yachats River Basin if wild coho spawner abundance is anticipated to be at least 40 adults per mile as measured in random spawning surveys.

3.2 Adjust angling regulations to allow for continual progress toward or maintenance of the escapement objective.

WINTER STEELHEAD

Background

Winter steelhead are native to all basins along the Oregon coast, including the Yachats River Basin. Good production areas are found in large, high gradient streams with good water quality. Hatchery steelhead have not been stocked in the Yachats River Basin since the mid-1950s.

Status

Wild winter steelhead in the Yachats River Basin are depressed and are currently being reviewed along with other coastal steelhead for listing under the Endangered Species Act.

Factors that have contributed to the decline in the returns of wild steelhead include unfavorable ocean conditions for smolt survival since about 1985. Other factors are increased predation by marine mammals or birds. Inland sport fisheries also could have contributed to the decline. Freshwater habitat conditions have deteriorated. Genetic alteration of wild steelhead due to interbreeding with hatchery steelhead as well as competition in freshwater with juveniles from hatchery spawners may also be contributing to the decrease in wild runs.

Although hatchery fish have not been stocked directly in the Yachats River Basin in recent history, a large percentage of the steelhead adults are stray hatchery fish. Kenaston (1989) estimated that the 1981-85 total run of winter steelhead in the Yachats River Basin was about
750 fish, about 350 (46%) of these were of hatchery origin. In 1990, 44% of the steelhead observed in the Yachats River were hatchery strays. Data indicate that most of the stray hatchery fish are Alsea stock fish which were stocked in the Siuslaw Basin.

The high stray rate puts Yachats River Basin steelhead in jeopardy of interbreeding with potentially less fit non-native Alsea stock hatchery fish. Because of the high stray rate of hatchery fish into the Yachats River Basin, the Yachats population of winter steelhead is out of compliance with the Wild Fish Management Policy.

Life History Characteristics and Habitat Needs

Winter steelhead generally return to freshwater to spawn beginning in November, with the majority returning in January through March. Winter steelhead spawn mostly in tributary streams, primarily from January through April. Steelhead prefer clean gravel for spawning.

Compared to other salmonids in the basin, juvenile steelhead prefer stream reaches with high gradient and velocity. Young-of-the-year fry are usually found in riffles or in pools near the base of riffles (Barnhart 1986).

Yearling steelhead require deeper pools with enough cover to avoid predation and enough current velocity to supply drifting food items. Yearling and adult steelhead often use white water and turbulence as cover.

Another important habitat requirement of juvenile steelhead is winter refuges where the fish can avoid being swept downstream by winter floods. Large woody debris is an important component in steelhead habitat, both from the standpoint of serving as cover and of creating pools.

Generally after 2-3 years of freshwater residence, juveniles smolt and migrate to the ocean in the spring. Steelhead usually remain in the ocean 1-3 years before returning to freshwater to spawn. Steelhead may survive their first spawning migration and spawn a second or third time, although repeat spawning is relatively rare.

Habitat Restoration Activities

The second highest priority for habitat restoration in the Yachats River Basin is winter steelhead. Stream reaches that should be targeted for habitat restoration work include Beamer Creek and the North Fork Yachats River and its tributaries, Fish Creek and Williamson Creek (Appendix Table A-1). Specific sites and activities for restoration should be targeted in cooperation with private timber owners. Customized restoration measures to fit the particular needs of individual tributaries will be developed after on-site inspections and surveys are completed. Habitat surveys will provide information to determine where habitat restoration should occur and baseline information to determine the effectiveness of these efforts.

The following activities are recommended for restoration of winter steelhead in the Yachats River Basin.

1. Place structure in bedrock areas or other areas lacking structural complexity. Projects of this type could frequently be implemented cooperatively during logging operations.

   The overall benefits provided by in-stream structure placement could be evaluated by comparing amounts of in-stream structure identified in recent habitat surveys with amounts measured during similar surveys in the future. In-stream structure placement would also benefit coho salmon and, to a lesser degree, cutthroat trout.

2. Plant conifers in riparian areas. This action is recommended where there is currently an absence of riparian tree cover. Benefits include shading the stream and cooling the water as well as ultimately providing a source of large woody debris to the stream. It is generally not desirable to remove hardwood tree species in order to establish conifers. This will cause a short-term reduction in habitat quality, which is the timeframe that is of greatest concern with coho salmon given their very depressed status.

