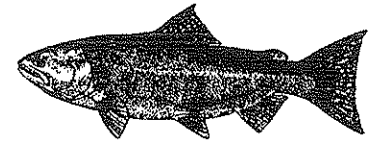




Coastal Chinook Salmon Management Plan Summary



The Coastal Chinook Salmon Management Plan is the fourth in a series of individual species plans concerning management of anadromous salmonid populations in Oregon. This plan focuses on actions the Oregon Department of Fish and Wildlife will take regarding chinook salmon populations produced in Oregon Coastal watersheds from the Necanicum River in the north to the Winchuck River at the Oregon-California border. Management of chinook salmon in the Columbia River Basin — which is guided by a cooperative agreement with Washington, the Columbia River Treaty Indian Tribes, and the Federal Government — is not included in this document.

INTRODUCTION

The coastal chinook salmon plan is the product of an ongoing process. Work began with the preparation of a report in 1988 which contains descriptions of the life histories and assessments of recent trends in the run strengths of coastal chinook salmon stocks.

Oregon Department of Fish and Wildlife staff and public

representatives then developed a comprehensive list containing issues of concern and actions needed to improve management of coastal chinook salmon. These actions were based in part on a review of historic and contemporary habitat, harvest and enhancement management practices in Oregon

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and on a review of fisheries scientific literature.

Some of the actions identified have already been accomplished. The remaining actions the department intends to accomplish are presented in the draft management plan.

The purpose of the plan is to:

1. Identify Department of Fish and Wildlife objectives for managing coastal chinook salmon and describe actions necessary to achieve these objectives.
2. Provide technical guidelines to standardize or improve performance of production and management activities.
3. Establish a formal review process that will stimulate future revision and improvement of the plan.
4. Provide for public participation in plan development.

The primary focus of the plan is to assist in maintenance of healthy wild stocks and conservation of depressed stocks. This plan does not establish specific numbers for chinook harvest in ocean or in-river fisheries, but rather recommends harvest (exploitation) rates to guide fisheries and provide for escapement goals that will be established for populations in individual river basins.

The plan also recognizes the existence and influence of present multi-state, multi-agency ocean management systems and resulting fishery impacts that selectively affect coastal chinook stocks. Considering the current status of wild salmonid populations throughout the state and the scientific and economic uncertainties associated with long-term management of hatchery programs, the future productivity of the coastal chinook resource will be preserved best by placing highest priority on maintaining healthy wild stocks and the habitat on which they depend.

SUMMARY OF MAJOR ACTIONS

Approximately 55 specific actions are proposed in the management plan, organized under eight objectives. This summary is provided to introduce the most important concepts of the management plan.

Production

- A strategic procedure will be developed to establish goals for run-size and spawning escapement for individual coastal chinook populations.
- The department will review and classify the status of all wild chinook populations in coastal river basins every two years. These classifications will guide commitment of resources towards population conservation efforts.
- Management programs will be developed to attempt to restore several sensitive and depressed stocks of chinook salmon to a higher production level.
- The department will strive to minimize reliance on artificial propagation of chinook in coastal river basins for supporting fisheries, mitigating habitat loss or rehabilitating depressed populations.
- Stock transfer is recognized as a substantial threat to the fitness of locally adapted fish. Therefore, transfer of chinook stocks from one river basin to another will be terminated, except under precisely defined circumstances.

- Hatchery chinook will not be stocked into populations that are not currently being stocked without authorization in a basin plan approved by the Fish and Wildlife Commission; unless the population is exempted from wild fish management by the commission.
- Harvest-based fishery contribution objectives will be defined for all current and proposed artificial propagation programs in coastal river basins.
- Written operational plans will be developed and implemented to guide broodstock selection, breeding, husbandry, record-keeping, incubation, rearing, marking and release practices, for each location where chinook are produced by artificial methods.
- Existing and proposed artificial propagation programs will be reviewed and modified, if judged necessary, to ensure that they add-to, rather than replace, natural production.

Habitat Management

- The department will review the adequacy of existing legal standards and administrative programs affecting protection of coastal chinook habitat, and will advocate needed improvements.
- A system for assessing current condition and monitoring future condition of fish rearing habitats in coastal river

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basins will be developed.

- Criteria will be developed to provide a high level of protection to sensitive habitats crucial to natural production of chinook salmon.
- The department will actively encourage assessment of cumulative impacts of watershed uses on fish production habitat, and the use of land and water management techniques that minimize those impacts.
- Priorities will be defined for all current and proposed habitat rehabilitation programs in coastal river basins.

