1992 WASHINGTON STATE

SALMON AND STEELHEAD STOCK INVENTORY

WASHINGTON DEPARTMENT OF FISHERIES
WASHINGTON DEPARTMENT OF WILDLIFE
AND
WESTERN WASHINGTON TREATY INDIAN TRIBES

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INTRODUCTION

This report documents the results of an initial stock status inventory that is the first step in a statewide effort to maintain and restore wild[1] salmon and steelhead stocks and fisheries. The inventory's intent is to help identify currently available information and to guide future restoration planning and implementation. While overall objectives and future steps of the restoration initiative are briefly described, the report primarily focuses on current condition of Washington's naturally reproducing anadromous salmonid populations and not on the adequacy of current resource management objectives. Assessment of management objectives and strategies will be one of many subsequent steps aimed at improving the status of wild salmon and steelhead resources in Washington.

BACKGROUND

A majority of salmon and nearly all wild steelhead runs in Washington are primarily managed to achieve natural spawning escapement goals. Numerically, many stocks are relatively healthy, and naturally reproducing populations still account for over half the total salmon and steelhead production originating from Washington's watersheds. However, many wild stocks are significantly depleted and most runs experience periodic problems. Annual and long-term resource management planning efforts are commonly undertaken to assess status of stocks and fisheries. Specific harvest, culture, and habitat measures have been recommended and/or implemented in many areas to maintain or improve the status of wild stocks (PFMC 1992).

Despite the relatively healthy condition of many wild salmon and steelhead stocks, significant challenges face these resources in the Pacific Northwest. Factors such as habitat degradation, some poorly designed hatchery programs, and overfishing have contributed to the decline of many wild stocks to below historical levels (Nehlsen et al. 1991; PFMC 1992; WDF 1992). Recent petitions and/or listings have occurred under the

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[1] The term wild stock as used in this report refers to how fish reproduce, i.e. by spawning and rearing in the natural habitat, regardless of parentage, and does not refer to genetic heritage. The origin (e.g. native, non-native or mixed) and parentage (wild, cultured or composite) of individual stocks are specifically designated in this report where known. This terminology is not intended to diminish the importance of native stocks but rather emphasizes the need to protect a wide range of genetic resources maintained by natural reproduction. The terms natural and wild spawners are used synonymously as are the terms stocks and spawning populations (see Part 1 -- Stock Definition and Identification for further discussion).

Endangered Species Act (ESA) for anadromous salmonids in the Sacramento, Columbia, and Rogue River basins. Society's impacts have caused past and continuing loss of stocks, as well as diminished abundance, habitat, and genetic diversity. Major land use activities impacting wild salmonid habitat and survival (e.g. urban and industrial growth, forest practices, agricultural practices, municipal, industrial and agricultural diversions, and hydropower) have reduced Washington's salmon and steelhead production over the years and continue to do so at an escalating rate (WDF 1992). Resource management policies linked to production and harvest of hatchery fish also impact the status of many wild stocks. For example, of the 101 total salmon stocks or stock groupings in Washington that have defined and actively managed escapement goals (i.e. primary management units), about one-third are harvested at overall rates determined by hatchery escapement requirements, which may contribute to the depletion of commingled wild stocks. Hatchery programs have generated much public debate, ranging from views that fish culture represents the future of salmon and steelhead in the region, to beliefs that hatcheries are the primary reason that many wild stocks have become depleted. In at least some cases, the impacts of certain hatchery practices on wild stocks have been well-documented as related to factors such as straying, competition and predation. In the future, improved and better coordinated management of habitat protection, harvest management and hatchery production programs will be the key for designing comprehensive strategies to restore wild stocks and the region's fisheries. Evaluation and public support of these strategies will be essential to ensure success.

WILD STOCK RESTORATION INITIATIVE

Wild fish resources and their habitats must be protected and restored in order to maintain viable and healthy fisheries, and to provide for associated ecological, cultural, and aesthetic values. To accomplish this, state and tribal fishery managers have committed additional priority toward a Wild Stock Restoration Initiative (WSRI) that would complement and strengthen ongoing programs to protect healthy stocks and habitats. The managers' overall goal is to:

> **Maintain and restore healthy wild salmon and steelhead stocks and their habitats in order to support the region's fisheries, economies, and other societal values**.

The WSRI has several objectives:

- complete and maintain a resource status inventory of Washington's wild salmon and steelhead stocks[2] ("where are we now")
  - identify stocks and determine their status
  - review and prioritize stock status problems
  - identify priority information needs
- review current resource management goals and objectives for hatchery and wild stocks and the region's fisheries ("where do we want to go")
- develop and implement recovery programs for priority stocks and habitats ("how do we get there")
- maintain adequate monitoring and evaluation programs ("how well did we do and do we need to modify our approach")

Productive aquatic ecosystems are essential for healthy salmon and steelhead populations that provide an important foundation for a strong Northwest economy as well as for a diverse cultural and natural heritage. Managing for stock health and related human benefits requires maintaining adequate resource abundance, productive habitat, and genetically diverse wild stocks. The Washington Departments of Fisheries and Wildlife (WDF and WDW) and Western Washington Treaty Indian tribes have jointly challenged themselves to create opportunities for a positive future that will feature productive aquatic habitats, healthy wild stocks, and adequate levels of fishing. Clearly, strong public support for solving complex problems will be necessary to realize this vision. The WSRI will provide additional focus and resources for the State's and tribes' current fishery resource management mandates. The initiative is intended to produce comprehensive management approaches to restore depleted salmon and steelhead stocks and avoid intensely disruptive and divisive reactions that can result from ESA petitions.

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[2] While the inventory documented in this report reflects primarily an assessment of wild stock status, a clear need exists to develop complementary salmonid habitat and hatchery stock inventories to develop an integrated ability to systematically evaluate salmon and steelhead ecosystems. This need is part of this objective's future intent.

RESOURCE STATUS INVENTORY

This report is the first summary of a Salmon and Steelhead Stock Inventory (SASSI) of naturally reproducing fish in Washington State - the first step in the statewide Wild Stock Restoration Initiative. SASSI provides an approach for developing a list of salmon and steelhead stocks and a process for rating their current status. Stock lists, classifications and ratings will be updated as additional information becomes available.

The concept of resource inventories is not new - fishery management agencies spend considerable staff time collecting and assessing resource status data, e.g. spawning escapements, harvests and biological parameters. This information is routinely used for decision-making but often is not well documented or visible outside the "management process." As a result, an objective of SASSI has been to develop a simple and consistent system of collating and reporting statewide salmon and steelhead resource assessment information, recognizing the inventory will change over time. For the Columbia basin, this initial inventory incorporated information already available from the subbasin plans and recently summarized as part of the Coordinated Information System project. In the Coastal and Puget Sound regions, state and tribal biologists collated data from a number of sources within the management entities. Future updates of SASSI and associated reports will evolve as necessary to accommodate new information and be integrated with developing regional resource information systems. The planned growth and refinement for SASSI is an important point. This initial report, and related data collation, was developed in a short time period - about nine months. Given the large number of stocks in the inventory, the amount of detailed data and depth of analysis has been strictly limited by the schedule. This report is meant to provide a first glimpse of current stock status and build a foundation for future restoration and inventory efforts.

In addition to highlighting the inventory's intent, it is important to note that SASSI is <u>not</u>:

- a compendium of all that is known about each salmon and steelhead stock
- a historical review of past losses of stocks or habitats
- a detailed review of harvest management
- a habitat or hatchery stock inventory
- a detailed review of the impacts of salmonid culture programs on the status of native stocks
- a risk assessment of future threats of extinction or other stock damage

- a report outlining specific stock restoration programs

Clearly these and other steps will be necessary and are anticipated to follow the inventory, but this first SASSI report simply is intended to build a foundation for the WSRI. The subsequent steps and the process envisioned for the overall initiative are presented in Part 3 -- Current and Future Actions.

It should be noted that the status information in this first report largely relates to numerical abundance rather than interpretation of genetic fitness. This initial orientation is not intended to discount the importance of any stock's genetic status but reflects a subsequent need to perform genetic risk assessments throughout the state in a systematic manner. Many genetic impacts to the region's wild stocks have occurred over time from cumulative impacts of habitat degradation, harvest policies and hatchery practices. Most stock abundance problems identified in the 1992 inventory have related genetic concerns that will be carefully evaluated during the restoration development phase. State and tribal biologists involved in the inventory also have been alert to identify current or new genetic impact issues that may require priority attention. Stock origin (native, non-native and mixed) has been presented for each stock and discussions about potential genetic influences have been included in the regional appendices.

Report Content and Organization

The 1992 SASSI report is organized so that the reader proceeds from general discussions to more detailed information used in the process of identifying individual stocks and determining their status. This report highlights the general background of the inventory effort and provides a summary of stock status for the reader who may not desire to review the stock status detail found in three regional appendices. The report is comprised of the following sections:

Part 1 -- Stock Definition and Identification: This section defines the term stock as used in this inventory and compares it with other stock definitions that are commonly used. The process of applying the SASSI stock definition to the region's spawning populations to create an inventory stock list is also described.

Part 2 -- Stock Status: This section discusses the two-step process that was used to identify those salmon and steelhead stocks (spawning populations) that are at low

abundance levels. A set of screening criteria, based on population trends or changes in fitness, were developed to assess the current status of each stock. Individual stocks were then rated using five stock status categories developed specifically for the SASSI process.

Part 3 -- Current and Future Actions: This section describes the process envisioned for applying the inventory results to the objective of restoring priority stocks and addressing key information needs. This is followed by a description of the annual review process that will allow for future modifications of SASSI, making SASSI a living inventory of salmon and steelhead stocks. The steps and process for developing cooperative state/tribal restoration plans for regions, watersheds or specific stocks are outlined. A brief discussion of current stock rehabilitation programs is also included.

The **Sources of Information** section presents a list of publications cited in SASSI plus a list of general reference documents.

The **Glossary** provides definitions of terms developed specifically for SASSI and also defines a number of general terms used in the text.

The **Supplemental Stock Information** section presents annotated stock lists with descriptions of escapement levels, spawning distribution, and the stock definition criteria for each stock. Additional tables are presented by species that document stock origin, production type and status for each stock.

Regional Appendices

Three supplemental appendix volumes provide specific information on each stock currently listed in SASSI for the Columbia River, Coastal, and Puget Sound regions. These appendices are organized by basins with an overview description for each species, followed by individual Stock Reports. Each Stock Report includes a:

- Narrative: This section discusses stock definition, origin, and status information. It also provide a brief discussion of habitat, harvest, hatchery and other factors that may be affecting production for stocks whose status is rated depressed or critical, or in some cases unknown.

- Stock profile: This is a visually oriented, two-page section that contains information used to identify individual stocks and rate their status. The amount of information included in the stock profile reflects the availability of data and state of analysis for any given stock.

PART 1 -- STOCK DEFINITION AND IDENTIFICATION

STOCK DEFINITION

The first task in developing this resource inventory was to arrive at a meaningful definition of the units of fish on which to base the assessment. A number of options were considered: watersheds; management units (or runs), which form the basis for the region's fishery management; evolutionarily significant units (ESU's), which is the species definition used by National Marine Fisheries Service (NMFS) for ESA; and stocks (or spawning populations). Stocks were chosen as the basis for this inventory for several reasons. They provide the finest resolution of all the units considered and allow assessment of larger units by combination; stocks form the basic building blocks of Northwest salmon and steelhead management; and stock units are widely accepted within the scientific community as a basis for evaluating fish populations.

The definition of the term "stock" and its application frequently present difficulties because the distinctions between different groups of animals are often difficult to measure, and because the term is used for a variety of purposes. For example, as applied in bottomfish management, a stock is a group of fish that exhibits a homogeneous response to fishing effort in an area, and may be made up of several breeding populations, or be part of a population. However, in salmonid management a stock is generally considered a discrete breeding population. Ricker (1972) defined salmon stocks as temporally or spatially separated breeding populations. The Puget Sound Salmon Management Plan refers to the fish of a single species that migrate at a particular season to a specific hatchery or independent river system as a stock. NMFS (Waples 1991) also has incorporated reproductive isolation of breeding populations in its ESA "species" definition but departs from the standard stock definition by requiring a spawning group or groups to represent an important evolutionary component of the species (ESU). Nevertheless, in each salmon and steelhead application, the common concept exists of a group of freely interbreeding individuals that are at least partially isolated reproductively from other such groups.

At a stock identification workshop (April 1970) W.E. Ricker presented a paper discussing the origin of salmon stocks that used the following definition:

> "...the term *stock* is used here to describe the fish spawning in a particular lake or stream (or portion of it) at a particular season, which fish to a substantial degree do not interbreed with any group spawning in a different place, or in the same place at a different season. What constitutes a "substantial degree" is open to discussion and investigation, but I do not mean to exclude *all* exchange of genetic material between stocks, nor is this necessary in order to maintain distinctive stock characteristics that increase an individual's expectation of producing progeny in each local habitat.
>
> In some rivers a number of stocks can be grouped together on the basis of similarity of migration times. The word *run* will be used for such groupings. Thus we may speak of a fall run of chinook salmon or steelhead, for example. Each run may comprise a considerable number of stocks."

For the purpose of this inventory we have adopted the following definition which is essentially the same as that proposed by Ricker.

> **<u>SASSI STOCK DEFINITION</u>: The fish spawning in a particular lake or stream(s) at a particular season, which fish to a substantial degree do not interbreed with any group spawning in a different place, or in the same place at a different season.**

It should be noted that some differing views likely will surround any specific definition of stock - this inventory is not attempting to resolve these views or their applications. The purpose of the SASSI definition is simply to provide a clear, consistent and meaningful basis for conducting an inventory of the salmon and steelhead resource in Washington, and does not imply that this definition should be applied for other uses, or that even smaller units of production are unimportant, or that the management of fisheries or fish habitat should be on this basis. Where reproductive isolation has been shown or presumed to

exist in this inventory, it may or may not indicate genetic uniqueness from other stocks. Genetic relationships and evolutionary legacies among stocks, which are central to the species definition used by NMFS under ESA, are second stage questions not directly bearing on the need by state and tribal managers to define stocks for an ongoing inventory program. SASSI stocks have **not** been defined to represent NMFS' definition of evolutionarily significant units. The terms stock and spawning population are used synonymously in this inventory.

Even with SASSI's basic stock definition, considerable uncertainty often occurs in applying it to any specific spawning group because limited direct data exist to evaluate the degree of reproductive isolation among spawning groups. Washington State and tribal fish management entities have inventoried fish populations annually as an integral part of the management process. State and tribal data collection programs focus primarily on gathering information necessary to manage various salmon and steelhead fisheries. Much of the available data is designed to describe the status of management units, and the detailed information needed to identify and evaluate Washington's wild stocks is often quite limited. This lack of detailed data has imposed some restrictions on the development and use of this inventory. It is impossible to ensure that this inventory accurately defines all wild salmon and steelhead stocks in the state. Many stocks listed in this inventory have not been studied in enough detail to be designated as discrete stocks with great certainty. Many others need more refined data to determine whether observed differences in timing or distribution actually represent stock differentiation. This inventory must be viewed as a starting point, and its list of stocks should be expected to evolve with future updates. The stock inventory process will be conducted annually and, as more information is assembled, stocks will be added or deleted based on additional information.