Angling and Harvest

Punchcard catch estimates for 1967-91 show a declining trend in harvest in the Yachats River Basin (Figure 7). The decline in catch is probably indicative of a comparable decline in overall run size. Current angling regulations require that all non-finclipped steelhead must be released.

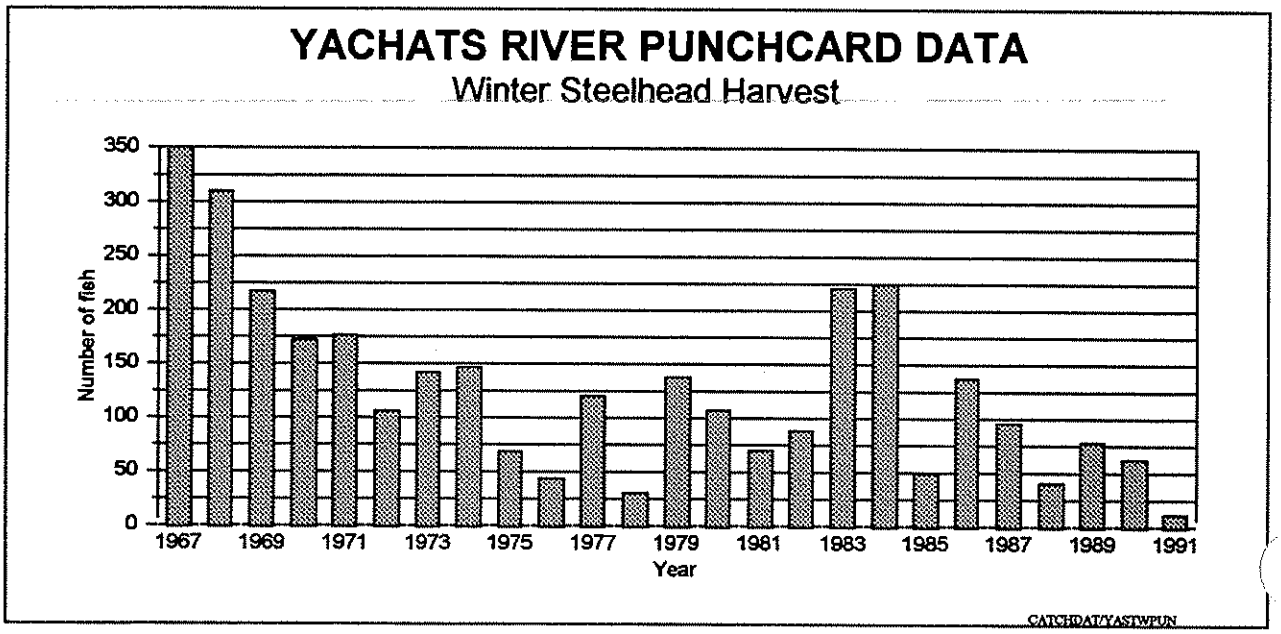


Figure 7. Estimated winter steelhead harvest in the Yachats River, 1967 - 1991, based on punchcard data.

Management Considerations

Winter steelhead in the Yachats River Basin will be managed for wild production only. The large proportion of hatchery strays found in the basin should be reduced to bring the basin into compliance with the Wild Fish Management Policy by modifications to the hatchery program for winter steelhead in the Siuslaw Basin. Habitat protection and enhancement measures, outlined in the Habitat chapter, will enhance the productivity of winter steelhead in the basin. Angling regulations that require the release of all non-finclipped steelhead have been implemented.

Policies

Policy 1. The Yachats River Basin shall be managed for wild production of winter steelhead.

Objectives

Objective 1. Increase production of wild winter steelhead.

Assumptions and Rationale

1. Insufficient information is available to establish accurate production and escapement objectives for wild winter steelhead in the Yachats River Basin. If the Oregon Plan adopts interim escapement goals, they will be used until sufficient information is available to establish accurate production and escapement objectives for the basin.

2. Accomplishing habitat protection and restoration objectives will improve stream conditions for winter steelhead and result in increased production.

3. Bringing mid-coast hatchery programs into compliance with the Wild Fish Management Policy will protect the genetic resources of wild winter steelhead in the basin and result in increased productivity.

4. Catch-and-release angling regulations for wild winter steelhead will increase escapement and production.

Actions

1.1 Accomplish the habitat management objectives in this plan.

1.2 When reviewing proposals for land use activities and development, give emphasis to important winter steelhead production areas.