Harvest Management

- This plan recognizes the existing multi-jurisdictional nature of ocean harvest management systems and the varying exploitation rates on Oregon coastal chinook stock groups intercepted by these fisheries. It addresses the need to manage harvest exploitation on major coastal chinook stock groups or aggregates in "general" ocean fisheries while managing for individual basin stocks in

targeted nearshore (state waters) ocean fisheries and in-river recreational fisheries.

- Monitoring the status of stocks and the fisheries in river basins and ocean management areas will be a high priority.
- The department will make recommendations to the Fish and Wildlife Commission and regional fishery management forums specifying ocean and in-river exploitation rates that are compatible with conserving wild stocks of chinook salmon and providing in-river fisheries in coastal basins.
- In order to provide optimum ocean harvest benefits to regional ocean fisheries from major southern Oregon and California chinook stocks such as the Rogue, Central Valley and Klamath River basin chinook populations, biologically appropriate stock-conservation measures (i.e., in-river harvest restrictions, habitat improvement, artificial propagation) will be undertaken to aid conservation of several depressed chinook stocks.

MANAGEMENT CONSTRAINTS

This plan must be consistent with a variety of existing management plans and fishing regimes, laws, rules, treaties and semi-formal agreements with public agencies and private parties or organizations. These are referred to in total as "management constraints" because they describe the general boundaries of acceptable and unacceptable courses of action with regard to management of coastal chinook salmon.

Constraints that are particularly relevant to such management include:

- **Pacific Salmon Treaty**
- **Columbia River Fisheries Management Plan**
- **Klamath Salmon Management Agreement**
- **Pacific Fishery Management Council**

WILD FISH MANAGEMENT POLICY

The department's Wild Fish Management Policy (WFMP) states that protection of genetic resources shall be the priority in the management of wild fish to assure optimum economic, commercial, recreational, and aesthetic benefits for present and future residents of Oregon. "Wild fish" are defined as any naturally-spawned fish belonging to an indigenous population including all our anadromous fish, resident native game fish, and all state sensitive nongame species.

The Wild Fish Management Policy covers the following issues:

Hatchery Practices

Regarding new hatchery programs: the department will

not stock hatchery fish into wild populations not currently stocked without commission approval.

Regarding existing hatchery programs: it is recognized that interbreeding of hatchery fish and wild fish poses risks to conserving and utilizing the genetic resources of wild populations.

These risks will be limited by controlling gene flow from the hatchery populations to wild populations by one of the following:

- Eliminating releases of hatchery fish
- Releasing fish that are reproductively isolated from the wild population, limiting the portion mixing with the wild population to no more than 10 percent of the wild population size.
- Releasing fish that are genetically similar to the wild

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population and limiting the number allowed to spawn naturally to no more than 50 percent of the wild population.

Population Interactions and Fish Introductions

The department shall:

- Oppose introductions of fish of the same or different species that will cause wild fish losses from competition, predation, or disease and will prevent the meeting of the natural production objectives in management plans.
- Oppose such actions that, if continued for the next five years, will reduce the number of spawners in a population to 300 fish. The agency will support actions to correct such actions that have depressed a population to 300 or fewer fish.

Habitat Protection and Restoration

The department shall:

- Advocate and support habitat protection and restoration on private and public lands.
- Oppose degradation of habitat quantity or quality that poses a risk to the meeting of natural production objectives in management plans.
- Oppose habitat degradation that causes a population to

decline in abundance that — if continued for an additional five years — would likely reduce the number of spawners in a population to 300 fish.

- Advocate the restoration of degraded habitat.

Harvest

The department shall:

- Oppose harvest strategies that endanger the long-term viability of a population or that pose a risk to meeting the natural production objectives in management plans.
- Oppose harvest strategies that cause a population to experience a decline that - if continued over five years - will reduce the number of spawners to 300 fish.
- Advocate the termination of harvest strategies that have depressed a population to a stable level of 300 or fewer spawners.

Small Populations

The department recognizes that populations of 300 or fewer spawners may exist naturally and over time may have undergone random genetic changes that may have resulted in the establishment of rare genetic traits. The protection of these populations is recognized to be highly desirable.

MANAGEMENT OBJECTIVES

Objective 1

Maintain healthy populations of wild chinook salmon in coastal river basins.