The SASSI process inventories **naturally-reproducing** stocks of salmon and steelhead regardless of origin (including native, non-native, and mixed parentage). Only those stocks that spawn within Washington State were included. Past extinctions have not been included because this is a **current** resource inventory and the historic information on lost stocks is incomplete and often anecdotal. The only extinctions listed in this inventory are those stocks that were thought to exist, based on recent data, but were subsequently found to be extinct.

Due to time constraints, this initial inventory does not include a listing of hatchery stocks and their status. This is a definite limitation of the current review because interrelationships exist between hatchery and wild spawning populations in many watersheds, and because hatchery stocks also represent important genetic resources and are productive components of the fishery resource. Future updates of this inventory will be expanded to encompass hatchery stocks.

The current inventory tends to focus on differences among stocks rather than variability within each stock (e.g. individual differences in traits such as the age at maturity, size, shape, spawning time, and disease resistance). But managing salmonid stocks to maintain historical patterns of genetic variability within spawning populations, as well as genetic diversity among populations, is necessary for the long-term fitness and productivity of each species. This variability and diversity determines the ability of stocks and species to adapt to and successfully reproduce under changing environmental conditions. Resource management practices must address the need to maintain both genetic diversity between stocks and genetic variability within stocks. An explicit genetics policy needs to be developed and incorporated in overall stock management policies as a future wild stock restoration work task.

SASSI STOCKS vs MANAGEMENT UNITS

Fishery management in Washington is largely focused on ensuring a desired level of spawning escapement to meet stock conservation and long-term fishery objectives. For this purpose, groups of stocks are often combined to form **management units** for which an escapement goal, or range of acceptable escapements, is defined, and fisheries are managed to achieve these desired escapement levels. The goal of this inventory is to identify and review the status of individual wild **stocks** of salmon and steelhead in Washington State, as the basic building blocks of the resource. However, these stocks are not necessarily the same as management units defined for fisheries management. This is not a contradictory approach, and listing a stock in this inventory **does not** indicate a change in management units. Maintaining healthy and productive stocks of salmon and steelhead and managing fisheries to achieve specific spawning escapement levels are both important elements of a comprehensive resource management program.

STOCK DEFINITION CRITERIA

Three criteria were used to determine whether a salmon population was a distinct stock for the purpose of this inventory. These criteria are not intended to determine stock origin (i.e. native, non-native or mixed parentage), but rather attempt to identify those groups of salmon and steelhead that appear to represent distinct stocks. The question of stock origin of each identified stock is addressed in subsequent report sections (see Part 2 -- Stock Status and regional Appendices).

Stock Definition Criteria

1) **Distinct spawning distribution.**

2) **Distinct temporal distribution (including spawning or run timing).**

3) **Distinct biological characteristics (e.g. genetics, size, age structure, etc.)**

Each of these criteria is an attribute that can be used to determine whether a group of fish is displaying substantial reproductive isolation. A population of salmon or steelhead meeting any one of the above criteria would be initially classified as a SASSI stock until additional information shows that it should not be considered distinct. The term *distinct* is not intended to imply complete isolation from other stocks. It is recognized that some interchange between populations is a natural part of salmonid biology.

Distinct spawning distribution is the most commonly used criterion for identifying individual stocks in the SASSI process because general information on the geographic location of spawning and spawning habitat is the most readily available. However, spawning distribution often does not show distinct separation and can be difficult to assess. A number of factors must be considered such as: degree of isolation, interchange between spawning groups, and the relationships between spawners in adjacent streams. It is also difficult to measure directly because it requires that spawning distribution of several generations of fish be tracked (i.e. do offspring of each generation return to spawn in the same areas that are substantially separated from areas used by other spawning groups). This criterion must usually be assumed since empirical data is often unavailable and is difficult to collect.

Distinct temporal distribution identifies stock differences based on variations in timing of critical life stages, e.g. spawning or return timing. These timing differences are sometimes very distinct with no overlap between adjacent stocks. Differences are then generally quite obvious and easy to assess from readily collected information. Many cases occur, however, where timing does overlap and the distinction between within-stock variation and distinct stocks becomes less clear.

Distinct biological characteristics can include any observable distinctions between stocks such as size, age structure, scale patterns, parasites, or genetic differences. This criterion is applied in a number of different ways in this inventory. For some stocks, the stock differentiation is based on observable physical attributes. An example would be the distinction between tule and bright fall chinook from the upper Columbia River. These two types of chinook exhibit differences in spawning timing, but can also be characterized by differences in skin and flesh color. In this case, tule and bright fall chinook are designated as separate stocks based on both spawning timing and biological characteristics.

Genetic distinctions are the most common biological characteristic used in this document. There are indirect and direct approaches in SASSI for using genetic characterizations to distinguish among stocks. The indirect approach assumes that in some cases the genetic makeup of a group of fish has been substantially changed by past or continuing introductions of non-native stocks. If these introductions represent a major impact on the native gene pool, it is sometimes assumed that the resulting fish are probably hybridized and are a single genetic stock. In some areas, the introduction of hatchery origin fish (in particular chinook and coho salmon) has impacted the genetic character of stocks in a region, which includes several streams, and it is assumed that the impact of these releases has resulted in one genetic stock in the region.

The direct approach is based on genetic stock identification (GSI), which is a method that can be used to characterize populations of organisms based on the genetic profiles of individuals. The GSI methodology relies on the combined use of biochemical, genetic, and statistical procedures to discriminate among populations.
While the GSI characterization of stocks and testing of stock structure provide a direct measure of genetic interrelationships, it is important to be aware of this approach's limitations. Geneticists can investigate only a tiny and restricted fraction of the genetic traits of salmon by the electrophoretic analysis of proteins. To the extent that characters investigated do not represent the entire genome, the view of genetic interrelationships

could be incomplete. Also, while statistically significant differences among samples provide evidence for the existence of distinct gene pools (i.e. separate stocks), the absence of significant differences does not constitute proof that only a single stock exists.

THE STOCK IDENTIFICATION PROCESS

The SASSI stock list is an effort to identify all existing stocks of salmon and steelhead that naturally reproduce in Washington waters, regardless of origin, including native, non-native, and mixed (or presumed hybrid) stocks. Any separate population of salmon or steelhead that is known to reproduce and rear in the natural environment was included. In river systems or regions with a history of large-scale releases of non-native fish, genetic hybridization often was assumed and stocks were more broadly defined. Another significant problem was encountered in those regions where anadromous fish utilize a variety of small to medium sized streams flowing directly into marine waters. Often the fish from a number of adjacent streams with common habitat characteristics were aggregated into a single stock because of the likelihood of significant interchange of spawners among streams, and because it seemed unlikely that the selective pressures in individual streams would be different enough to create unique stocks. In some cases, however, genetic stock identification data showed enough differentiation to consider the fish in some of these smaller streams to be distinct populations and they were classified as SASSI stocks. Additional studies may be necessary to determine whether multiple stocks exist in situations where spawning areas were combined, or if only a single stock exists where spawning areas were separated, and the results will serve to refine future inventories.

Under some circumstances, very small groups of salmon and steelhead were not considered to be distinct stocks. While no minimum population size criterion is used in the SASSI process, there are a number of small independent drainages to saltwater and to the Columbia River where it is common to observe very low numbers (usually less than 100 individuals) of a particular species of salmon or steelhead. In many cases, these fish are thought to be strays from adjacent stocks and are not likely to represent self-sustaining populations. As an example, adult sockeye salmon are observed in very low numbers in virtually all Puget Sound streams, but the lack of suitable sockeye habitat (accessible large lakes) makes it highly likely that these fish are strays from either Lake Washington or the Fraser River. In other situations, very small streams may contain low numbers of successfully reproducing salmonids but are probably being constantly subjected to hybridization with strays from larger adjacent stocks. Even if successful reproduction is

likely, these small groups of fish are considered to be a part of the larger stock. It is still desirable, however, to ensure their continued existence and protect the habitats of these numerically small groups because they contribute to the overall genetic diversity and productivity of the state's salmonid resources.

To arrive at a preliminary list of stocks, stock assessment biologists identified individual stocks based on the first two criteria - known differences in spacial or temporal distribution. These distinctions were difficult to determine in some cases, particularly in situations where the amount of interchange among adjacent groups of fish was unknown. For example, steelhead were primarily split into individual stocks based on river basins (spawner distribution: major tributaries or smaller independent drainages to saltwater) and summer versus winter run-timing. This preliminary list of salmon and steelhead was then examined using any available information on unique biological characteristics - primarily genetic stock identification data. This review resulted in a number of changes in the list, where additional groups of fish were identified based on observed genetic differences or other biological characteristics. More detailed analysis during future inventories likely will change some stock designations.

This inventory has identified 294 salmon and 141 steelhead stocks statewide, and Table 1 presents a regional summary by species. Individual regional lists for Puget Sound, Coastal, and Columbia River stocks are provided at the end of Part 2 - Stock Status (Tables 9, 10, and 11).

Table 1. Regional and statewide salmon and steelhead stocks.

	CHINOOK	CHUM	COHO	PINK	SOCKEYE	STEELHEAD
PUGET SOUND						
North Puget Sound	15	12	14	7	1	22
South Puget Sound	10	23	11	2	3	13
Hood Canal	1	12	9	3	--	11
Strait of Juan de Fuca	3	8	12	3	--	14
TOTALS	29	55	46	15	4	60
COASTAL						
North Coast	21	6	18	--	3	24
Grays Harbor	9	2	7	--	--	10
Willapa Bay	2	6	1	--	--	6
TOTALS	32	14	26	--	3	40
COLUMBIA RIVER						
Lower Columbia	17	3	17	--	--	23
Upper Columbia	30	--	1	--	2	18
TOTALS	47	3	18	--	2	41
WASHINGTON STATE 435 TOTAL STOCKS	108	72	90	15	9	141

Stock Origin

An understanding of the genetic background of salmon and steelhead stocks in Washington State is an important consideration for the development of any future efforts to restore and maintain these resources. The SASSI process recognizes three categories of stock origin: (1) those stocks of fish that are thought to represent native gene pools, (2) those stocks that resulted from the introductions of non-native fish, and (3) those stocks that are a mix of native and non-native fish, or are substantially genetically altered native fish. A great deal of uncertainty often exists about the genetic histories of many salmon and steelhead stocks. Few salmonid populations in the state have not been exposed to the introduction of non-native stocks sometime in the past hundred plus years of fish culture efforts. Many introductions failed because inappropriate donor stocks were used or, in the early years, because of imperfect knowledge of the life histories of the target species. Many other introductions succeeded, however, and have probably had a significant effect on the genetic makeup of the state's existing salmon and steelhead stocks.

Stock origin definitions were developed to attempt to categorize the genetic history of stocks (based on estimates of the probable genetic interactions with known releases of hatchery fish in the areas used by each stock). The identification of native stocks considered information on stock distribution, timing, genetics, and known releases of hatchery fish and, in the final analysis, was based on the technical judgment of the participants in the SASSI process. The assessments of stock origin presented in this inventory should be considered as preliminary until such time as more detailed information confirms or refutes the current origin designations.

The definitions for stock origin used in SASSI are:

Native -- An indigenous stock of fish that has not been substantially impacted by genetic interactions with non-native stocks, or by other factors, and is still present in all or part of its original range. In limited cases, a native stock may also exist outside of its original habitat (e.g. captive brood stock programs).

Non-native -- A stock that has become established outside of its original range.

Mixed -- A stock whose individuals originated from commingled native and non-native parents, and/or by mating between native and non-native fish (hybridization); or a previously native stock that has undergone substantial genetic alteration.

Unknown -- This description is applied to stocks where there is insufficient information to identify stock origin with confidence.

Production Type

This inventory attempts to describe the naturally reproducing stocks of salmon and steelhead in the state. The origin of a stock refers only to the genetic background of that specific group of fish. To understand more about the nature of an individual stock, it is also necessary to describe the type of spawning and rearing that produced the fish. For example, a stock of salmon or steelhead may be a genetic mixture of native and non-native fish, but in the absence of continuing hatchery releases, the stock may currently be self-sustaining as the result of natural spawning and rearing. These fish would be identified as a stock with a mixed origin of a wild production type. A native stock of fish in a rehabilitation program also can be sustained entirely by fish culture techniques. This situation is typified by Baker River sockeye salmon, a stock that is currently being restored by placing all spawners in an artificial spawning beach facility. This stock would be characterized as a native stock with a cultured production type until such time that program success allows return to natural reproduction.

The terms defining production type are:

Wild -- A stock that is sustained by natural spawning and rearing in the natural habitat, regardless of parentage (includes native).

Cultured -- A stock that depends upon spawning, incubation, hatching, or rearing in a hatchery or other artificial production facility.

Composite -- A stock sustained by both wild and artificial production.

Tables 9, 10, and 11 (Part 2 - Stock Status) present the stock origin and production type for each SASSI stock. It should be noted that there are some distinct differences between species in the proportions of the three production types, which is indicative of different management approaches and hatchery practices utilized for each species.

OTHER INVENTORIES

Salmon and steelhead stock inventories are a normal part of the annual management process in Washington State. These inventories take the form of annual assessments of escapement and run-size and are used to measure the effectiveness of management actions. SASSI differs from these routine assessments because it looks at smaller units of production, it brings this information together in a consistent approach for all salmon and steelhead stocks statewide, and it provides a system for rating stock status.

There have been a number of past regional efforts to inventory salmon and steelhead resources. An early inventory was a 1929/1930 effort that listed Puget Sound and coastal salmon and steelhead stocks by spawning stream, and provided a rating of stock abundance (Washington Department of Fisheries and Game 1931). Other examples would include the Puget Sound and Adjacent Waters Study - Appendix XI - Fish and Wildlife Appendix (Pacific Northwest River Basins Commission 1970) which was a combined effort of WDW and WDF, and the WDF report: A Catalog of Washington Streams And Salmon Utilization (Williams et al. 1974). In the Columbia River Basin, examples have been the Stock Assessment of Columbia River Salmonids (Howell, et al. 1985) and the sub-basin plans for each tributary. In Puget Sound and Washington Coastal areas, a watershed planning effort conducted in 1986-1987 previously identified stock specific production, harvest, and habitat problems within each watershed (unpublished).

In a more recent effort (Nehlsen et al. 1991), a listing of stocks at risk of extinction was presented (hereafter referred to as the Stocks at Risk list). That report has fostered considerable public concern for the status of many Northwest salmonid stocks. While the authors of that report and SASSI used essentially the same definition of stock, the two processes assessed stock status in different ways, resulting in some differences in how stocks were rated. A fundamental difference between the two inventories is that SASSI examines the current status of stocks (abundance and trends), using quantitative data and defined criteria to the extent possible, while the Stocks at Risk report was an attempt to assess the future risk of extinction for selected stocks. Another significant difference

between the two lists was that SASSI is a comprehensive inventory of **all** naturally reproducing salmon and steelhead stocks in the state, while the Stocks at Risk report listed only those stocks thought to be at risk of extinction or of special concern. The Stocks at Risk report also included a number of historically extinct stocks, a category not used in SASSI.

When the SASSI stock list was assembled, it was compared to the Stocks at Risk listing to determine the amount of agreement in identifying stocks (the evaluation of the status of these stocks was not compared due to different approaches to stock rating). A total of 70 Washington State salmon and steelhead stocks were identified as distinct stocks in both inventories. The other 14 stocks identified in the Stocks at Risk report were not included in the SASSI stock list because some groups of fish were considered to be a part of larger stock units, some stocks were not identified as currently present, or for a number of spring chinook stocks, present existence of spawning populations is disputed between state and tribal managers (see Table 2, also Part 2 -- Stock Status, Disputed Stocks).