1.3 Continue angling regulations requiring the release of all naturally produced steelhead in the Yachats River Basin.

1.4 Determine the proportion of hatchery steelhead in the spawning population. Take corrective action if necessary.

Objective 2. Develop an information base and methodology for measuring and monitoring wild winter steelhead in the Yachats River Basin over the next five years.

Assumptions and Rationale

1. Comprehensive information on wild Yachats winter steelhead is not available.

2. Estimating escapement of wild steelhead using angler creel data will no longer be possible because of wild fish release regulations.

Actions

2.1 Implement adult winter steelhead spawning surveys in likely high spawning density areas.

2.2 Establish standardized methods to measure trends in escapement of wild steelhead.

2.3 Conduct inventories for juvenile steelhead in areas throughout the Yachats River Basin.

2.4 Consider measuring juvenile winter steelhead production as a method for monitoring wild production.

2.5 Make estimates of winter steelhead spawning escapement based on results from adult and juvenile surveys.

Objective 3. Provide catch-and-release angling opportunities for wild winter steelhead in the Yachats River Basin.

Assumptions and Rationale

1. Catch-and-release angling opportunities will complement consumptive fisheries targeting hatchery steelhead in other areas.

Actions

3.1 Maintain appropriate angling regulations providing for catch-and-release fisheries.

CUTTHROAT TROUT

Background

Cutthroat trout are distributed widely throughout all Oregon coastal basins, including the Yachats River Basin.

Status

Oregon Department of Forestry (DOF) studies were conducted during the summer of 1993 to determine the upstream distribution of gamefish. In coastal streams, cutthroat trout are consistently the gamefish species with the widest distribution. The evaluation indicated that there was an 80% chance that cutthroat trout would be present in a stream channel with a drainage area of greater than 100 acres. The study also determined that there are about 1.6 miles of stream containing cutthroat trout per square mile of drainage area. Based on this information, the Yachats River Basin, which has a drainage area of 44 square miles, contains about 70 miles of streams with cutthroat trout.

Observations of cutthroat trout made during fish sampling in Oregon mid-coast tributary streams show that multiple age classes of cutthroat trout are present. Their wide distribution and stable age class structure suggests the status of cutthroat trout is healthy. However, returns of sea-run cutthroat trout have been low. In the Alsea Basin, which is the nearest basin where sea-run cutthroat have been monitored, there was a substantial decline in run size over the last 20 years. Cutthroat trout are listed as a stock of concern by ODFW because of the lack of data on stock abundance and recent declines in anadromous cutthroat stocks.

Life History Characteristics

Cutthroat trout exhibit several life history patterns. Resident cutthroat spend their entire life history in tributary streams and mature at a small size, usually less than 10 inches. They do not migrate within or out of the basin. There are no identified resident cutthroat trout populations above barriers in the Yachats River Basin.

Fluvial cutthroat trout spawn and rear as juveniles in small streams. They migrate to larger stream reaches and rivers where they attain greater size and mature. They return to headwater streams to spawn. Fluvial cutthroat will frequently attain a size of 12 to 16 inches before spawning.

Sea-run or anadromous cutthroat trout spawn and rear for 2 to 3 years in headwater streams before smolting and migrating to the ocean. They remain in the ocean for one summer and then return to headwater streams to spawn at a size of 12 to 20 inches. It is uncertain if cutthroat trout with different life history patterns represent distinct breeding groups, or if they are life history variations within the same breeding group.

Habitat Restoration Activities

Habitat restoration activities directed specifically at cutthroat trout have not been given a high priority in the Yachats River Basin at this time because the network of small streams where they are dominant is so vast that achieving meaningful habitat improvement would be difficult. Anadromous cutthroat should benefit from restoration efforts directed at coho salmon and winter steelhead.

Angling and Harvest

There has been fishery for resident cutthroat trout in the Yachats River Basin. The fishery for resident trout was of low intensity and is found primarily in the mainstem Yachats River. The Yachats River Basin had a low intensity bank fishery for sea-run cutthroat trout during August through September.

The trout season in the Yachats River Basin extends from the fourth Saturday in May to October 31. Until 1997 the bag limit was 5 trout over 8 inches in length. In 1996 the Fish and Wildlife Commission decided to close all coastal streams to the consumptive harvest of cutthroat trout (effective in 1997). There was concern that trout fisheries in coastal streams were resulting in overharvest of cutthroat trout or high mortality of juvenile salmonids of other species. There is little information available to confirm or refute these concerns.