Populations of wild chinook salmon produced in Oregon coastal river basins presently contribute to extensive ocean fisheries from southeast Alaska through central California and to vigorous in-river recreational fisheries in many coastal rivers. Spawning escapements of most coastal chinook populations have been robust since at least 1985, considerable natural fluctuations are expected to occur in abundance of these populations and the fisheries they support.

Objective 2

Produce hatchery chinook salmon for specific fishery contribution purposes.

Hatchery fish have been a particularly visible and popular element of fishery management programs. Properly designed and conducted hatcheries may make sustained contributions to fisheries. On the whole, however, hatchery

programs have not been designed, evaluated, monitored and modified with sufficient rigor to ensure that they are cost effective and that they are compatible with wild populations. The actions under this objective are designed to provide a logical framework for (1) maintaining effective hatchery programs, (2) initiating new programs, or (3) terminating ineffective, counter productive or unnecessary programs.

Objective 3

Develop comprehensive management programs to protect coastal river chinook habitat.

Habitat management is the basis of natural production. Without suitable habitats, it will be impossible to maintain wild populations regardless of whatever other management activities the agency might take. The department can influence management of aquatic habitat but does not manage aquatic habitat directly.

Because the department does not have direct regulatory authority over land and water resources vital to fish production, the department must make Federal, State, and private agencies and individuals that manage habitat aware of fish

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habitat conditions and needs. The department's effectiveness at protecting the productive capacities of aquatic habitats will be improved by greater use of quantitative habitat databases and periodic review and revision, as may be necessary, of laws related to protecting aquatic habitats on federal, state and private lands.

Objective 4

Describe and manage gene resources represented in coastal chinook hatchery populations.

Native populations of chinook salmon in Oregon coastal river basins are the foundation for species health as a whole. Similarly, the genetic characteristics of stocks reared in hatcheries influence the effectiveness of the hatchery program and determine whether the hatchery stock will be compatible with the native stock.

In spite of the potentially critical influence on management programs of hatchery stock selection and breeding practices, procedural guidelines either do not exist in written form or are vague. Written operational plans for individual stocks are generally lacking, and biological monitoring of most hatchery populations is not sufficient to promptly detect the occurrence of significant changes in the genetic composition of the stock.

Population monitoring of this sort is essential to artificial propagation.

Objective 5

Develop a genetic resource inventory database for wild populations of coastal chinook.

The genetic resources of many wild chinook salmon populations in Oregon coastal river basins are essential to sustaining natural production of chinook salmon in the future. The organized genetic diversity of these populations is the product of evolution in their varying coastal stream environments and is essential to the future productivity and survival of these populations.

Perpetuation of these native stocks of chinook salmon in coastal river basins will be a primary goal of department management programs. Working from a foundation of the Natural Production and Wild Fish policies, ODFW will take a conservative management position with regard to preventing the incremental destruction (through overfishing and/or

habitat alteration) and disruption (through hybridization with foreign stocks) of remaining wild chinook salmon stocks in coastal river basin.

Objective 6

Protect wild coastal chinook populations from detrimental genetic interactions with hatchery populations.

The genetic characteristics of wild populations can be altered by interbreeding with hatchery fish that stray from hatchery sites where they were expected to return. Actions identified under this objective are designed to increase awareness of the risk of straying by hatchery fish, improve databases and standardize management responses to this concern.

Objective 7

Minimize detrimental genetic impacts of harvest on coastal chinook salmon populations.

The effects of selective, mixed stock fisheries on the genetic characteristics of salmon populations are documented in scientific literature. The genetic effects of harvest on maturation schedules, growth rates and the conservation of a large number of wild stocks must be better understood and responded to. Not doing so could ultimately reduce the productivity of many chinook salmon stocks, thereby reducing harvest opportunities.

Objective 8

Minimize detrimental genetic changes in coastal chinook populations that may be caused by habitat alteration projects.

Certain types of habitat alterations could simultaneously be advantageous to one fish species and disadvantageous to another species. Further, certain types of habitat alterations could favor or differentially select for certain segments of a species, thus directing evolutionary change in the population. The plan recognizes a need to evaluate the potential effect of habitat alteration projects on the genetic composition of all affected species.

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MANAGEMENT GUIDELINES

Management guidelines for coastal chinook are provided in this plan to:

1. Illuminate department policy
2. Provide technical information relevant to specific management activities
3. Influence priorities of various department activities
4. Influence management decisions

Guidelines for Harvest Management

Oregon's coastal chinook stocks populations are extremely diverse in their life histories and occur in the ocean from southeast Alaska to central California. Large and well organized ocean fisheries harvest these stocks during the several years of their ocean migration prior to returning to home streams on the Oregon Coast.