Table 2. List of stocks from Nehlsen et al. (1991) which are not included in SASSI stock list, with brief notations to indicate the reasons.

PUGET SOUND

CHINOOK SALMON	
Stillaguamish - spring stock	Disputed - see Part 2 -- Stock Status
Skokomish - spring stock	Disputed - see Part 2 -- Stock Status
Dosewallips - spring stock	Historically extinct or not currently verifiable in this system.
Duckabush - fall stock	Included in Hood Canal summer/fall stock.
Dosewallips - fall stock	Included in Hood Canal summer/fall stock.
Elwha - spring stock	Disputed - see Part 2 -- Stock Status
Dungeness - fall stock	Historically extinct or not currently verifiable in this system.
PINK SALMON	
Skokomish	Historically extinct or not currently verifiable in this system.

COASTAL

CHINOOK	
Ozette - fall stock	Historically extinct or not currently verifiable in this system.
Wynoochee - spring stock	Disputed - see Part 2 -- Stock Status

COLUMBIA RIVER

CHINOOK	
Grand Ronde - spring stock	This stock spawns only in Oregon State waters.
CHUM	
Washougal	Historically extinct or not currently verifiable in this system.
STEELHEAD	
Cowlitz - summer stock	No natural production.
Okanogan - summer stock	Included in Methow/Okanogan summer stock.

PART 2 -- STOCK STATUS

Once the stock units were identified, the current status of each stock was assessed based primarily on trends in fish population abundance, spawning escapement, or survival. Detailed abundance data for individual stocks were not always available, primarily because most information has been collected on a management unit basis, and often only limited data existed for stocks. However, escapement and catch data were available for many of the stocks listed in this inventory, and they were the most frequently used information to determine status. Where possible, run-size, survival, and other data have also been used in these determinations.

A two-step process was used to evaluate the status of the state's salmon and steelhead stocks. First, five separate criteria were developed to describe changes in stock status and fitness, and each stock was screened to identify any negative trends in escapement, production, or survival. Stocks that met none of the criteria and were judged to be experiencing production levels within natural variations in survival and consistent with their available habitat were rated as "healthy." Second, stocks meeting one or more of the negative criteria were examined further and placed into categories that rated each stock based on the current condition of the stock.

There are several circumstances that complicated the rating process. When a wild stock of salmon or steelhead experiences an extremely low survival, it is sometimes difficult to know if that survival is within the normal range for the stock, or if it is entering a depressed state caused by human impacts (e.g. habitat destruction or over-fishing). Naturally produced stocks of salmon and steelhead exhibit wide variations in survival, caused in part by changes in freshwater stream flows (droughts and flooding), natural variation in the ocean environment, and biological interactions such as competition and predation (Cooper and Johnson 1992). It is not uncommon for wild stocks to experience one or two extremely low survival years each decade, resulting in low adult returns. This type of natural variation also provides years of above average production.

Some stocks are experiencing survivals that are so low that they are clearly below the level of natural variation. The survivals of other stocks are intermediate between obviously healthy stocks and clearly depressed stocks and are the most challenging to evaluate because they could be experiencing low survivals within the normal range for the stock.

Short-term databases often exacerbate the rating problem because with only a few years of observation it is unlikely that the lowest natural survivals have been documented. The evaluation of stocks with intermediate survivals was based on the collective judgment of the state and tribal technical staff members most familiar with each stock.

The possibility of cycling in the survival rates of various stocks also can create difficulty in rating stock status. These cycles seem to relate to natural variations in oceanic rearing conditions, and possibly to weather-related impacts on freshwater spawning and rearing success. The apparent existence of cycles in survival and production data complicates the task of identifying depleted stocks, since poor stock performance could be the result of natural cyclic variation. Wherever possible, the existence of survival cycles was considered during the stock evaluation process and stocks with production levels within normal ranges of variation (including cyclic variation) were rated healthy.

STOCK SCREENING

The best available escapement, harvest, run-size, and survival data were used to screen each stock of salmon and steelhead for indications of negative production or survival trends. Only stock-specific data were used, which sometimes limited the available data to a short span of recent years. These data were plotted and qualitatively examined for changes in abundance or survival. Often, only a single stock-specific statistic was available to analyze the production trend of a stock. When multiple types of data could be used to examine individual stock status, the available production or survival data sets were examined individually and each stock's rating was based on the statistic(s) that best described current status.

Five stock screening criteria were developed and used in the initial evaluation of each stock for trends in survival, escapement, or production. These criteria do not currently incorporate rigid quantitative formulas because the available stock specific information was often too limited for strict statistical evaluation. More general criteria were applied and decisions were based on the collective judgment of the technical reviewers most familiar with each stock. While this approach likely can be improved in the future with additional and better information, it facilitated this initial stock status classification process. The status of each stock will be subject to ongoing review and refinement in subsequent inventories.

Any stock that met one or more of the five negative performance criteria was subsequently rated in Depressed or Critical categories to identify the probable level of damage suffered by the stock. An "Unknown" category was used for stocks if trend information was unavailable or could not be used to assess stock status. The stock assessment data used for stock screening and the rationales for stock categorizations are presented in Appendix Stock Reports, which are further referenced at the end of Part 2.

The five stock screening criteria are:

(1) Long-Term Negative Trend -- Most Washington salmon and steelhead escapement and production databases span periods of ten to twenty-five years. In that context, a long-term negative trend would be ten years of data showing a consistent drop in a survival or production parameter. The negative trend is the important factor and several high values did not eliminate a stock from being categorized under this criterion.

(2) Short-Term Severe Decline -- A short-term drop in escapement or production is often difficult to distinguish from the amount of natural variation displayed by all naturally produced stocks of fish. It is important, however, to attempt to identify declining stocks as early as possible, so that limiting factors can be recognized and, if possible, corrected before serious damage occurs. The most recent five years of production data were examined for evidence of any significant drop in escapement, run-size, or survival. If two of the five years display production levels that are at or below the historically low values, the stock is included in this category.

(3) Chronically Low -- Stocks in this category are sustaining themselves at levels significantly below their potential. The determination that a stock is chronically low may be based on observed past production levels, or on an assessment that stock performance does not meet expected levels based on available habitat. Chronically low stocks may display declining, stable, or even increasing trends. For stocks that have displayed chronically low production for an extended period, it may be necessary to examine any available data for the years before current stock assessment databases were developed.

(4) Decreases In Fitness -- The ability of a salmon or steelhead stock to sustain itself can be significantly affected by changes in the fitness of the individuals that make up the stock. These changes can be subtle and include factors like changes in adult size or age structure, changes in run-timing, or reduction in genetic variability. Any significant changes in fitness may justify the inclusion of a stock in this category. [**NOTE**: At the current time, very limited information is included in the inventory that allows any quantitative assessment of change in fitness. Explicit intent exists to include data on age structure, size, sex ratios, and other life history characteristics in future updates to allow fitness evaluations.]

(5) Unknown -- There are some stocks of salmon and steelhead that have not been adequately monitored or enumerated. Stocks in this category will have an Unknown status rating. Determination of their status for future inventories will require more intensive stock assessment work.

STOCK STATUS RATING

The stock screening process was used to rate stocks into five status categories. Stocks with escapement, run-size, and survival levels within normal ranges were rated as **Healthy** stocks. Those stocks that currently display low production or survival values were assigned to one of two separate rating categories: **Depressed** stocks or **Critical** stocks, depending on the current condition of the stock. Stocks were also rated as **Unknown** stocks when data limitations did not allow assessment of current status. A rating category for **Extinct** stocks was also included. Definitions and discussions of each of these rating categories are provided below, along with the number of stocks assigned to each category.

The rating of stocks was done during joint state/tribal technical review. The amount and quality of stock data varies between species and regions, which can result in some differences in the application of the rating categories. These ratings represent the collective judgment of the state and tribal staff members most familiar with the status of individual stocks. The annual inventory process and its review will allow these ratings to be changed in the future as more detailed information becomes available, or because of changes in stock status.

Healthy Stocks

> **Healthy -- A stock of fish experiencing production levels consistent with its available habitat and within the natural variations in survival for the stock.**

Healthy stocks represent those currently experiencing stable escapement, survival, and production trends and not displaying a pattern of chronically low abundance. Because wild stocks of salmon and steelhead experience large natural variations in survival (caused by environmental variations), it is not unusual for even the most robust stock to experience occasional low returns or even fail to meet escapement goals. Such fluctuations would not necessarily warrant a change in status unless the stock experiences a consistent declining trend, or a sudden significant drop in production. The Healthy category covers a wide range of stock performance levels, from consistently robust production to those stocks that may be maintaining sustainable levels without providing any surplus production for directed harvests. In other words, the fact that a stock may be classified as Healthy in the inventory process does not necessarily mean that managers have no current concerns about its production status. In addition, due to a lack of information on changes in fitness, some stocks were classified as Healthy that may have been significantly influenced by interactions with non-native stocks. Much current resource management activity focuses on resolving problems for productive stocks to ensure they remain healthy and continue to provide harvest opportunity.

The issue of how to consider habitat degradation, or loss, in assessing the status of individual stocks presents a particularly difficult problem. It is probable that all salmon and steelhead stocks in Washington State have been affected by some level of habitat loss. It might be argued that if a stock has suffered any habitat loss, it cannot be judged to be Healthy. Such an argument is unrealistic, but it would still be desirable to identify some level at which the cumulative impacts of habitat loss have taken a stock out of the Healthy category. Unfortunately, it is difficult to accomplish this task, because individual stocks are faced with such a wide range of different habitat impacts. The SASSI process rates the **current status** of each stock based primarily on trends in survival rates and population size, and does not focus directly on causative factors. Habitat loss, over-fishing, or other factors, may be the reason that a stock is Depressed or Critical, but the rating is based on actual stock performance.

The consideration of available habitat is included in the stock rating definitions for Healthy and Depressed stocks. This approach is an effort to recognize that there have been irreversible losses of habitat and that if stock status were rated against a pristine habitat base, virtually every stock could be rated depressed or worse. Such a result would be of little help in addressing the current need to restore our stocks of salmon and steelhead. To provide a meaningful assessment of current stock status, a flexible definition of "available" habitat is needed. In SASSI, "available" habitat may be habitat that is currently accessible to anadromous salmonids or in some cases may include all habitat that salmon and steelhead could reasonably be expected to utilize, even if currently inaccessible. For example, if a steelhead stock lost access to and/or was blocked from utilizing a substantial proportion of the available habitat in a stream, this was considered in the rating of steelhead stock status. As a result, summer and winter steelhead stocks in the Elwha, North Fork Lewis, and White Salmon rivers were rated as Depressed since all of these systems have hydroelectric dams which block steelhead access to the majority of the available habitat in the drainage.

This definition is not meant to imply that a stock rating will remain Healthy in the face of continuing habitat loss, even if the stock remains in balance with declining habitat. The SASSI process will allow future inventories to identify those Healthy stocks that are in need of attention to help ensure they remain at healthy levels. SASSI will also serve as a baseline against which any future changes in stock performance or habitat availability can be measured.

The SASSI process has identified 151 salmon and 36 steelhead stocks in the Healthy category for a statewide total of 187 Healthy stocks. The number of Healthy stocks of each species in different regions of the state is presented in Table 3. Stocks rated as Healthy represent the largest category of salmon and steelhead stocks in Washington State (Table 7). Healthy stocks are described in more detail in the Annotated Stock Lists (Tables 12, 13, and 14) and in individual Stock Reports (Appendices 1, 2, and 3).

When comparing the number (or proportions) of Healthy, Depressed, or Critical stocks for different regions or different species, it is important to consider the production type of the stock. For example, status of a stock described as a wild production type is based on trends in the naturally spawned and reared production of a stock; status of a stock described as a composite production type is based on trends in both natural production and artificial production (i.e. the sustained release of hatchery fish). The stock origin, production type, and status of each stock are presented in Tables 9, 10, and 11.

Table 3. Regional and statewide summary of **Healthy** stocks of salmon and steelhead

	CHINOOK	CHUM	COHO	PINK	SOCKEYE	STEELHEAD
PUGET SOUND						
North Puget Sound	3	8	4	5	0	7
South Puget Sound	5	18	8	2	0	7
Hood Canal	1	10	4	2	--	0
Strait of Juan de Fuca	1	2	4	0	--	2
TOTALS	10	38	20	9	0	16
COASTAL						
North Coast	12	1	10	--	1	11
Grays Harbor	7	2	7	--	--	5
Willapa Bay	1	6	0	--	--	2
TOTALS	20	9	17	--	1	18
COLUMBIA RIVER						
Lower Columbia	15	1	0	--	--	2
Upper Columbia	9	--	0	--	2	0
TOTALS	24	1	0	--	2	2
WASHINGTON STATE 187 HEALTHY STOCKS	54	48	37	9	3	36

Depressed Stocks

Depressed -- A stock of fish whose production is below expected levels based on available habitat and natural variations in survival rates, but above the level where permanent damage to the stock is likely.

The category of **Depressed** stocks is used to identify those stocks that are experiencing difficulties that contribute to lower than expected numbers of returning fish. These stocks met one or more of the negative performance criteria, but are likely above the level where permanent damage has occurred to the stock. These stocks may currently be producing relatively large numbers of returning fish (e.g. Cedar River sockeye), but have experienced a substantial drop in production or are producing well below their potential. Other stocks may be represented by relatively small numbers of individuals and are chronically depressed - forced to a low production level by some combination of biological, environmental, or human-caused factors. It is not unusual for a stock to stabilize at a low production level by achieving a balance with the particular set of survival pressures controlling its success. While Depressed stocks may not immediately be pushed to Critical status or face extinction, they are vulnerable to any additional negative impacts and can potentially change status very rapidly. Additionally, these stocks often constrain fishery management and harvests of Healthy stocks because of their low abundance.

The SASSI process has identified 78 salmon and 44 steelhead stocks in the Depressed category for a statewide total of 122 Depressed stocks. The number of Depressed stocks for each species in different regions of the state is presented in Table 4. Stocks rated as Depressed represent the second largest category of salmon and steelhead stocks in Washington State (Table 7). Depressed stocks are described in more detail in the Annotated Stock Lists (Tables 12, 13, and 14) and in individual Stock Reports (Appendices 1, 2, and 3).

As discussed under Healthy stocks, it is important to consider production type when comparing the number (or proportions) of stocks in various rating categories for different regions or different species. The stock origin, production type, and status of each stock are presented in Tables 9, 10, and 11.

Table 4. Regional and statewide summary of **Depressed** stocks of salmon and steelhead.

	CHINOOK	CHUM	COHO	PINK	SOCKEYE	STEELHEAD
PUGET SOUND						
North Puget Sound	7	0	3	0	0	2
South Puget Sound	0	0	3	0	3	1
Hood Canal	0	0	5	1	--	5
Strait of Juan de Fuca	1	1	5	1	--	6
TOTALS	8	1	16	2	3	14
COASTAL						
North Coast	3	0	0	--	1	0
Grays Harbor	1	0	0	--	--	2
Willapa Bay	1	0	0	--	--	0
TOTALS	5	0	0	--	1	2
COLUMBIA RIVER						
Lower Columbia	2	2	17	--	--	14
Upper Columbia	20	--	1	--	0	14
TOTALS	22	2	18	--	0	28
WASHINGTON STATE 122 DEPRESSED STOCKS	35	3	34	2	4	44

Critical Stocks

Critical -- A stock of fish experiencing production levels that are so low that permanent damage to the stock is likely or has already occurred.