It is the opinion of local ODFW staff that there is not an overharvest of wild resident cutthroat trout and that incidental hooking mortality of other species is low during the trout season. This assessment is based on the observation that fishing pressure is very low in the majority of the small and medium size streams containing resident cutthroat trout. These streams are not fished heavily because the streams are small and access is difficult. The only area where ODFW staff feel cutthroat trout harvest may be significant is in the mainstem and tidewater where more anglers are attracted by the larger wild fish. These fisheries tend to be self-regulating, with pressure dropping off when cutthroat trout numbers become low, or other species of anadromous fish are available.

Management Considerations

Cutthroat trout in the Yachats River Basin will be managed for wild production only. Habitat protection and enhancement measures, outlined in the Habitat chapter, will enhance the productivity of wild cutthroat trout in the basin. Natural production would be monitored.

Subsequent to the initial writing of this plan, the ODFW Commission decided to close all coastal streams to consumptive harvest of cutthroat trout due to the depressed status of the sea-run cutthroat trout population. Retention of all cutthroat trout will remain closed until population data warrants resumed harvest. However, angling opportunity for cutthroat ttrout remains an objective of this plan with consumptive harvest potential considered in the future if population status warrants.

Policies

Policy 1. Cutthroat trout in stream reaches of the Yachats River Basin shall be managed for wild production only.

Objectives

Objective 1. Maintain or improve the existing distribution, density, and genetic diversity of cutthroat trout in the Yachats River Basin.

Assumptions and Rationale

1. Cutthroat trout are found in about 70 miles of stream habitat in the Yachats River Basin.

2. The differences between resident, fluvial, and anadromous cutthroat trout and the factors determining the relative abundance of the different life history types are not understood.

3. The future abundance of cutthroat trout with different life history types currently can not be predicted.

4. Baseline information on cutthroat trout densities is available from fish sampling associated with research on coho salmon.

Actions

1.1 Measure cutthroat trout abundance in tributary streams and compare to historic abundance.

1.2 Systematically document cutthroat trout distribution as necessary to implement the Oregon Forest Practices Act, and ensure compliance with the Wild Fish Management Policy goals.

1.3 Accomplish habitat protection and restoration objectives.

1.4 Develop a list of culverts that are barriers to cutthroat trout migration and recommend remedies.

1.5 Establish baseline data sets of genetic characteristics of cutthroat trout populations in Yachats streams with the use of biochemical and phenotypic parameters

Objective 2. Re-establish spring, summer and early fall consumptive angling opportunities for cutthroat trout in Yachats River Basin streams, when populations warrant.

Assumptions and Rationale

1. The fishing opportunity will c ontinue as a catch-and-release fishery unless population status warrants a resumption of consumptive harvest.

2. A broad opportunity for an introductory fishing opportunity makes these fisheries desirable.

Actions

2.1 Continue existing catch-and-release angling opportunity throughout the Yachats River Basin.

2.2 Monitor freshwater cutthroat trout populations using standard areas and methods each year. Develop an index of abundance.

2.3 Promote research to determine if resident and sea-run life history patterns are genetically or environmentally determined and if they are separate populations.

2.4 Re-instate angling regulations allowing a consumptive fishing opprtunity for cutthroat trout in most areas of the Yachats River Basin if population status warrants.

PACIFIC LAMPREY

Background

Pacific lamprey (*Lampetra tridentata*) are found along the Pacific coast of North America from Unalaska Island, Alaska, south to southern California. Pacific lamprey migrate into all major river systems, often moving substantial distances upstream to headwaters.

Status

Pacific lamprey have been designated as a sensitive species by the state of Oregon. Pronounced declines in Pacific lamprey numbers have been noted statewide. The decline of Pacific lamprey is suspected to be due to degradation of spawning and larval rearing habitat, ocean conditions, marine mammal predation, and passage problems.

Life History Characteristics

Like salmon and steelhead, Pacific lamprey are anadromous. Adults, 12 inches and greater in length, migrate into freshwater from July to September (Scott and Crossman 1973). Their moderately strong swimming ability and their capacity to cling to rocks, dams, and fish ladders by means of a disc-shaped mouth enable them to overcome many passage barriers. They continue migrating upstream into headwater spawning areas.

They do not spawn until the following spring. Nest building and spawning occur from April to July in sandy gravel at the upstream edge of riffles. Females lay from 30,000 to 100,000 eggs. Adults die soon after spawning.