Since the mid 1980s, extensive ocean management frameworks have been established on the west coasts of Canada and the United States to manage the ocean exploitation of salmon stocks. Technical evaluations of these stocks and implementation of fishery regulations commensurate with spawning escapement goals have been the main focus of these management groups.

Oregon coastal chinook stocks contribute to fisheries under two main management regimes. The north migrating stocks, those generally from the Nehalem River through the Elk River contribute mainly to ocean fisheries off south east Alaska and British Columbia and to a much lesser degree off Oregon.

These stocks are managed under ocean regulations developed by the Pacific Salmon Commission (the U.S./Canada Salmon Treaty), and, to the extent they are caught in directed terminal ocean and in-river fisheries in Oregon, by the PFMC and the state of Oregon, respectively. For south and local migrating stocks, those south of the Elk River and also including Umpqua River spring chinook, the PFMC and the states of Oregon and California are the principal managers.

The harvest management guidelines presented in the plan recognize the largely distinct ocean distributions of these two major stock groups, their life history characteristics and their exploitation rates by area and management regime. The department recognizes that the harvest management guidelines presented in this plan are associated with uncertainty regarding, for example, the ocean distribution patterns, underlying productivities and spawning escapement needs of individual chinook populations. The guidelines

have been written to provide sufficient flexibility to avoid "weak stock" management constraints and conduct ocean fisheries on mixed stocks at levels that are consistent with maintaining in-river fisheries in most coastal river basins and spawning populations in all.

Identifying Population Aggregates

Chinook salmon from Oregon coastal populations are present in the ocean from central California through southeast Alaska. These populations are not equally affected by ocean fisheries because (1) they are not randomly distributed throughout the geographic range of the fisheries, (2) fisheries are more intense in some areas than in others, (3) the mean age of maturity varies between populations, and (4) some populations are more productive than others.

ODFW will recommend regulations for mixed stock ocean fisheries that should achieve run-size goals for major population groups or aggregates.

Guidelines for Enhancement Projects

The department conducts or supports a variety of fish enhancement projects, including activities such as:

- Stocking hatchery fish as fry, presmolts, and smolts
- Removing or laddering barriers to migration
- Improve or restoring spawning and rearing habitat
- The department recognizes that none of these projects are assured of achieving or sustaining an increased level of fish production. Each enhancement effort will be viewed as an attempt to increase fish production and will be evaluated as best possible.

The guidelines for enhancement projects include:

1. Recovery programs for depressed wild populations deserve first consideration for funding within district and regional budgets.
2. Hatchery programs designed to increase fish abundance will be designed consistent with an intent of achieving minimum reduction in the wild population.
3. Hatchery programs that involve stocking chinook fry or presmolts will only be permitted in locations where significantly underseeded (but ecologically suitable) rearing habitat has been identified.

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Guidelines for Population Status Classification

Beginning in 1988, an effort has been made to list all populations of wild coastal chinook salmon and to classify the status of each population. The purpose of the list and the status assessment was twofold: (1) to explicitly acknowledge the many individual populations that, in total, represent Oregon's coastal chinook resource, and (2) to assess the "health" of each population, so that protection or restoration efforts could be most appropriately directed.

The department is committed to the evolving process of identifying wild populations and classifying their status.

A population is provisionally classified as *healthy* if one or more of the following conditions exists:

1. Adults are apparently "fully seeding" available spawning habitat.
2. Returns of adults to the respective basin exhibit a stable or increasing trend in abundance over the last 10-20 years. Conceptually, the term "stable" trend allows for considerable annual or cyclic variation in abundance, including short term declining trends in abundance within the 10-20 year reference period, as long as the overall trend is not declining.

A population is provisionally classified as *sensitive* if one or more of the following conditions exist:

1. The population of spawners probably is composed of 300 or fewer fish.
2. Returns of adults to the respective basin exhibit a precipitous declining trend during the last 3 years and further declines in spawning escapement will likely result in severe underseeding of spawning habitat.
3. A substantial alteration or destruction of critical spawning or rearing habitat of a specific population has recently occurred or is imminent.
4. A substantial risk exists for interbreeding at levels in excess of standards established by the Wild Fish Management Policy between the wild population and stray hatchery fish.