The **Critical** stock category is reserved for those stocks that have declined to a level where the stock is in jeopardy of significant loss of within-stock diversity or, in the worst case, could face extinction. The loss of within-stock diversity includes such factors as a reduction of range (e.g. spawning and/or rearing distribution), shifts in age at maturity, changes in body size, reduction in genetic variability, or lowered disease resistance. Major shifts in these or other attributes can all lead to significant reductions in a stock's ability to respond to changing conditions. The usual result is reduced survival and run-size. Such stressed stocks can be caught in a downward spiral of ever increasing negative impacts that can lead to eventual extinction. In contrast, stocks in this category might reach an equilibrium with those factors controlling their performance, and could display consistent returns and escapements for an extended period. While such stocks would appear to be stable, they could be delicately balanced, awaiting just one additional negative impact to push them into failure. The Critical stocks identified in the SASSI process are all in need of immediate restoration efforts to ensure their continued existence and to return them to a productive state.

Some other efforts to identify declining stocks of fish have used minimum population sizes as a quantitative measure of poor stock performance. For example, a recent report on Sacramento River winter chinook (NMFS 1987), identified 200 spawning fish in a single return year to be the minimum population level to avoid permanent genetic damage to a stock. These minimum population sizes are derived from calculations of the lowest possible numbers of reproducing adults needed to maintain an effective genetic population. While minimum effective population size criteria can be useful in assessing stock status and the likelihood of a stock incurring genetic damage, they were not used in the SASSI process for several reasons. First, the selection of a single minimum population size (e.g. 200 spawners), may create the perception that stocks exceeding the threshold value are not a Depressed or Critical stock. SASSI attempts to compare a stock's potential population size and the amount of available habitat to its current status, which means that a stock with potential for large population size could theoretically have several thousand spawners and still be in Critical status. Second, it is also possible for very small groups of fish to maintain themselves at productive levels over time, particularly

in situations were the population has achieved equilibrium with a limited amount of habitat. Finally, stocks of salmon and steelhead comprised of small numbers of fish are often extremely difficult to enumerate, particularly in large river systems. If estimates of escapement or run-size have questionable accuracy, using a set minimum population size to measure stock performance makes the criterion difficult or impossible to apply. However, low population estimates can be an important indicator of stock condition and will require more detailed assessments of status and information needs.

The SASSI process has identified 11 salmon stocks and one steelhead stock in the Critical category for a statewide total of 12 Critical stocks. The number of Critical stocks for each species in different regions of the state is presented in Table 5. Stocks rated as Critical represent the smallest category of current salmon and steelhead stocks in Washington State (Table 7). Stock origin, production type, and status of individual stocks are presented in Tables 9, 10, and 11. Critical stocks are described in more detail in the Annotated Stock Lists (Tables 12, 13, and 14) and in individual Stock Reports (Appendices 1, 2, and 3).

Table 5. Regional and statewide summary of **Critical** stocks of salmon and steelhead.

	CHINOOK	CHUM	COHO	PINK	SOCKEYE	STEELHEAD
PUGET SOUND						
North Puget Sound	2	0	0	0	1	1
South Puget Sound	1	0	0	0	0	0
Hood Canal	0	1	0	0	--	0
Strait of Juan de Fuca	1	1	1	2	--	0
TOTALS	4	2	1	2	1	1
COASTAL						
North Coast	0	0	0	--	0	0
Grays Harbor	0	0	0	--	--	0
Willapa Bay	0	0	0	--	--	0
TOTALS	0	0	0	--	0	0
COLUMBIA RIVER						
Lower Columbia	0	0	0	--	--	0
Upper Columbia	1	--	0	--	0	0
TOTALS	1	0	0	--	0	0
WASHINGTON STATE 12 CRITICAL STOCKS	5	2	1	2	1	1

Unknown Stocks

Unknown -- There is insufficient information to rate stock status.

If trend information was not available or could not be used to assess stock status, stocks were rated as **Unknown**. Stocks rated as Unknown may be rated as Healthy, Depressed, Critical, or Extinct once more information is available. Many of the Unknown stocks are comprised of a historically small number of salmon or steelhead. For example, about 70% of the Unknown steelhead stocks are historically small populations.

There is an immediate need to collect information on Unknown stocks. Historically small populations or currently small populations could be especially vulnerable to any negative impacts.

The SASSI process has identified 53 salmon and 60 steelhead stocks in the Unknown category for a statewide total of 113 Unknown stocks. The number of Unknown stocks for each species in different regions of the state is presented in Table 6. Stocks rated as Unknown make up about one-fourth of all salmon and steelhead stocks in Washington State (Table 7). Stock origin, production type, and status are presented for individual stocks in Tables 9, 10, and 11. Unknown stocks are described in more detail in the Annotated Stock Lists (Tables 12, 13, and 14) and in individual Stock Reports (Appendices 1, 2, and 3).

Table 6. Regional and statewide summary of **Unknown** stocks of salmon and steelhead.

	CHINOOK	CHUM	COHO	PINK	SOCKEYE	STEELHEAD
PUGET SOUND						
North Puget Sound	3	4	7	2	0	12
South Puget Sound	4	4	0	0	0	5
Hood Canal	0	1	0	0	--	6
Strait of Juan de Fuca	0	4	2	0	--	6
TOTALS	7	13	9	2	0	29
COASTAL						
North Coast	6	5	8	--	1	13
Grays Harbor	1	0	0	--	--	3
Willapa Bay	0	0	1	--	--	4
TOTALS	7	5	9	--	1	20
COLUMBIA RIVER						
Lower Columbia	0	0	0	--	--	7
Upper Columbia	0	--	0	--	0	4
TOTALS	0	0	0	--	0	11
WASHINGTON STATE 113 UNKNOWN STOCKS	14	18	18	2	1	60

Extinct Stocks

> **Extinct -- A stock of fish that is no longer present in its original range, or as a distinct stock elsewhere. Individuals of the same species may be observed in very low numbers, consistent with straying from other stocks.**

The SASSI process identifies current stocks of salmon and steelhead and makes no effort to identify past extinctions. The past loss of many stocks is an important historical fact that challenges resource management effectiveness. It would be difficult, however, to assemble any kind of comprehensive listing of past extinctions because many of these losses occurred prior to the time that enumeration programs were initiated. Since SASSI is an inventory of the current status of salmon and steelhead stocks, the inclusion of known past extinctions would serve no purpose other than as a reminder of the consequences of ignoring stock status.

The Extinct rating is included here to identify any current and future losses of stocks identified during the annual review and inventory of Washington's salmon and steelhead stocks. The Extinct category is applied in this inventory if a stock that is currently being tracked in escapement or fishery management databases is found to have been extirpated within its native range. Only one stock met this definition of current extinction: **Chambers Creek summer chum**. The SASSI stock screening process revealed that this stock has been absent from Chambers Creek since the early 1980s (see Stock Report - Puget Sound Appendix volume). No other stocks were identified as current extinctions in the 1992 inventory.

STOCK STATUS SUMMARY

Of a statewide total of 435 wild salmon and steelhead stocks identified during the 1992 SASSI process, 187 (43%) were rated as Healthy, 122 (28%) were rated as Depressed, 12 (3%) were rated as Critical, 113 (26%) were rated as Unknown, and one stock was rated as Extinct (Table 7). The number of stocks in each category in different regions of the state is also presented in Table 7. Of the 322 stocks with known status, 58% were rated as Healthy, 38% were rated as Depressed, and 4% were rated as Critical.

While just less than half of the wild stocks in the state were rated as Healthy, they include many medium to large spawning populations and thus represent a large proportion of the

total production of wild salmon and steelhead in Washington. Depressed stocks have not likely experienced permanent damage, but they may need active efforts to return them to more productive levels. Few stocks were rated as Critical and a number of Critical stocks are currently the subject of restoration programs. A substantial number of wild stocks were rated as Unknown and this emphasizes the need to collect stock assessment information for these stocks. More detailed examination and planning will be done for stocks requiring priority attention as part of the Wild Stock Restoration Initiative (see Part 3 -- Current and Future Actions).

Table 7. Regional and statewide summary of salmon and steelhead stock status.

	HEALTHY	DEPRESSED	CRITICAL	UNKNOWN	EXTINCT
PUGET SOUND					
North Puget Sound	27	12	4	28	0
South Puget Sound	40	7	1	13	1
Hood Canal	17	11	1	7	0
Strait of Juan de Fuca	9	14	5	12	0
TOTALS	93	44	11	60	1
COASTAL					
North Coast	35	4	0	33	0
Grays Harbor	21	3	0	4	0
Willapa Bay	9	1	0	5	0
TOTALS	65	8	0	42	0
COLUMBIA RIVER					
Lower Columbia	18	35	0	7	0
Upper Columbia	11	35	1	4	0
TOTALS	29	70	1	11	0
WASHINGTON STATE 435 TOTAL STOCKS	187	122	12	113	1
PERCENT OF TOTAL	43%	28%	3%	26%	0%

DISPUTED STOCKS

For a limited number of salmon and steelhead stocks, state and tribal biologists and managers had differences of opinion that could not be resolved during the inventory development process. The annual SASSI update is intended to provide an opportunity to review these issues as new information becomes available, allowing the stock list, categories, and ratings to change over time. When differences involved stock origin, production type, or stock status designations, they are footnoted in the SASSI Stock List as unresolved and the reader is directed to the individual appendix Stock Reports for further clarification where appropriate. A number of potential stocks also generated a divergence of views as to the current existence of spawning populations or substantial reproductive isolation of spawning groups. As examples, several of these "disputed" stocks deserve special recognition because of their cultural and potential ecological significance.

Tribal managers interpret current data to indicate that spring chinook stocks historically existed, and still exist, in the Stillaguamish, Snohomish, Green, Skokomish, Elwha and Wynoochee river systems. Restoration of these populations is a high tribal priority as these stocks have special cultural significance to the tribes, for example, as part of first salmon ceremonies in the spring and providing cross-seasonal harvest opportunities. Tribal managers believe the current status of these stocks is unknown and, in some cases, are pursuing stock assessment programs to resolve their status. These stocks are not presented in the SASSI Stock Lists, but are summarized below in Table 8 (see Appendix Stock Reports for further discussion).

State managers are open to considering stock assessment and restoration options for early timed chinook in these systems. However, state technical staffs do not believe that current evidence supports the recent existence of these stocks.

Table 8. Disputed spring chinook stocks.

	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
CHINOOK - SPRING			
Stillaguamish	Native	Wild	Disputed
Snohomish	Native	Wild	Disputed
Green	Native	Wild	Disputed
Skokomish	Native	Wild	Disputed
Elwha	Native	Wild	Disputed
Wynoochee	Native	Wild	Disputed

SUPPLEMENTAL STOCK INFORMATION

Two types of supplemental information are provided at the end of this report: (1) regional Annotated Stock Lists, and (2) Stock Lists presented separately for each species. The Annotated Stock Lists (Tables 12, 13, and 14) include short descriptions of escapement levels, run-timing, spawning distribution, and summaries of stock origin and status designations. The species Stock Lists (Tables 15, 16, 17, 18, 19, and 20) contain the same information included in Tables 9, 10, and 11, but are formatted for the reader who is interested in individual species.

SASSI REGIONAL APPENDICES

Detailed information and discussions for each salmon and steelhead stock are presented in separate SASSI Appendix volumes for the Puget Sound, Coastal, and Columbia River regions (Appendices 1, 2, and 3). These appendices include two different types of reports, covering differing levels of detail.

Species Overviews

An overview report is presented for each species of salmon or steelhead within a river basin (or complex of independent streams). These overviews provide discussions of the definition and origin of stocks and review any uncertainties relating to the decisions to list specific stocks. The overviews also present information on trends in escapement and run-size for the combined stocks of each species within a basin.

Stock Reports

Each stock of salmon and steelhead identified in SASSI is the subject of a report which presents detailed written descriptions of the rationales for the stock definitions in a **Stock Definition and Origin** section (which reviews distribution, timing, and biological characteristics) and highlights any related uncertainties or caveats. Stock origin is also addressed with discussions of the probable genetic make-up of each stock, and possible impacts of introduced hatchery fish. The **Stock Status** section of these reports assesses the trends in survival or production for each stock, and discusses the data used to measure current status. Stock ratings are also presented.

The individual stock reports also contain a two page stock profile. The first page of each profile is a **Stock Definition Profile** which summarizes the available evidence relevant to

the three criteria used in defining individual stocks. **Spawning distribution** is shown on a generalized basin map, and distinct distribution is noted if applicable. **Timing** of adult returns and spawning is presented in graphic form, and again any distinctions (differences among stocks) are identified. Any information on unique **biological characteristics** is summarized at the bottom of the stock definition page. The most common data in this category are the results of genetic screening. The results of direct statistical tests of genetic stock structure are often summarized, and a dendrogram showing the average genetic relationship of the stock of interest to other relevant stocks is presented where data allow. A **Stock Status Profile** presents stock status data in tabular and graphic form. These data sets vary by species and stock, depending on the nature of available stock specific information. The purpose of the numerical data is to describe the stock production trends, and these summaries may include data for escapement, catch, total run size, or survival. Available information on the distributions (percentage) of catch and escapement are shown in the form of a pie chart. The final section of the stock profiles presents a summary of stock origin, production type, and current status.

Additional written material was prepared for all stocks whose status was Depressed or Critical, and for some stocks in the Healthy and Unknown categories. The **Factors Affecting Production** section summarizes the possible impacts of harvest management, habitat status, and fish culture programs. The **Harvest Management** section is a general discussion of the fisheries that impact each stock. The **Habitat** section reviews the general condition of the habitat used by each stock, and identifies specific environmental problems known to impact stock survivals. The **Hatchery** section discusses salmon and steelhead culture programs in the areas utilized by each stock, and outlines possible interactions between wild fish and hatchery fish. **These discussions on factors affecting production are only meant to provide a very general overview of the type of problems faced by a stock**. More detailed examinations of these same topics will be developed for those stocks requiring priority attention as part of the overall Wild Stock Restoration Initiative (see Part 3 -- Current and Future Actions).

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)
TABLE 9.