Eggs hatch in two to three weeks. The larvae, or ammocoetes, burrow into the mud along the margin of streams downstream from their nest. The filter feeding ammocoetes spend 5 to 6 years in freshwater.

Toward the end of their freshwater period, the ammocoete transforms into the adult form. They migrate downstream in the late summer or fall with increasing flows. The following spring or summer they adopt a parasitic life, and prey upon soft-scaled fish and other marine vertebrates. Lampreys live one to two years at sea before returning to freshwater to spawn. Marine mammals are believed to be the principal natural predators of lampreys (personal communication from Hal Weeks, ODFW).

Harvest

Indians throughout the northwest have used the lamprey for food for centuries. Lamprey are managed for tribal harvest in the Columbia River. There is a limited commercial harvest of lamprey at Willamette Falls in the Willamette Basin. Lamprey have not been managed for commercial, sport or tribal harvest in Oregon mid-coast basins.

Management Considerations

Pacific lamprey in the Yachats River Basin will be managed wild production only. Management activities for lamprey will focus on habitat protection and restoration. It is assumed that efforts to recover habitat for salmonids will also benefit lamprey.

Policies

Policy 1. The Yachats River Basin shall be managed for wild production of Pacific lamprey.

Objectives

Objective 1. Maintain Pacific lamprey production in rivers and streams in the Yachats River Basin where they naturally occur.

Assumptions and Rationale

1. The habitat required by Pacific lamprey will be provided by accomplishing basinwide habitat objectives.

Actions

1.1 While conducting routine inventory for other fish species, collect information and data for lampreys and summarize this information.

1.2 Accomplish basin habitat protection and restoration objectives.

CRAYFISH

Background

Crayfish are the most important freshwater invertebrate to Oregon's fisheries. They provide a small fishery and are also important fish forage in the Yachats River Basin. Crayfish are harvested by humans for food and bait. There is a small commercial fishery for crayfish at various locations throughout the state.

Status

Three species of crayfish are native to Oregon (Hobbs 1976). These species, their subspecies and intergrades are spread statewide with overlapping distributions.

There are no quantitative estimates of population size or status of crayfish in the Yachats River Basin. Crayfish are frequently observed in moderate numbers during surveys for other species.

Life History Characteristics

Crayfish breed in the summer with the first egg-bearing females appearing as early as September. Eggs are carried over the winter and hatch from late April to late June. The young are attached to the female by a thread-like material for a short time. Size achieved by zero-age crayfish during the first summer is quite variable due to the long period over which eggs hatch. Age determination by the length-frequency method is extremely difficult.

Females mature at about 18-30 months. Fecundity increases with size and perhaps age. There is evidence to suggest that some or perhaps all females do not breed each year.

Hatchery Production

There is no hatchery production of crayfish in the Yachats River Basin. No commercial crayfish culture operations have yet been successful in the state.

Harvest

Crayfish have been fished commercially in Oregon since 1893, when records were first kept. Markets for bait and restaurant food dictate the size of landings. Most of the Yachats River Basin harvest occurs during June through September (ODFW, unpublished data). There are no estimates of commercial landings specifically for the Yachats River Basin.

The commercial crayfish season is open from April 1 through October 31. Crayfish may be taken only by crayfish pots or ring nets. Only crayfish 3-5/8 inches or longer in length may be taken. Undersized crayfish must be returned unharmed to the water. Any crayfish caught with

eggs attached must be returned unharmed to the water. Gear must be labeled with an identification number issued by ODFW.

Recreational use of the resource is widespread for bait and direct consumption. No license is required to take crayfish. The daily bag limit is 100 per person. The season is open the entire year at all hours. Estimates of sport harvest levels in the Yachats River Basin are unavailable.

Management Considerations

Habitat deterioration is the most serious threat to crayfish populations. Local populations may be subject to overharvesting.

Crayfish in the Yachats River Basin will be managed for wild production only to provide for commercial and recreational fisheries.

Objectives

Objective 1. Maintain natural production of crayfish in the Yachats River Basin.

Assumptions and Rationale

1. Quantitative information is not available for crayfish distribution, abundance, and population characteristics in the Yachats River Basin.

2. Information on crayfish could be collected during routine surveys for other species.

3. Protection and enhancement of crayfish populations can be achieved principally through habitat protection and improvement.

Actions

1.1 While conducting routine inventory for juvenile salmonids, record and file observations of crayfish in a standardized format.

1.2 Accomplish basin habitat protection and restoration objectives.

Objective 2. Monitor the size and importance of the commercial crayfish harvest in the Yachats River Basin.