A population is provisionally classified as *depressed* if all of the following conditions exist:

1. Returns of adults to the respective basin exhibit a stable or declining trend in abundance over the last 10-20 years.
2. Returns of adults to the basin are believed to have been substantially below levels needed to achieve full seeding.
3. The population is considered to be at moderate to high risk of extinction, owing to recent performance in the trend and magnitude of spawners.

Guidelines for Stocking Hatchery Fish

With relatively few exceptions, runs of chinook salmon in Oregon coastal river basins are largely supported by wild populations. Under the recently adopted Wild Fish Management Policy, commission approval of a basin management plan is required to authorize stocking of hatchery chinook in populations that are not currently stocked.

The general intent is to minimize reliance on artificial propagation for supporting fisheries, mitigating habitat loss or rehabilitating depressed populations. This management intent is based on broad consideration of the contemporary status of wild and hatchery populations of salmonids in coastal river basins and of the status of the fisheries that these populations support.

This management intent reflects:

- Confidence in the biological productivity and health of wild coastal chinook populations.
- Uncertainty regarding whether attempts to produce hatchery fish in these populations will be successful, sustainable and compatible with maintaining productive wild populations.
- Concern over the economic costs and technical difficulties associated with maintaining and upgrading an already substantial artificial propagation infrastructure throughout the state.

The department intends to downsize or eliminate releases of fry and presmolts as may be necessary to minimize competition between hatchery and wild fish and to limit the use of hatchery chinook fry and presmolts to basins/habitats that have specifically been identified as being underseeded by wild spawners.

Coastal river basins that are currently managed strictly for wild chinook and that merit consideration for continued wild-only management include:

- Nehalem
- Siletz
- Yachats

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- Siuslaw
- Sixes.

Coastal river basins that are currently stocked with some hatchery chinook, but deserve serious consideration for wild-only management include:

- Miami
- Kilchis
- Wilson
- Tillamook
- Nestucca
- Alsea
- Coquille
- Rogue (fall-run).

Guidelines for Stock Transfer

In the context of this management plan, stock transfer means the intentional introduction of chinook salmon from one population into another.

Historically, stock transfer was a common practice in Oregon. Over the years, and especially since 1975 however, chinook stock transfer has become less common in Oregon coastal river basins, partly because many evaluations of stock transfer have demonstrated or hypothesized serious risks to the genetic fitness of recipient wild populations.

The recently adopted Wild Fish Management Policy implicitly discourages (but does not prohibit) stock transfer by establishing a standard that no more than 10 percent of the spawners in a population should be composed of foreign stock hatchery fish. Proposed guidelines include the following principles.

1. Stock transfer will not be permitted with chinook salmon

in coastal rivers except as described in this plan.

2. Stock transfer will not be used in efforts to rehabilitate a sensitive or depressed population because outcrossing with the foreign stock will alter the genetic "identity" of the indigenous population.
3. If an indigenous population in a specific coastal river basin is judged to have become extinct, stock transfer may be used in an attempt to reestablish a naturally propagated stock in the system.
4. Rare instances may exist where it is desirable to use stock transfer to artificially establish a run of chinook salmon in a river basin that does not currently support a native run.

Guidelines for Hatchery Practices

Department of Fish and Wildlife staff will begin to prepare written operational plans for each coastal chinook hatchery program, including STEP facilities. These operational plans will contain explicit descriptions of broodstock management procedures and rearing, marking and release procedures.

In some instances, operational plans will precisely define acceptable hatchery practices, but in many instances operational plans will describe preferable procedures and will establish standards that are presented as ideals to be achieved whenever possible.

Operational plans are essential to maintaining the genetic fitness of the hatchery population, minimizing detrimental impacts (genetic or otherwise) on wild populations, and achieving management goals that have been established for the hatchery population.

Coastal Chinook Plan Public Review

The Department of Fish and Wildlife will hold a series of public meetings during September to hear public comments on the proposed Coastal Chinook Management Plan. Written comments are also welcome, but must be received no later than October 1. Address correspondence to Chinook Plan, PO Box 59, Portland, OR 97207.

The Fish and Wildlife Commission will consider adoption of a final plan at a public hearing on October 16, 1991. (Hearing location to be announced.)

Copies of the full plan will be available for on-site, public review at all department district and regional offices, the department research lab in Corvallis and at public libraries around the state. Additional copies of this summary are available on request.

Meeting Locations and Dates

Coos Bay.....	Tuesday, September 3
Roseburg.....	Wednesday, September 4
Portland.....	Wednesday, September 11
Tillamook.....	Thursday, September 12