PUGET SOUND SALMON AND STEELHEAD STOCK LIST

PRESENTED BY RIVER BASIN

TRANSBOUNDARY INDEPENDENTS	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
CHUM - FALL			
Sumas/Chilliwack	Native	Wild	Unknown
COHO			
Sumas/Chilliwack	Native	Wild	Unknown
NOOKSACK/SAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK			
NF Nooksack	Native	Composite	Critical
SF Nooksack	Native	Wild	Critical
Samish/MS Nooksack Fall	Non-Native	Composite	Unknown
CHUM - FALL			
NF Nooksack	Native	Wild	Healthy
Mainstem/SF Nooksack	Native	Wild	Unknown
Samish/Independent	Mixed	Composite	Healthy
COHO			
Nooksack	Mixed	Composite	Unknown
Samish	Mixed	Composite	Healthy
N Puget Sound Tribs	Mixed	Wild	Unknown
PINK			
NF/Middle Fork Nooksack	Mixed	Wild	Unknown 1 [1]
SF Nooksack	Native	Wild	Unknown
STEELHEAD - SUMMER			
SF Nooksack	Native	Wild	Unknown

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)

NOOKSACK/SAMISH - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
STEELHEAD - WINTER			
Dakota Cr	Native	Wild	Unknown
Mainstem/NF Nooksack	Native	Wild	Unknown
SF Nooksack	Native	Wild	Unknown
Middle Fork Nooksack	Native	Wild	Unknown
Samish	Native	Wild	Depressed
N. SOUND INDEPENDENTS	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
COHO			
Whidbey Island	Unknown	Wild	Unknown
Orcas Island	Unknown	Wild	Unknown
SKAGIT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK			
Upper Skagit Mainstem/Tribs Summer	Native	Wild	Healthy
Lower Skagit Mainstem/Tribs Fall	Native	Wild	Depressed
Lower Sauk Summer	Native	Wild	Depressed
Upper Sauk Spring	Native	Wild	Healthy
Suiattle Spring	Native	Wild	Depressed
Upper Cascade Spring	Native	Wild	Unknown
CHUM - Fall			
Mainstem Skagit	Native	Wild	Healthy
Sauk	Native	Wild	Healthy
Lower Skagit Tribs	Unknown	Wild	Unknown
COHO			
Skagit	Native	Composite	Depressed
Baker	Unknown	Composite	Unknown
PINK			
Skagit	Native	Wild	Healthy

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)

SKAGIT - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
SOCKEYE			
Baker	Native	Cultured	Critical
STEELHEAD - SUMMER			
Finney Cr	Native	Wild	Unknown
Sauk	Native	Wild	Unknown
Cascade	Unknown	Wild	Unknown
STEELHEAD - WINTER			
Mainstem Skagit/Tribs	Native	Wild	Healthy
Sauk	Native	Wild	Healthy
Cascade	Native	Wild	Unknown
STILLAGUAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK			
Stillaguamish Summer	Native	Composite	Depressed
Stillaguamish Fall	Unknown	Wild	Depressed
CHUM - FALL			
NF Stillaguamish	Native	Wild	Healthy
SF Stillaguamish	Native	Wild	Healthy
COHO			
Stillaguamish	Mixed	Wild	Depressed
Deer Cr	Native	Wild	Unknown
PINK			
NF Stillaguamish	Native	Wild	Healthy
SF Stillaguamish	Native	Wild	Healthy
STEELHEAD - SUMMER			
Deer Cr	Native	Wild	Critical
SF Stillaguamish	Non-Native	Wild	Unknown
Canyon Cr	Mixed	Wild	Unknown

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)

STILLAGUAMISH - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
STEELHEAD - WINTER			
Stillaguamish	Native	Wild	Healthy
SNOHOMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK			
Snohomish Summer	Native	Wild	Depressed
Wallace R Summer/Fall	Mixed	Composite	Healthy
Snohomish Fall	Native	Wild	Depressed
Bridal Veil Cr Fall	Native	Wild	Unknown
CHUM - FALL			
Skykomish	Native	Wild	Healthy
Snoqualmie	Native	Wild	Unknown
Wallace	Native	Wild	Healthy
COHO			
Snohomish	Mixed	Wild	Depressed
Skykomish	Mixed	Composite	Healthy
SF Skykomish	Non-Native	Wild	Healthy
Snoqualmie	Mixed	Wild	Healthy
PINK			
Snohomish Odd-Year	Native	Wild	Healthy
Snohomish Even-Year	Native	Wild	Healthy
STEELHEAD - SUMMER			
Tolt	Unknown	Wild	Depressed
NF Skykomish	Native	Wild	Unknown
SF Skykomish	Non-Native	Wild	Healthy
STEELHEAD - WINTER			
Snohomish/Skykomish	Native	Wild	Healthy
Pilchuck	Native	Wild	Healthy
Snoqualmie	Native	Wild	Healthy

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)

LAKE WASHINGTON	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
CHINOOK - SUMMER/FALL			
Issaquah	Non-Native	Composite	Healthy
N Lake Washington Tribs	Native	Wild	Unknown
Cedar	Native	Wild	Unknown 1 [1]
COHO			
Lk Washington/Sammamish Tribs	Mixed	Composite	Depressed
Cedar	Mixed	Wild	Healthy
SOCKEYE			
Cedar	Non-Native	Wild	Depressed
Lk Washington/Sammamish Tribs	Unknown	Wild	Depressed
Lk Washington Beach	Unknown	Wild	Depressed
STEELHEAD - WINTER			
Lk Washington	Native	Wild	Depressed
DUWAMISH/GREEN	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - SUMMER/FALL			
Duwamish/Green	Mixed	Composite	Healthy
Newaukum Cr	Mixed	Wild	Healthy
CHUM - FALL			
Duwamish/Green	Mixed	Composite	Unknown
Crisp Cr	Non-Native	Cultured	Healthy
COHO			
Green R/Soos Cr	Mixed	Composite	Healthy
Newaukum Cr	Mixed	Composite	Depressed
STEELHEAD - SUMMER			
Green (Duwamish)	Non-Native	Wild	Healthy
STEELHEAD - WINTER			
Green (Duwamish)	Native	Wild	Healthy

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)

PUYALLUP	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
CHINOOK			
White (Puyallup) Spring	Native	Composite	Critical
White (Puyallup) Summer/Fall	Unknown	Wild	Unknown
Puyallup Fall	Unknown	Composite	Unknown
CHUM - FALL			
Puyallup/Carbon	Native	Wild	Unknown
Fennel Cr	Unknown	Wild	Healthy
Hylebos Cr	Unknown	Unknown	Unknown
COHO			
Puyallup	Mixed	Composite	Depressed
White (Puyallup)	Mixed	Composite	Healthy
PINK			
Puyallup	Native	Wild	Healthy
STEELHEAD - WINTER			
Mainstem Puyallup	Native	Wild	Healthy
White (Puyallup)	Native	Wild	Healthy
Carbon	Native	Wild	Healthy
NISQUALLY	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - SUMMER/FALL			
Nisqually	Mixed	Composite	Healthy
CHUM - WINTER			
Nisqually	Native	Wild	Healthy

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)

NISQUALLY - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
COHO			
Nisqually	Mixed	Composite	Healthy
PINK			
Nisqually	Native	Wild	Healthy
STEELHEAD - WINTER			
Nisqually	Native	Wild	Healthy
SOUTH SOUND	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - SUMMER/FALL			
S Sound Tribs	Mixed	Composite	Healthy
CHUM - SUMMER			
Chambers Cr	Native	Wild	Extinct
Hammersley Inlet	Native	Composite	Healthy
Case Inlet	Native	Composite	Healthy
Blackjack Cr	Native	Wild	Healthy
CHUM - FALL			
Henderson Inlet	Mixed	Composite	Unknown
Eld Inlet	Native	Wild	Healthy
Totten Inlet	Native	Wild	Healthy
Skookum Inlet	Mixed	Composite	Healthy
Upper Skookum Cr	Native	Wild	Healthy
Johns/Mill Crs	Mixed	Wild	Healthy
Goldsborough/Shelton Crs	Native	Wild	Healthy
Case Inlet	Native	Wild	Healthy
Carr Inlet	Mixed	Composite	Healthy
Gig Harbor/Ollala	Mixed	Composite	Healthy
Dyes Inlet/Liberty Bay	Native	Composite	Healthy
Sinclair Inlet	Native	Wild	Healthy

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)

SOUTH SOUND - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
CHUM - WINTER			
Chambers Cr	Native	Wild	Healthy
COHO			
Chambers Cr	Mixed	Composite	Healthy
Deep S Sound Tribs	Mixed	Composite	Healthy
Deschutes	Non-Native	Wild	Healthy
East Kitsap	Mixed	Composite	Healthy
STEELHEAD - WINTER			
Deschutes	Non-Native	Wild	Healthy
Eld Inlet	Native	Wild	Unknown
Totten Inlet	Native	Wild	Unknown
Hammersley Inlet	Native	Wild	Unknown
Case/Carr Inlets	Native	Wild	Unknown
East Kitsap	Native	Wild	Unknown
HOOD CANAL	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - SUMMER/FALL			
Hood Canal	Mixed	Composite	Healthy
CHUM - SUMMER			
Hood Canal	Native	Wild	Critical
Union	Native	Wild	Healthy
CHUM - FALL			
NE Hood Canal	Mixed	Composite	Healthy
Dewatto	Mixed	Composite	Healthy
SE Hood Canal	Mixed	Composite	Healthy
Lower Skokomish	Mixed	Composite	Unknown
Upper Skokomish Late	Native	Wild	Healthy
W Hood Canal	Mixed	Composite	Healthy
Hamma Hamma Late	Native	Wild	Healthy
Duckabush Late	Native	Wild	Healthy
Dosewallips Late	Native	Wild	Healthy
Quilcene Late	Mixed	Composite	Healthy

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)

HOOD CANAL - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
COHO			
NE Hood Canal	Mixed	Wild	Depressed
Dewatto	Mixed	Wild	Depressed
SE Hood Canal	Mixed	Wild	Depressed
Skokomish	Mixed	Composite	Healthy
SW Hood Canal	Mixed	Wild	Healthy
Hamma Hamma	Mixed	Wild	Healthy
Duckabush	Mixed	Wild	Depressed
Dosewallips	Mixed	Wild	Healthy
Quilcene/Dabob Bays	Mixed	Composite	Depressed
PINK			
Hamma Hamma	Native	Wild	Healthy
Duckabush	Native	Wild	Healthy
Dosewallips	Native	Wild	Depressed
STEELHEAD - SUMMER			
Skokomish	1	1	Unknown
Duckabush	1	1	Unknown
Dosewallips	1	1	Unknown
STEELHEAD - WINTER			
Dewatto	1	1	Depressed
Tahuya	1	1	Depressed
Union	1	1	Unknown
Skokomish	1	1	Depressed
Hamma Hamma	Native	Wild	Unknown
Duckabush	1	1	Depressed
Dosewallips	1	1	Depressed
Quilcene/Dabob Bays	1	1	Unknown

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)

STRAIT OF JUAN DE FUCA	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
CHINOOK			
Dungeness Spring/Summer	Native	Wild	Critical
Elwha/Morse Creek Summer/Fall	Native	Composite	Healthy
Hoko Fall	Native	Composite	Depressed
CHUM - SUMMER			
Discovery Bay	Native	Wild	Critical
Sequim Bay	Native	Wild	Depressed
CHUM - FALL			
Dungeness/E Strait Tribs	Native	Wild	Unknown
Elwha	Native	Wild	Unknown
Lyre	Native	Wild	Unknown
DeepCr/E & W Twin	Native	Wild	Healthy
Pysht	Native	Wild	Healthy
Hoko/Clallam/Sekiu	Native	Wild	Unknown
STRAIT OF JUAN DE FUCA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
COHO			
Chimacum Creek	Mixed	Composite	Healthy
Discovery Bay	Mixed	Wild	Critical
Sequim Bay	Mixed	Wild	Depressed
Dungeness	Mixed	Composite	Depressed
Morse Creek	Mixed	Wild	Depressed
Elwha	Mixed	Composite	Healthy
Salt Creek	Mixed	Wild	Healthy
Lyre	Mixed	Wild	Unknown
Pysht/Twin/Deep	Mixed	Wild	Depressed
Clallam	Mixed	Wild	Unknown [1]
Hoko	Mixed	Wild	Healthy
Sekiu/Sail	Mixed	Wild	Depressed

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)

STRAIT OF JUAN DE FUCA - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
PINK			
Upper Dungeness	Native	Wild	Depressed
Lower Dungeness	Native	Wild	Critical
Elwha	Native	Wild	Critical
STEELHEAD - SUMMER			
Dungeness	1 [1]	1	Depressed
Elwha	1	1	Depressed
STEELHEAD - WINTER			
Discovery Bay	Native	Wild	Depressed
Sequim Bay	Native	Wild	Unknown
Dungeness	1	1	Depressed
Morse Cr/Independents	1	1	Depressed
Elwha	Mixed	Wild	Depressed
Salt Cr/Independents	Native	Wild	Unknown
Lyre	1	1	Unknown
Pysht/Independents	1	1	Healthy
Clallam	1	1	Unknown
Hoko	Native	Wild	Healthy
Sekiu	Native	Wild	Unknown
Sail	Native	Wild	Unknown

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 9. PUGET SOUND SALMON AND STEELHEAD STOCK LIST (continued)

TABLE 10.

WASHINGTON COASTAL SALMON AND STEELHEAD STOCK LIST
PRESENTED BY RIVER BASIN

SOOES/OZETTE	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
CHINOOK - FALL			
Sooes	Native	Cultured	Unknown
CHUM - FALL			
Sooes	Non-Native	Cultured	Unknown
Ozette	Native	Wild	Unknown
COHO			
Sooes/Waatch	Mixed	Composite	Unknown
Ozette	Native	Wild	Unknown
SOCKEYE			
Ozette	Native	Wild	Depressed
STEELHEAD - WINTER			
Sooes/Waatch	Native	Wild	Unknown
Ozette	Native	Wild	Unknown
QUILLAYUTE	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - SPRING			
Sol Duc	Non-Native	Composite	Healthy
CHINOOK - SUMMER			
Quillayute/Bogachiel	Native	Composite	Unknown
Sol Duc	Native	Wild	Healthy
Calawah	Native	Wild	Unknown
CHINOOK - FALL			
Quillayute/Bogachiel	Native	Wild	Healthy
Dickey	Native	Wild	Healthy
Sol Duc	Native	Composite	Healthy
Calawah	Native	Wild	Healthy
CHUM - FALL			
Quillayute	Native	Wild	Unknown
COHO - SUMMER			
Sol Duc	Native	Composite	Healthy

TABLE 10. WASHINGTON COASTAL SALMON AND STEELHEAD STOCK LIST (continued)

QUILLAYUTE - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
COHO - FALL			
Dickey	Native	Wild	Healthy
Sol Duc	Native	Composite	Healthy
Bogachiel	Native	Wild	Healthy
Calawah	Native	Wild	Healthy
SOCKEYE			
Lk Pleasant	Native	Wild	Unknown
STEELHEAD - SUMMER			
Sol Duc	1	Wild	Unknown
Bogachiel	1	Wild	Unknown
Calawah	1	Wild	Unknown
STEELHEAD - WINTER			
Quillayute/Bogachiel	Native	Wild	Healthy
Dickey	Native	Wild	Healthy
Sol Duc	Native	Wild	Healthy
Calawah	Native	Wild	Healthy
HOH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - SPRING/SUMMER			
Hoh	Native	Wild	Healthy
CHINOOK - FALL			
Hoh	Native	Wild	Healthy
CHUM - FALL			
Hoh	Unknown	Unknown	Unknown 1 [1]
COHO			
Goodman/Mosquito Crs	Native	Wild	Unknown
Hoh	Native	Wild	Healthy

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 10. WASHINGTON COASTAL SALMON AND STEELHEAD STOCK LIST (continued)

HOH - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
STEELHEAD - SUMMER			
Hoh	Native	Wild	Unknown
STEELHEAD - WINTER			
Goodman Cr	Native	Wild	Unknown
Mosquito Cr	Native	Wild	Unknown
Hoh	Native	Wild	Healthy
KALALOCH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
COHO			
Kalaloch Cr	Native	Wild	Unknown
STEELHEAD - WINTER			
Kalaloch Cr	Native	Wild	Unknown
QUEETS	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - SPRING/SUMMER			
Queets	Native	Wild	Depressed
Clearwater	Native	Wild	Depressed
CHINOOK - FALL			
Queets	Native	Wild	Healthy
Clearwater	Native	Wild	Healthy
CHUM - FALL			
Queets	Unknown	Unknown	Unknown 1 [1]
COHO			
Queets	Native	Composite	Healthy
Clearwater	Native	Composite	Healthy
Salmon R	Non-Native	Composite	Healthy
STEELHEAD - SUMMER			
Queets	Native	Wild	Healthy
Clearwater	Native	Wild	Unknown