Assumptions and Rationale

1. Presently, commercial catch information is reported only by date and county.

2. The absence of crayfish landings in Lincoln and Polk counties during the recent four years indicates commercial operations have not been active in the Yachats River Basin.

3. Commercial fisheries could start if markets improve.

4. Data on crayfish catch by basin could be collected from commercial operators.

Actions

2.1 Propose a regulation to commercial harvesters to use a logbook to record effort and catch by waterbody for all crayfish harvest.

Objective 3. Determine the size and importance of the recreational crayfish harvest in the Yachats River Basin.

Assumptions and Rationale

1. There are no estimates of current harvest or effort.

2. Recreational harvest is widespread and may be increasing.

Actions

3.1 Conduct harvest studies in key areas to evaluate harvest and effort.

ANGLER ACCESS

Background

The majority of angling in the Yachats River Basin occurs in the lower 9 miles of river below the mouth of the North Fork Yachats River. The river is closed to angling above this point during the winter season.

Bank anglers have access to the river on several publicly owned parcels of USFS and ODFW property. There are also a number or private property owners that allow at least some public access for angling.

There is one developed public access site for boats on the Yachats River located at river mile 1. In addition, boaters use a number of unimproved sites to launch drift boats. Additional permanent sites near river mile 5 and the mouth of the North Fork Yachats (river mile 9) would provide boat access to virtually the entire portion of the Yachats River open to steelhead fishing. However, there has been some concern voiced by members of the public that boats enable anglers to overfish the small runs of steelhead and salmon in the basin. There have been requests to restrict boat angling on the Yachats River.

Management Considerations

Conflicts between anglers and landowners primarily involve trespass, littering, and damage to vegetation. Incentives need to be developed to encourage private landowners to allow public access and to encourage anglers to respect property rights and to minimize disturbance to wildlife.

Policies

Policy 1. Acquisition and development of angler access sites shall be consistent with guidelines and objectives for management of fish species and habitat.

Objectives

Objective 1. Increase bank angling access in the Yachats River Basin.

Assumptions and Rationale

1. Additional bank angling access would increase angling opportunities.

2. Much of the shoreline along rivers and streams is privately owned.

3. Private landowners often attempt to prevent public access on their property.

Actions

2.1 Develop incentives to encourage private landowners to allow public access.

2.2 Develop incentives to encourage anglers to respect property rights and minimize disturbance to wildlife.

2.3 Seek opportunities to secure (through agreement, lease, or purchase) public bank angling sites.

2.4 Promote the acquisition of additional public bank access near the mouth of Beamer Creek by purchase or lease agreement.

Table 12. Summary of planned actions and funding status.

Action		Requires action by other jurisdictions	Currently funded	Requires additional funding Short term	Long term
MANAGEMENT OF SPECIES					
Objective 1. Restore & maintain productive populations of all native species of salmonids .					
1.1	Achieve the habitat objectives described in this plan.	X	X	X	X
1.2	Bring the level of hatchery fish to less than 10% of the total natural spawning population.		X	X	
1.3	Control fish harvest.		X		
1.4	Institute remedial recovery programs.	X	X	X	X
1.5	Determine if marine mammal predation is a primary constraint preventing recovery .	X		X	X
HABITAT					
Objective 1. Maintain or increase summer flows.					
1.1	Monitor flow.	X		X	
1.2	Establish in-stream water rights.	X	X		
1.3	Acquire abandoned water rights.	X	X		
1.4	WRD to enforce in-stream water rights.	X			
1.5	WRD to monitor water diversions.	X			
1.6	Track cumulative water withdrawals.	X			
1.7	Oppose new water rights below in-stream.	X	X		
1.8	Support reservoir storage.	X	X		
Objective 2. Reduce summer water temperatures where artificial warming occurs.					
2.1	Measure stream temperatures.		X		
2.2	Monitor stream temperatures in key areas.		X		
2.3	Increase riparian shading in forested lands.	X			
2.4	Increase riparian shading in agricultural lands.	X			
2.5	Develop protection standards for agricultural lands.	X		X	
2.6	ncrease riparian shading in residential or developed areas.	X		X	