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 10. WASHINGTON COASTAL SALMON AND STEELHEAD STOCK LIST (continued)

QUEETS - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
STEELHEAD - WINTER			
Queets	Native	Wild	Healthy
Clearwater	Native	Wild	Healthy
RAFT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - FALL			
Raft	Native	Wild	Unknown
COHO			
Raft	Native	Wild	Unknown
STEELHEAD - WINTER			
Raft	Mixed	Composite	Unknown
QUINAULT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - SPRING/SUMMER			
Quinault	Native	Wild	Depressed
CHINOOK - FALL			
Quinault	Native	Wild	Healthy
Cook Cr	Mixed	Composite	Healthy
CHUM - FALL			
Quinault	Mixed	Composite	Healthy
COHO			
Quinault	Mixed	Composite	Unknown
Cook Cr	Mixed	Composite	Healthy
SOCKEYE			
Quinault	Native	Wild	Healthy
STEELHEAD - SUMMER			
Quinault	Native	Wild	Unknown
STEELHEAD - WINTER			
Quinault/Lk Quinault	Mixed	Wild	Healthy
Quinault	Native	Wild	Healthy

TABLE 10. WASHINGTON COASTAL SALMON AND STEELHEAD STOCK LIST (continued)

MOCLIPS/COPALIS	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
CHINOOK - FALL			
Moclips	Native	Wild	Unknown
Copalis	Native	Wild	Unknown
COHO			
Moclips	Mixed	Composite	Unknown
Copalis	Mixed	Composite	Unknown
STEELHEAD - WINTER			
Moclips	Native	Wild	Healthy
Copalis	Native	Wild	Unknown
GRAYS HARBOR	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - SPRING			
Chehalis	Native	Wild	Healthy
CHINOOK - SUMMER			
Satsop	Mixed	Wild	Depressed
CHINOOK - FALL			
Humptulips	Mixed	Wild	Healthy
Hoquiam	Native	Wild	Healthy
Wishkah	Native	Composite	Healthy
Wynoochee	Native	Wild	Healthy
Satsop	Mixed	Composite	Healthy
Chehalis	Mixed	Wild	Healthy
Johns/Elk & S Bay Tribs	Mixed	Wild	Unknown
CHUM - FALL			
Humptulips	Native	Wild	Healthy
Chehalis	Native	Wild	Healthy

TABLE 10. WASHINGTON COASTAL SALMON AND STEELHEAD STOCK LIST (continued)

GRAYS HARBOR - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
COHO			
Humptulips	Mixed	Composite	Healthy
Hoquiam	Mixed	Composite	Healthy
Wishkah	Mixed	Composite	Healthy
Wynoochee	Mixed	Composite	Healthy
Satsop	Mixed	Composite	Healthy
Chehalis	Mixed	Composite	Healthy
Johns/Elk & S Bay Tribs	Mixed	Composite	Healthy
STEELHEAD - SUMMER			
Humptulips	Native	Wild	Unknown
Chehalis	Unknown	Wild	Unknown
STEELHEAD - WINTER			
Humptulips	Native	Wild	Healthy
Hoquiam	Native	Wild	Healthy
Wishkah	Native	Wild	Healthy
Wynoochee	Mixed	Composite	Healthy
Satsop	Native	Wild	Depressed
Chehalis	Native	Wild	Healthy
Skookumchuck/Newaukum	Mixed	Composite	Depressed
South Harbor	Native	Wild	Unknown
WILLAPA BAY	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - FALL			
Willapa Bay	Mixed	Composite	Healthy
Fall River Early (North R)	Native	Wild	Depressed
CHUM - FALL			
North R	Native	Wild	Healthy
Willapa	Native	Wild	Healthy
Palix	Native	Wild	Healthy
Nemah	Native	Wild	Healthy
Naselle	Mixed	Wild	Healthy
Bear	Native	Wild	Healthy

TABLE 10. WASHINGTON COASTAL SALMON AND STEELHEAD STOCK LIST (continued)

WILLAPA BAY - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
COHO			
Willapa Bay	Mixed	Composite	Unknown
STEELHEAD - WINTER			
North R/Smith Cr	Native	Wild	Unknown
Willapa	Native	Wild	Healthy
Palix	Native	Wild	Unknown
Nemah	Native	Wild	Unknown
Naselle	Native	Wild	Healthy
Bear	Native	Wild	Unknown

TABLE 11.

COLUMBIA RIVER SALMON AND STEELHEAD STOCK LIST
PRESENTED BY RIVER BASIN

LOWER COLUMBIA	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
CHINOOK - SPRING			
Cowlitz	Mixed	Composite	Healthy
Kalama	Mixed	Composite	Healthy
Lewis	Mixed	Composite	Healthy
CHINOOK - FALL			
Grays R	Mixed	Composite	Healthy
Skamokawa Cr	Mixed	Composite	Healthy
Elochoman	Mixed	Composite	Healthy
Mill Cr	Mixed	Composite	Healthy
Abernathy Cr	Mixed	Composite	Healthy
Germany Cr	Mixed	Composite	Healthy
Cowlitz	Mixed	Composite	Healthy
Coweeman	Mixed	Composite	Healthy
SF Toutle	Unknown	Composite	Depressed
Green (Toutle)	Unknown	Composite	Depressed
Kalama	Mixed	Composite	Healthy
Lewis	Native	Wild	Healthy
EF Lewis	Native	Wild	Healthy
Washougal	Mixed	Composite	Healthy
CHUM - FALL			
Grays R	Native	Wild	Depressed
Hardy Cr	Native	Wild	Healthy
Hamilton Cr	Native	Wild	Depressed

TABLE 11. COLUMBIA RIVER SALMON AND STEELHEAD STOCK LIST (continued)

LOWER COLUMBIA - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
COHO			
Grays R	Mixed	Composite	Depressed
Skamokawa Cr	Mixed	Composite	Depressed
Elochoman	Mixed	Composite	Depressed
Mill Cr	Mixed	Composite	Depressed
Abernathy Cr	Mixed	Composite	Depressed
Germany Cr	Mixed	Composite	Depressed
Cowlitz	Mixed	Composite	Depressed
Coweeman	Mixed	Composite	Depressed
Toutle	Mixed	Composite	Depressed
SF Toutle	Mixed	Composite	Depressed
Green (Toutle)	Mixed	Composite	Depressed
Kalama	Mixed	Composite	Depressed
Lewis	Mixed	Composite	Depressed
E Fork Lewis	Mixed	Composite	Depressed
Salmon Creek	Mixed	Composite	Depressed
Washougal	Mixed	Composite	Depressed
Bonneville Tribs	Mixed	Composite	Depressed
STEELHEAD - SUMMER			
Kalama	Mixed	Wild	Depressed
EF Lewis	Native	Wild	Unknown
NF Lewis	Native	Wild	Depressed
Mainstem Washougal	Native	Wild	Unknown
WF (NF) Washougal	Native	Wild	Unknown
STEELHEAD - WINTER			
Grays R	Native	Wild	Depressed
Skamokawa Cr	Native	Wild	Unknown
Elochoman	Native	Wild	Depressed
Mill Cr	Native	Wild	Depressed
Abernathy Cr	Native	Wild	Depressed
Germany Cr	Native	Wild	Depressed
Cowlitz	Mixed	Wild	Depressed

TABLE 11. COLUMBIA RIVER SALMON AND STEELHEAD STOCK LIST (continued)

LOWER COLUMBIA - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
WINTER STEELHEAD - CONT.			
Coweeman	Native	Wild	Depressed
Mainstem/NF Toutle	Native	Wild	Depressed
Green (Toutle)	Native	Wild	Depressed
SF Toutle	Native	Wild	Healthy
Kalama	Native	Wild	Healthy
Mainstem/NF Lewis	Native	Wild	Depressed
EF Lewis	Native	Wild	Depressed
Salmon Cr	Native	Wild	Depressed
Mainstem Washougal	Native	Wild	Unknown
WF (NF) Washougal	Native	Wild	Unknown
Hamilton Cr	Native	Wild	Unknown
UPPER COLUMBIA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
CHINOOK - SPRING			
Wind	Non-Native	Composite	Depressed
Klickitat	Mixed	Composite	Depressed
Tucannon	Native	Wild	Depressed
Asotin Cr	Native	Wild	Critical
Upper Yakima	Native	Wild	Depressed
Naches	Native	Wild	Depressed
American	Native	Wild	Depressed
Chiwawa	Native	Wild	Depressed
Nason Cr	Native	Wild	Depressed
Little Wenatchee	Native	Wild	Depressed
White R (Wenatchee)	Native	Wild	Depressed
Entiat	Native	Wild	Depressed
Methow	Native	Composite	Depressed
Twisp	Native	Wild	Depressed
Chewuch (Chewack)	Native	Wild	Depressed
Lost R	Native	Wild	Depressed

TABLE 11. COLUMBIA RIVER SALMON AND STEELHEAD STOCK LIST (continued)

UPPER COLUMBIA - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
CHINOOK - SUMMER			
Wenatchee	Mixed	Wild	Healthy
Methow	Mixed	Wild	Depressed
Okanogan	Native	Wild	Depressed
CHINOOK - FALL			
Wind - Tule	Mixed	Composite	Depressed
Wind - Brights	Unknown	Composite	Healthy
White Salmon R - Tule	Mixed	Composite	Depressed
White Salmon R - Brights	Mixed	Composite	Healthy
Klickitat - Tule	Mixed	Composite	Healthy
Klickitat - Brights	Non-Native	Cultured	Healthy
Snake	Native	Wild	Depressed
Yakima - Brights	Unknown	Composite	Healthy
Marion Drain	Native	Wild	Healthy
Hanford Reach	Native	Wild	Healthy
Lk Chelan	Non-Native	Wild	Healthy
COHO			
Klickitat	Mixed	Composite	Depressed
SOCKEYE			
Wenatchee	Mixed	Wild	Healthy
Okanogan	Native	Wild	Healthy
STEELHEAD - SUMMER			
Mainstem Wind	Native	Wild	Depressed
Panther Cr (Wind)	Native	Wild	Depressed
Trout Cr (Wind)	Native	Wild	Depressed
White Salmon R	Unknown	Wild	Depressed
Klickitat	Native	Wild	Unknown
Rock Cr	Native	Wild	Unknown
Walla Walla	Mixed	Composite	Depressed
Touchet	Mixed	Composite	Depressed
Tucannon	Mixed	Composite	Depressed

TABLE 11. COLUMBIA RIVER SALMON AND STEELHEAD STOCK LIST (continued)

UPPER COLUMBIA - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
SUMMER STEELHEAD - CONT.			
Asotin Cr	Mixed	Composite	Depressed
Grande Ronde	Mixed	Composite	Depressed
Yakima	Native	Wild	Depressed
Wenatchee	Mixed	Wild	Depressed
Entiat	Mixed	Wild	Depressed
Methow/Okanogan	Mixed	Wild	Depressed
STEELHEAD - WINTER			
Wind	Native	Wild	Unknown
White Salmon R	Unknown	Wild	Depressed
Klickitat	Native	Wild	Unknown

PART 3 -- CURRENT AND FUTURE ACTIONS

As previously discussed, SASSI is the first step in a Wild Stock Restoration Initiative (WSRI) that has an ultimate goal of maintaining healthy wild salmon and steelhead stocks and their habitats in order to support the region's fisheries, economies and other societal values. The challenge faced by fish managers, legislators, and all of the state's citizens is how to design and implement the WSRI to accomplish this goal. This report's introduction outlines some difficult issues affecting the region's wild stocks; defining and managing future change (e.g. urban growth, land use activities, fisheries, etc.) will be at least as difficult as creating technical solutions. **Because habitat, harvest, hatchery and other species impacts all contribute to wild stock status, coordinated management of these same factors provides comprehensive strategies for restoring healthy stocks and fisheries.** Recent calls for an ecosystems approach to the ESA indicate a need for a system-wide look at watersheds and the various species they support to develop a broad, landscape approach to restoring depleted wild stocks. A hierarchy of responses will be needed. Some measures may be designed to reap broad regional benefits (e.g. changes in Canadian and U.S. management regimes); some may be at a watershed level (e.g. habitat protection and restoration); while others may be very stock specific measures (e.g. targeted culture and enforcement efforts). Clearly, none of the region's management tools alone will solve the problems facing wild stocks. They must be used in concert to provide a reasonable chance for successful stock restoration, or recovery. State and tribal managers have adopted this integrated management philosophy for the WSRI as an approach to challenging the present and improving the future.

As outlined earlier, the objectives for this program are to:

- complete and maintain a resource status inventory of Washington's wild salmon and steelhead stocks ("where are we now" [SASSI])

- review current resource management goals and objectives for hatchery and wild stocks and the region's fisheries ("where do we want to go")

- develop and implement recovery programs for priority stocks and habitats ("how do we get there")

- maintain adequate monitoring and evaluation programs ("how well did we do and do we need to modify our approach")

The potential for success will be affected by several key factors. One important element is the availability of adequate funding. State and tribal managers are faced with the situation of a deteriorating ability to maintain their fiscal resource base on the one hand, and a need to improve wild stock status on the other. Potential budget reductions in many programs such as harvest management, hatchery production, and habitat protection would result in many of the same negative consequences that wild stock restoration is intended to prevent, i.e. risks to wild stocks and reductions in harvest opportunity. Fish management entities will have varying abilities to tackle priority wild stock issues, and the scope and degree to which the WSRI can be implemented successfully will be limited without significant, new funding support. Besides adequate fiscal resources, a necessary willingness must exist to tackle difficult resource management issues and adapt new approaches to complex problems. For instance, the long-term status of fishery resources ultimately will be determined by public support and willingness of land use regulators to deal effectively with growth management and land/water use issues. Resolving conflicts between stock restoration and habitat loss/degradation is central to maintenance of healthy wild stocks and fisheries.

NEXT STEPS: AN INTEGRATED APPROACH

This initial SASSI report represents part of the WSRI's first step, i.e. completing a resource inventory. During 1993, based on the SASSI effort, state and tribal managers will prioritize stock and habitat restoration needs and identify where important information is lacking. A related activity will be to develop public understanding of the implications of depleted stocks. The public distribution of the 1992 SASSI report is intended to serve as a basis for discussing and gathering input on wild stock restoration issues. Citizen participation activities will be used as needed during 1993 to maintain an effective public dialogue about restoration plan development and implementation. Specific strategies will be developed for establishing complementary hatchery stock and habitat inventories.

While the objectives for the subsequent steps have been identified, detailed work planning for related tasks is still being completed. The managers' initial thoughts about next steps in the initiative are briefly presented below to help define needs and solicit additional ideas.

Review of Current Resource Management Goals and Objectives

The resource management review step will begin in 1993, with the intent to make significant progress on the following tasks by December 31, 1993. Specific tasks will include:

- critical review of harvest, habitat management and hatchery production goals and objectives, including definition of long-term stock utilization objectives;
- development of wild stock management/genetics policies and associated guidelines;
- modification of resource management objectives and approaches where needed; and
- evaluation of costs and benefits of alternative resource management strategies

An effective partnership with local governments should be initiated and developed to accomplish critical habitat protection needs. A public involvement process, again, will be implemented parallel to and integrated with technical planning activities.

Recovery Programs

Development of wild stock recovery programs for priority stocks and habitats will begin during the first half of 1993. The intent of these efforts will be to develop early action plans for several priority stocks or watersheds so that significant, new restoration efforts can commence as early as July 1993. Restoration planning and implementation activities will be continuous into the foreseeable future, driven by stock/habitat status priorities and limited by fiscal resources. The success of restoration efforts largely will be determined by the ability to develop credible strategies that have sufficient public consent to proceed with implementation. An essential aspect of this effort will be a broad "multi-public" approach to developing restoration options and building support for the best approaches for solving wild stock problems.

The specific restoration actions taken for a given problem will be determined during plan development and tailored to the specific region, stock, or habitat. Actions could include such things as: habitat restoration, dam passage improvements, fish culture efforts, captive broodstock projects, appropriate hatchery stray monitoring and control, new management strategies to reduce wild stock exploitation rates, and collaboration with local governments to ensure that coordinated and comprehensive plans developed under the state's Growth Management Act address salmon and steelhead habitat needs.

Improved Monitoring and Evaluation

Increased monitoring of wild spawning populations in general will be required to address critical information gaps identified through SASSI and to improve assessment of wild stock abundance trends and stock status. New evaluation efforts will also be an important aspect of determining the effectiveness of restoration actions taken, to ensure that they are having positive rather than negative effects and to modify approaches where needed. Criteria will be defined to gauge success, and evaluation efforts will measure performance of specific actions in both short-term and long-term time-frames. Examples of factors to be evaluated could include: fishery variables (e.g. harvest rates, regulation effectiveness monitoring, and regulation compliance); stock production variables (wild and hatchery survival rates during different life history stages [including those affected by biological impacts such as disease, competition and predation], population characteristics such as genetics and age composition, and correlation with limiting factors); and habitat characteristics (long-term watershed productivity, changes in flow characteristics such as frequency and magnitude of flood events, and changes in critical physical habitat variables for the different species).

ANNUAL INVENTORIES

The SASSI process was designed to facilitate annual review and to update salmon and steelhead stock and habitat status. An overriding conclusion of the technical staff who contributed to the inventory was that many stock issues are clouded with uncertainty. The lack of specific data for many stocks made it difficult to answer questions about stock origin, production type, spawning distribution and stock status; and conclusions are often based on the collective judgment of the participants. The inventory highlights areas of uncertainty and the status of many stocks was listed as "unknown." Some critical information needs already received high priorities in various data collection programs during the fall of 1992. Many other questions will require longer term study. The annual inventories will guide future data collection programs by pointing out stock information deficiencies, and will allow updating and correction of stock status designations as better data become available. Additionally, the annual review process will function as a tool to measure the short-term and long-term success in rehabilitating priority stocks.

The annual inventory will become a part of the salmon and steelhead management cycle for the state agencies and tribes. Stock assessment data (e.g. escapement, catch, and run-size) for each return year will be assembled and analyzed by the fall of the following

year, and future inventories will be completed around the end of each year. This timing is a normal part of the annual management cycle and is the reason that this first inventory (using data through the 1991 return year [1991-92 return year for winter steelhead]) was published in March 1993.

The envisioned review process will be relatively simple. Any aspect of the inventory is subject to review and modification as better information or new approaches are developed. For example, screening criteria and the system for rating stock status could be refined or the types of inventory information could be expanded (e.g. addition of hatchery inventory data). Further, any new information that can be used to redefine the Stock List will be examined and stocks may be added or deleted from the list based on such things as more thorough spawning ground data or more detailed genetic study. The quantitative information on the stock status profile sheets will be updated for all stocks. Each stock will be screened for any change in stock status since the previous inventory, and the various stock status lists will be amended. New stock reports will be prepared for any stocks which have changed status, and for all new stocks. Finally, the inventory results will be published by state and tribal managers in annual SASSI supplements.

Besides the annual update and review process for specific stocks, managers will consider the utility of comprehensive, regionally focused reviews of management performance in periodic cycles throughout Washington. This level of assessment would encourage broader evaluation of status trends and resource management strategies in region-wide contexts that would help identify additional, integrated management opportunities.

CURRENT WILD STOCK PROGRAMS

Numerous resource management activities within the state contribute to the maintenance and restoration of wild stocks. Fishery management programs include harvest management, stock assessment, applied research and evaluation, enforcement of fishery regulations, environmental review and permitting, habitat restoration, public information and education, and fish culture. Many of these efforts are cooperative programs, and often also involve active participation of private citizens; municipal, county, state, and federal agencies; public and private utilities; private businesses; and others. In addition, some programs that affect wild stocks are not the direct responsibility of fishery management agencies, e.g. land use planning and regulation.

It would be impractical to provide a comprehensive listing in this report of all activities designed to restore and maintain wild salmonid stocks and habitats. However, it is important to highlight several examples of statewide programs that address issues of habitat management and water quality and quantity on a broad scale, which are intended to improve stock status in the region. Numerous governments and agencies share responsibility and regulatory authority for land use actions, but none are responsible for coordinated land use management designed to benefit anadromous salmonids (PFMC 1992). Improved coordination, funding, implementation, and evaluation of programs designed to protect and restore salmon and steelhead habitat are important aspects of any long-term restoration strategies. Examples of existing programs include:

- The Timber Fish and Wildlife (TFW) forum - This forum involves a number of state, tribal, and federal agencies, as well as forest industry and other groups concerned with forest land management. Important activities include review of forest practice applications, watershed analysis, and instream wetlands protection. Several priority watersheds designated for intensive TFW studies contain stocks rated as Critical in SASSI.

- The Puget Sound Water Quality Authority - The Authority is a state agency responsible for identification and correction of water quality problems in the Puget Sound basin. The state and tribes participate in the ambient monitoring program to provide baseline water quality data.

- The Chelan Water Resources Forum - This cooperative effort of state, tribal, federal, water users, and other parties developed protocols and guidelines to address issues of water quantity. These included guidelines for minimum instream flows and recognition of the importance of hydraulic continuity in groundwater.

Subsequent steps of the Wild Stock Restoration Initiative will include a specific inventory and review of ongoing habitat, harvest management, and hatchery programs as part of the review of current management goals and objectives. Ongoing programs, including those noted above, will be evaluated in more detail at that time.

With respect to current recovery efforts for individual stocks, many specific examples of wild stock projects designed to improve status of Critical and Depressed stocks are provided in the Stock Reports contained in the regional appendices. Most of the stocks rated as Critical in this report currently have restoration actions in the planning or implementation stage. In the near future, the managers also intend to identify priorities for additional recovery efforts as part of a systematic approach to improving the region-wide status of wild salmon and steelhead.

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OTHER INFORMATION SOURCES

AUXILIARY FISH CATCH RECORD SYSTEM - An interactive computer program which provides statewide daily catch data for both commercially caught (Indian and non-Indian), and ocean sport landings of salmon in Washington waters. These data may be selected on any one or combination of the following parameters: date, catch area, gear type (gillnet, purse seine, beach seine, troll, other gear); or by user groups, including Indian (by individual tribe or in total) or non-Indian. The data used to generate this database are assembled from commercial net fisheries, tribal ceremonial and subsistence allowance, commercial test fisheries, and by salmon punch cards from the recreational fishery. This program resides on the WDF PRIME computer located in the Natural Resources Building in Olympia and on the HARDY computer at the University of Washington in Seattle.

HISTORY -- HATCHERY RELEASE DATA - A statewide interactive computerized database which contains historical release information for all species and races of Pacific salmon by all agencies, tribes and cooperatives. Types of information contained include: species, broodyear, stock, planting date, days reared, numbers and pounds, and stream being planted. This program resides on the Washington Department of Fisheries PRIME computer in the Natural Resources Building in Olympia.

Similar information is available for hatchery steelhead releases in a database on the Washington Department of Wildlife (WDW) PRIME computer at WDW headquarters in Olympia.

PUGET SOUND SALMON RUN RECONSTRUCTION - A computer program which provides escapement and run-size (catch plus escapement) summaries of Puget Sound salmon stocks (excluding sockeye), entering Washington waters through management area 4B. Individual returns for hatchery, off-station and wild salmon are represented by calculations of pre-terminal area net catches in the Strait of Juan de Fuca as well as to extreme terminal and terminal areas. This program resides on the WDF PRIME computer in the Natural Resources Building in Olympia.

SPAWNER ESCAPEMENT INFORMATION -- An interactive computerized database and spawning ground survey data retrieval system which contains salmon spawning ground data for Puget Sound and coastal streams for the period 1935 to present. Data is collected by state, federal, and other governmental entities, as well as treaty tribes and cooperatives. The information contained in this database includes: WRIA and stream number, date, live and dead count, redd count, type count, other species observed, coded comments, and data source code. This program resides on the Washington Department of fisheries PRIME computer in the Natural Resources Building in Olympia.

Wild steelhead spawner escapements for rivers in the Puget Sound, along the Pacific Coast, in Grays Harbor, and in the Lower Columbia River are reported annually in WDW Fisheries Management Division reports. The surveys are conducted cooperatively by WDW and Treaty Indian tribes.

SALMON AND STEELHEAD HARVEST MANAGEMENT REPORTS -- Harvest management plans are prepared cooperatively by the staffs of the WDF, Treaty Indian tribes, Northwest Indian Fisheries Commission, and WDW. These reports are prepared individually for steelhead and all five species of Pacific salmon plus spring chinook. These reports contain the following type of information: predicted returns, desired escapements of hatchery and wild runs, allowable harvests, fishery management recommendations and schedules, and prediction methods. Harvest management reports are available for the current year from WDF and WDW in Olympia.

GLOSSARY

ANADROMOUS FISH -- Species that are hatched in freshwater, mature in saltwater, and return to freshwater to spawn.

BRIGHT CHINOOK -- A race of Columbia River fall chinook characterized by late maturation and spawning, bright skin color and deep red flesh color during freshwater migration.

CRITICAL STOCK -- A stock of fish experiencing production levels that are so low that permanent damage to the stock is likely or has already occurred.

COMPOSITE STOCK -- A stock sustained by both wild and artificial production.

CULTURED STOCK -- A stock that depends upon spawning, incubation, hatching, or rearing in a hatchery or other artificial production facility.

DENDROGRAM -- A graphic summary of the genetic relationships among populations. The horizontal distance at which the stock branches connect indicates the degree of similarity/dissimilarity. The longer the distance at which the branch points connect, the greater the average genetic differences among stocks.

DEPRESSED STOCK -- A stock of fish whose production is below expected levels based on available habitat and natural variations in survival levels, but above the level where permanent damage to the stock is likely.

ELECTROPHORESIS -- A process whereby charged molecules (such as enzymes and other proteins) are separated in an electric field.

ENDANGERED SPECIES ACT (ESA) -- A 1973 Act of Congress that mandated that endangered and threatened species of fish, wildlife, and plants be protected and restored.

ESCAPEMENT -- Those fish that have survived all fisheries and will make up a spawning population.

EVOLUTIONARILY SIGNIFICANT UNIT (ESU) -- A definition of "species" used by NMFS in administering the Endangered Species Act. An ESU is a population (or group of populations) that (1) is reproductively isolated from other conspecific population units, and (2) represents an important component in the evolutionary legacy of the species.

EXTINCT STOCK -- A stock of fish that is no longer present in its original range, or as a distinct stock elsewhere. Individuals of the same species may be observed in very low numbers, consistent with straying from other stocks.

GENE -- A specific unit of genetic material (DNA) that encodes the information for a single genetic trait.

GENE POOL -- The total variety and proportions of alleles within a population.

GENETIC STOCK IDENTIFICATION (GSI) -- A method that can be used to characterize populations of organisms based on the genetic profiles of individuals. The GSI process consists of a series of steps: (1) collect selected tissues from a representative sample of individuals from the population(s) under investigation; (2) develop genetic profiles for the individuals in each population by conducting starch-gel electrophoresis and histochemical staining using tissue extracts; (3) characterize each population by aggregating the individual genetic profiles and computing allele frequency distributions; and (4) conduct statistical tests using the allele counts characterizing each population to identify significantly different populations.

GENOME -- The total genetic composition of an individual. The complete genetic information possessed by an organism.

HEALTHY STOCK -- A stock of fish experiencing production levels consistent with its available habitat and within the natural variations in survival for the stock.

HYBRIDIZATION -- The interbreeding of fish from two or more different stocks.

MANAGEMENT UNIT -- A stock or group of stocks which are aggregated for the purposes of achieving a desired spawning escapement objective.

MIXED STOCK -- A stock whose individuals originated from commingled native and non-native parents, and/or by mating between native and non-native fish (hybridization); or a previously native stock that has undergone substantial genetic alteration.

NATIVE STOCK -- An indigenous stock of fish that has not been substantially impacted by genetic interactions with non-native stocks or by other factors, and is still present in all or part of its original range. In limited cases, a native stock may also exist outside of its original habitat (e.g. captive broodstock programs).

NMFS -- National Marine Fisheries Service.

NON-NATIVE STOCK -- A stock that has become established outside of its original range.

PRODUCTION TYPE -- The method of spawning and rearing that produced the fish that constitute a stock.
RM -- River mile.

SALMONID -- Any member of the taxonomic family Salmonidae, which includes all species of salmon, trout, and char. SASSI deals only with the Pacific salmon (chinook, chum, coho, pink, and sockeye) and with steelhead trout.

SASSI -- Salmon and Steelhead Stock Inventory.

SPAWNING POPULATION -- Synonymous with the term stock.

STOCK -- The fish spawning in a particular lake or stream(s) at a particular season, which fish to a substantial degree do not interbreed with any group spawning in a different place, or in the same place at a different season.

STOCK ORIGIN --The genetic history of a stock.

STOCK STATUS -- The current condition of a stock, which may be based on escapement, run-size, survival, or fitness level.

TREND -- The directional change in a time series data set.

TULE CHINOOK -- A race of Columbia River fall chinook characterized by early maturation and spawning, dark skin color and pale flesh color during freshwater migration.

UNKNOWN STOCK -- This description is applied to stocks where there is insufficient information to identify stock origin or stock status with confidence.

WDF – Washington Department of Fisheries.

WDW – Washington Department of Wildlife.

WILD STOCK -- A stock that is sustained by natural spawning and rearing in the natural habitat, regardless of parentage (includes native).

SUPPLEMENTAL
STOCK INFORMATION

ANNOTATED STOCK LISTS

Annotated Stock Lists present brief descriptions of each stock of salmon and steelhead, including the range of observed spawner escapements, general spawning distribution and spawner timing, stock origin, production type, stock status, and the kind of data used to assess stock status. Three separate Annotated Stock Lists include all salmon and steelhead stocks within the Puget Sound, Coastal Washington, and Columbia River regions (Tables 12, 13, and 14). Each list is organized by river basin (or complex of independent streams) and by species within each basin.

The following is an example from an Annotated Stock List, followed by a brief discussion of the types of information included.

LAKE WASHINGTON

SOCKEYE -

CEDAR –

Escapement -- 76,000 -- 365,000 (1967-1991)
Description -- September through January spawning period, with occasional observations of spawners in August and February. This stock spawns throughout the Cedar River (to pipeline at RM 21), and the lower portions of its tributaries. These fish were introduced into the Cedar River in the 1930s through fry plants of Skagit sockeye.
Origin and Production Type -- A **non-native** stock of **wild** production type.
Status -- **Depressed** based on a **long-term negative trend** in freshwater survival (presmolts per spawner) and escapement.