Action		Requires action by other jurisdictions	Currently funded	Require... Short ter...	...onal funding Long term
2.7	Reduce inputs of sediments into stream channels.	X	X	X	X
Objective 3.	**Increase in-stream channel complexity.**				
3.1	Measure levels of channel complexity & vegetation.			X	X
3.2	Recommend & maintain existing trees in buffer strips.	X			
3.3	Identify areas that would benefit from LWD.		X	X	
3.4	Coordinate placement of LWD.	X	X	X	
3.5	Encourage beaver populations.		X		
3.6	Re-establish conifers in riparian areas.	X	X	X	X
3.7	Inform landowners about the benefits of leaving LWD.		X	X	
Objective 4.	**Reduce erosion rates and inputs of sediments.**				
4.1	Consider cumulative sediment input.	X			
4.2	Recommend corrections to road system.	X			
4.3	Standardized methods to measure sedimentation.	X			
4.4	Measure & monitor sedimentation rates.	X	X		
4.5	Report all mass failures on state or private forest lands to ODF.		X		
4.6	Report all mass failures on federal land to the USFS.		X		
4.7	Promote fencing livestock.		X	X	X
Objective 5.	**Prevent chemical contaminants from degrading fish habitat.**				
5.1	Enforcement of existing water quality standards.	X			
5.2	Land management agencies or private landowners measure water quality parameters.	X			
Objective 6.	**Protect natural fish passage conditions.**				
6.1	Inventory culverts & other artificial obstructions.		X	X	
6.2	Pursue correction of passage problems.	X		X	
Objective 7.	**Increase habitat area available to fish.**				
7.1	Evaluate historic & existing aquatic habitat areas.			X	
7.2	Measure changes in aquatic habitat areas.			X	
7.3	Identify high priority habitats.		X		

Action		Requires action by other jurisdictions	Currently funded	Requires additional funding Short term	Requires additional funding Long term
7.4	Prevent channelization of streams and rivers.	X			
7.5	Prevent diking of wetlands and estuaries.	X			
7.6	Prevent filling of estuaries.	X			
7.7	Restore historic habitat areas.			X	X
Objective 8. Coordinate habitat protection and restoration activities.					
8.1	Coordinate habitat and fish management activities.		X		
FALL CHINOOK					
Objective 1. Achieve spawning escapement of at least 300 spawners.					
1.1	Develop methodology for monitoring (5 years).			X	
1.2	Continue extensive spawning surveys.		X		
1.3	Establish standard spawning surveys of escapement.		X		
1.4	Propose closure of the fishery.		X		
1.5	Initiate sampling program to monitor juveniles.			X	
Objective 2. Provide an opportunity to harvest an average of 40 fall chinook.					
2.1	Maintain appropriate angling regulations.		X		
2.2	Support enforcement of regulations.		X		
2.3	Monitor harvest with punchcard.		X		
COHO SALMON					
Objective 1. Provide an average wild coho spawning escapement of 40 fish per mile of juvenile coho rearing habitat.					
1.1	Continue 2 standard surveys.		X		
1.2	Survey coho habitats			X	X
1.3	Comment on land use activities that impact important habitats.	X	X		
1.4	Implement habitat restoration projects.	X	X	X	X
1.5	Recommend forest landowners improve coho habitat (SEI).	X	X		
1.6	Manage beavers to benefit habitat.		X		
1.7	Restrict angling for coho.		X		

Action		Requires action by other jurisdictions	Currently funded	Requires additional funding Short term	Long term
Objective 2. Achieve juvenile coho salmon seeding of 1 fish per m2 of pool habitat.					
2.1	Conduct juveniles surveys.			X	
2.2	Evaluate & refine adult spawner goal.			X	
CHUM SALMON					
Objective: Determine if a self-sustaining natural population of chum salmon exists.					
1.1	Monitor chum escapement.			X	X
1.2	Conduct exploratory spawning surveys in the tidewater tributaries.			X	X
WINTER STEELHEAD					
Objective 1. Increase production of wild winter steelhead.					
1.1	Accomplish habitat management objectives.	X	X	X	X
1.2	Emphasis important production areas.				
1.3	Continue angling regulations.		X		
1.4	Hatchery steelhead in spawning populations.			X	X
Objective 2. Develop an information base & methodology for measuring & monitoring wild steelhead (5 years).					
2.1	Steelhead spawning surveys.		X	X	
2.2	Methods to measure escapement trends.			X	X
2.3	Juvenile steelhead inventories.		X	X	X
2.4	Measure juvenile steelhead production to monitor wild production.			X	X
2.5	Estimate steelhead spawning escapement.			X	X
Objective 3. Provide catch-and-release angling opportunities for wild steelhead.					
3.1	Maintain angling regulations.		X		
CUTTHROAT TROUT					
Objective 1. Maintain or improve the existing distribution, density, and genetic diversity.					
1.1	Measure & compare abundance in tributary streams.			X	
1.2	Document distribution.			X	

Action		Requires action by other jurisdictions	Currently funded	Requires additional funding Short term	Long term
1.3	Habitat protection and restoration.	X	X	X	X
1.4	List & recommend remedies for culverts.	X	X	X	
1.5	Use biochemical and phenotypic parameters to set baseline data of genetic characteristics.			X	
Objective 2.	**Re-establish spring, summer and early fall consumptive angling opportunities for cutthroat when populations warrant.**				
2.1	Continue existing catch-and-release angling opportunity.		X		
2.2	Monitor & index freshwater cutthroat trout populations.			X	X
2.3	Populations research.			X	X
2.4	Re-instate angling regulations allowing a consumptive fishing apportunity if population status warrants.				X
	PACIFIC LAMPREY				
Objective 1.	**Maintain naturally occurring production in rivers and streams.**				
1.1	Collect data & summarize information.		X	X	
1.2	Habitat protection and restoration.	X	X	X	X
	CRAYFISH				
Objective 1.	**Maintain natural production of crayfish.**				
1.1	Inventory, record, & file in standardized format juvenile observations.		X		
1.2	Habitat protection and restoration.	X	X	X	X
Objective 2.	**Monitor size & importance of commercial crayfish harvest.**				
2.1	Use logbooks to record effort & catch by water body for harvest.				X
Objective 3.	**Monitor size & importance of recreational crayfish harvest.**				
3.1	Evaluate harvest and effort in key areas.			X	

Action		Requires action by other jurisdictions	Currently funded	Require... Short te...	...onal funding Long term
ANGLER ACCESS					
Objective 1. Increase bank angling access.					
2.1	Encourage private landowners to allow public access.		X	X	
2.2	Encourage anglers to respect property rights and minimize disturbance to wildlife.		X	X	
2.3	Secure public bank angling sites.			X	X

IMPLEMENTATION AND REVIEW

This plan is intended to provide both short-term and long-term direction for management of the fisheries in the basin. A separate "Action Plan" will be prepared by the Department that contains the actions from the basin plan that will be funded and undertaken during each biennium. Progress made implementing those actions will be reported by the Department every two years. At that time, implementation priorities will also be re-examined and adjustments made where necessary.

Upon adoption by the Oregon Fish and Wildlife Commission, the policies and objectives will become Oregon Administrative Rules. As conditions for the resources and desires of the public change and as new information is obtained, the plan must be responsive and evolve as well. The entire plan, including policies and objectives, will be formally reviewed and revised every ten years. Interim changes in administrative rules can be made by the Commission in accordance with the Administrative Procedures Act when needed.

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APPENDIX

APPENDIX A

Habitat Restoration Activities

Habitat protection measures, such as land use laws, the Forest Practices Act, and fill and removal laws, are necessary to maintain habitat conditions that currently support fish stocks and will continue to do so in the long term. Habitat restoration activities are intended to improve degraded habitats which have potential for increased production of depressed fish populations in the near term.

Areas in the Yachats River Basin were identified that have the greatest potential for benefiting fish stocks that are at risk. Restoration activities that have the greatest chance of producing measurable improvements in the status and abundance of fish stocks in the short term were identified for these areas. Priorities were developed based on current knowledge of the habitat needs of a species and the ability to artificially modify habitat to provide for these needs in an ecologically sound manner. Additional information on biology of fish runs, their habitat needs, and the condition of the existing habitat will in all probability lead to the identification of additional restoration opportunities. Restoration actions are targeted at improving conditions for a single species although it is recognized that other species will frequently benefit from the restoration efforts.

High priority areas are listed Table A-1. More detailed descriptions of specific restoration activities for each species are provided in the species chapters in this document.

Table A-1. High priority areas and associated activities for habitat restoration in the Yachats River Basin.

Key species	Secondary species	Area	Activities
Coho salmon	Winter steelhead Cutthroat trout	Yachats River	In-stream structure in bedrock areas; plantings of conifers in riparian areas; develop winter refuge areas
Winter steelhead	Coho salmon Cutthroat trout	North Fork Yachats and tributaries; Fish Creek Beamer Creek Williamson Creek	In-stream structure in bedrock areas; plantings of conifers in riparian areas; develop winter refuge areas