Escapement -- When a range of numbers (and years) are presented, the numbers represent the lowest and highest **total escapements** of that stock during the specified time period. Total escapements are direct estimates of the annual escapements of all spawners of a particular stock. In some cases, **indirect escapement** values like fish per mile, redds per mile, peak fish counts, or total escapement for an index area are presented. These indirect escapements do not represent total numbers of spawners, but are standardized annual counts conducted in specific spawning areas (indexes) to assess trends in escapements. For many stocks, escapements are listed as **unknown**, and this notation only indicates that total escapement estimates are not available for the individual stock. There are often indirect escapement numbers available for these stocks, which may have been used to rate stock status. In the above example, the total escapements of Cedar River sockeye ranged from 76,000 to 365,000 for the years 1967 through 1991.

Description -- For each stock, general spawning timing and distribution information is presented to help distinguish the particular group of fish that constitute the stock. Spawner timing and distribution are the characteristics most often used to separate stocks. For many stocks additional information is included in the descriptions. For example the introductions of hatchery fish are often noted because of the possible influence on stock origin.

Origin and Production Type -- The stock origin and production type from Tables 9, 10, and 11 are summarized for each stock.

Status -- Stock status from Tables 9, 10, and 11 is presented for each stock. The screening criteria used to rate status are included for Depressed and Critical stocks, along with the type of data used to make the status determination. In the sockeye example above, status is Depressed based on the long-term negative trend observed in freshwater survival and escapement.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)

PUGET SOUND SALMON AND STEELHEAD STOCKS

TRANSBOUNDARY INDEPENDENTS

CHUM - Fall

SUMAS/CHILLIWACK –

Escapement -- Unknown

Description -- Late October through early January spawners. This group of fish spawns in Saar Creek and other tributaries to the Sumas River. It is likely a part of the large native Vedder-Chilliwack (Fraser River) stock.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

COHO -

SUMAS/CHILLIWACK –

Escapement -- Unknown

Description -- Late October through early January spawners. This stock spawns throughout the Sumas and Chilliwack/Vedder (Fraser River) system.

Origin and Production Type --A **native** stock with **wild** production

Status -- **Unknown**

NOOKSACK/SAMISH

CHINOOK -

NORTH FORK NOOKSACK --

Escapement -- Levels based on carcass counts.

Description -- August through early September spawners. This stock spawns in the North Fork Nooksack downstream to the confluence with the Middle Fork. Escapement levels are believed to number under 300/year based upon carcass counts, which have averaged 43 from 1985-1991.

Origin and Production Type - A **native** stock with **composite** production.

Status - **Critical** based on **chronically low** escapement.

SOUTH FORK NOOKSACK --

Escapement -- Total escapement not available

Description -- September spawners. This stock spawns from RM 0.0 to RM 31, with the most concentrated spawning taking place between RM 14 and RM 30.4.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Critical** based on **chronically low** redd counts.

SAMISH/MAINSTEM NOOKSACK --

Escapement -- Natural escapement levels unknown.

Description -- Late September through October spawners. This stock spawns from RM 8.2 to RM 10.5 in the Samish, with occasional spawning above the hatchery rack (above RM 10.5) and in the lower reaches of Friday Creek.

Origin and Production Type -- A **non-native** stock of **composite** production.

Status -- **Unknown** (depends on hatchery production)

Nooksack/Samish - Cont.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
CHUM - Fall

NORTH FORK NOOKSACK --

Escapement -- 4,500 -- 58,000 (1968-1991)
Description -- Late November through early January spawners primarily in North Fork sloughs, side channels, and larger tributaries (Maple Cr. and others).
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

MAINSTEM/SOUTH FORK NOOKSACK --

Escapement -- Unknown, included in North Fork Nooksack escapements.
Description -- November through December spawners in side channels of South Fork, mainstem Nooksack and tributaries (Fishtrap, Bertrand, Ten Mile creeks, others). Some appear to be physically different (smaller, darker).
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Unknown**

SAMISH/INDEPENDENT DRAINAGES –

Escapement -- Samish 100 -- 5,100; Independent Drainages 130 --4,300; Bellingham Heritage 0 -- 4,700 (1968-1991)
Description -- Late October through early December spawners in Samish, Chuckanut, Oyster, Colony and Whitehall creeks. Chums have also been documented in Dakota and California Creek drainages. Native fish may have been closely related and physically similar to lower Nooksack fish.
Origin and Production Type -- A **mixed** stock with **composite** production.
Status -- **Healthy**

COHO -

NOOKSACK --

Escapement -- 500 -- 5,500 (1967-1991)
Description -- Late October through mid-January spawners. These fish spawn in the mainstem Nooksack as well as the North Fork, South Fork and Middle Fork.
Origin and Production Type -- A **mixed** stock with **composite** production.
Status -- **Unknown**

SAMISH –

Escapement -- 500 -- 11,000 (1967-1991)
Description -- November through mid-January spawners. These fish spawn in all accessible tributaries, including those flowing into Samish Lake.
Origin and Production Type -- A **mixed** stock with **composite** production.
Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Nooksack/Samish Coho - Cont.

NORTH PUGET SOUND TRIBS --

Escapement -- 200 -- 700 (1967-1991)

Description -- November through early January spawners. This group of independent streams includes, but is not limited to, the Dakota Creek system, California Creek, Terrel Creek, Fingalson Creek, Lummi River, Padden Creek, Chuckanut Creek, Oyster Creek, Colony Creek and Whitehall Creek.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Unknown**

PINK -

NORTH FORK/MIDDLE FORK NOOKSACK --

Escapement -- 15,000 -- 137,600 (1967-1991)

Description -- Late August through September spawners (odd-years only) in mainstem Middle Fork, and accessible tributaries of the North Fork. Impacted by extreme habitat degradation. Escapements fluctuate greatly due to environmental instability.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Unknown** (unresolved by state and tribes - see Appendix Stock Report).

SOUTH FORK NOOKSACK --

Escapement -- Included in above, generally less than 1,000.

Description -- Peak of spawning slightly later than other forks, possibly due to temperature. Reported by long-time residents to have once been numerous. Not so in historical records.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

STEELHEAD - Summer

SOUTH FORK NOOKSACK --

Escapement -- Unknown. Spawning escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown. A distinct stock based on the geographical isolation of the spawning population in the South Fork Nooksack River. It is the only summer steelhead stock in the Nooksack River system.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

STEELHEAD - Winter

DAKOTA CREEK --

Escapement -- Unknown. Spawning escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but probably similar to other winter steelhead stocks (mid-February to early June). A distinct stock based on geographical isolation of the spawning population in Dakota Creek, its forks and tributaries. Dakota Creek is an independent drainage flowing into Drayton Harbor near Blaine.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Nooksack/Samish Winter Steelhead - Cont.

MAINSTEM/NORTH FORK NOOKSACK --

Escapement -- 8 -- 45 redds/mile in index area (1984-1992)

Description -- March through June spawning period. A distinct stock based on geographical isolation of the spawning population in the mainstem Nooksack River, North Fork Nooksack River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, uncertain whether redds/mile in index is representative of spawner escapement for stock.

SOUTH FORK NOOKSACK --

Escapement -- 10 -- 29 redds/mile in index area (1984-1992)

Description -- Mid-February to mid-June spawning period. A distinct stock based on geographical isolation of the spawning population in the South Fork Nooksack River. .

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, uncertain whether redds/mile in index is representative of spawner escapement for stock.

MIDDLE FORK NOOKSACK --

Escapement -- 5 -- 56 redds/mile in index area (1984-1992)

Description -- March to May spawning period. A distinct stock based on geographical isolation of the spawning population in the Middle Fork Nooksack River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, uncertain whether redds/mile in index is representative of spawner escapement for stock.

SAMISH –

Escapement -- 106 -- 1,058 (1985-1991). Escapement goal = 700.

Description -- Mid-February through May spawning period. A distinct stock based on geographical isolation of the spawning population in the Samish River, Friday Creek, and their tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Depressed** based on **short-term severe decline** in spawner escapement.

NORTH SOUND INDEPENDENTS

COHO -

WHIDBEY ISLAND --

Escapement -- Unknown

Description -- Spawning timing unknown. Small coho runs return into south Whidbey independent streams.

Origin and Production Type -- A stock of **unknown** origin and **wild** production.

Status -- **Unknown**

ORCAS ISLAND --

Escapement -- Unknown

Description -- Spawning timing unknown. These fish spawn in Cascade Creek and possibly other drainages on Orcas Island.

Origin and Production Type -- A stock of **unknown** origin and **wild** production.

Status -- **Unknown**

SKAGIT

CHINOOK -

UPPER SKAGIT MAINSTEM/TRIBS - SUMMER --

Escapement -- 3,300 -- 12,900 (1974-1991)

Description -- September through early October spawners. This stock spawns in the mainstem Skagit and associated tributaries upstream of the Sauk River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

LOWER SKAGIT MAINSTEM/TRIBS - FALL--

Escapement -- 1,200 -- 5,500 (1974-1991)

Description -- October spawner. This stock spawns in the Skagit mainstem and associated tributaries downstream from the mouth of the Sauk River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on a **long-term negative trend** and a **short-term severe decline** in escapement levels.

LOWER SAUK - SUMMER --

Escapement -- 400 -- 2,700 (1974-1991)

Description -- September through early October spawners below RM 39.7

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement levels.

UPPER SAUK - SPRING --

Escapement -- 100 -- 1,800 (1968-1991)

Description -- Late July through early September spawners in the Sauk River from Darrington to RM 39.7

Origin and Production Type -- A **native** stock with **wild** production.

Status --**Healthy**

Suiattle - Spring --

Escapement -- 300 -- 1,800 (1968-1991)

Description -- Late July through early September spawners in the Suiattle and tributaries

Origin and Production Type -- A **native** stock with **wild** production.

Status --**Depressed** based on **chronically low** escapement levels.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Skagit Chinook - Cont.

UPPER CASCADE - SPRING --

Escapement -- Unknown

Description -- Late July through early September spawners from RM 6 to RM 19 in the Cascade River

Origin and Production Type -- A **native** stock with **wild** production

Status -- **Unknown**

CHUM - Fall

MAINSTEM SKAGIT --

Escapement -- (odd-years, total Skagit system) 3,200 -- 83,000 (1969-1991)

Escapement -- (even-years, total Skagit system) 19,000 -- 160,000 (1968-1990)

Description -- Mid-November through late December spawners primarily in mainstem Skagit, larger tributaries and side channels, downstream to at least RM 34. Strong odd-/even- year fluctuation in abundance.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

SAUK --

Escapement -- Unknown, included in mainstem Skagit above.

Description -- These fish spawn from November through mid-December throughout the Sauk drainage from the confluence with the Skagit to at least RM 35 (Falls Creek).

Origin and Production Type -- A **native** stock with **wild** production.

Status --**Healthy**

LOWER SKAGIT TRIBS --

Escapement -- Unknown, included in mainstem Skagit above.

Description -- Small October through November spawning component found in Finney Creek and other lower Skagit River tributaries (O'Toole, Pressentin, Mill creeks, others).

Origin and Production Type -- A **unknown** stock with **wild** production.

Status -- **Unknown**

COHO -

SKAGIT --

Escapement -- 7,800 -- 45,000 (1967-1991)

Description -- November through mid-January spawners, although there is a wide range of run and spawning timing observed throughout the system (returns and spawning as early as September and as late as March). These fish spawn in all accessible tributaries, as well as mainstem side channels.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Depressed**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Skagit Coho - Cont.

BAKER --

Escapement -- 360 -- 5,718 (1967-1991)from Baker River trap counts. These trap counts may include non-Baker stock returns and "Baker stock" returns to Skagit Hatchery are questionable with regard to genetic integrity.

Description -- Early returning (August through September) but January to February spawners. These fish are collected near the mouth and trucked to Baker Lake. They spawn in the lower ends of Baker Lake tributaries. There is also occasional straying of Baker hatchery stock fish that spawn in the lower two miles of the Cascade River and in assessable areas in the Baker River (and tributaries) approximately nine miles upstream of the lake.

Origin and Production Type -- A stock of **unknown** origin with **composite** production.

Status -- **Unknown**

PINK -

SKAGIT --

Escapement --100,000 -- 710,000 (1967-1991)

Description --These fish spawn mid-September through October in the mainstem Skagit and larger tributaries (Goodell, Bacon, Diobsud, Cascade, Illabot, others). Earlier spawning component (late August-September) in upper Sauk and Suiattle tributaries has not been shown to be genetically distinct.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

SOCKEYE -

BAKER --

Escapement -- 92 -- 10,000 (1967-1992)

Description -- June through mid-August and spawn from late September through December. This stock returned historically to Baker River and Lake which is now blocked by two dams. All returning adults are trapped and hauled to artificial spawning beaches. Downstream migration probably heavily impacted by dams. These fish enter the river from June through August.

Origin and Production Type -- A **native** stock with **cultured** production.

Status -- **Critical** due to **chronically low** escapements.

STEELHEAD - Summer

FINNEY CREEK --

Escapement -- Unknown. Spawning escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- A distinct stock based on geographical isolation of the spawning population in Finney Creek. Specific spawning distribution is unknown, but spawning is generally believed to take place in the upper reaches of the creek. Spawn timing is unknown. This would geographically isolate the summer steelhead in Finney Creek from other summer steelhead stocks in the Skagit River system.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Skagit Summer Steelhead - Cont.

SAUK --

Escapement -- Unknown. Spawning escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Mid-April through May spawning period. A distinct stock based on the geographical isolation of the spawning population. Wild summer steelhead are found in the Sauk basin only in its forks and possibly the mainstem Sauk immediately downstream from the forks.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

CASCADE --

Escapement -- Unknown. Spawning escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- A distinct stock based on the geographical isolation of the spawning population in the Cascade River and its forks. Distinct from wild winter steelhead in the Cascade River based on run-timing. Spawning distribution unknown but believed to be in the upper reaches of the river. This would geographically isolate summer steelhead in the Cascade River from other summer steelhead stocks in the Skagit River system. Mid-January to late April spawning period.

Origin and Production Type -- **Unknown-**origin stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

STEELHEAD -Winter

MAINSTEM SKAGIT/TRIBUTARIES --

Escapement -- 2,544 -- 8,042 (1978-1992)

Description -- Early March through June spawning period. A distinct stock based on the geographical isolation of the spawning population in the mainstem Skagit River and all its tributaries except the Sauk River and Cascade River.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

SAUK --

Escapement -- 712 -- 4,740 (1978-1991)

Description -- Early March to mid-July spawning period. A distinct stock based on the geographical isolation of the spawning population. Wild winter steelhead spawning in Sauk, Suiattle, and Whitechuck rivers and their tributaries and forks are included in this stock. Spawning takes place throughout the basin with peak activity occurring between RMs 13.5 and 21 in the mainstem Sauk.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

CASCADE --

Escapement -- Unknown. Spawning escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- A distinct stock based on the geographical isolation of the spawning population in the Cascade River. Spawning period is unknown but believed to be similar to other winter steelhead stocks in the Puget Sound region (early March through June).

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**

STILLAGUAMISH

CHINOOK -

STILLAGUAMISH - SUMMER --

Escapement -- 500 -- 1,300 (1985-1991)

Description -- September spawners primarily in the North Fork.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Depressed** due to **chronically low** escapements.

STILLAGUAMISH - FALL --

Escapement -- 100 -- 200 (1985-1991)

Description -- October spawners, primarily in the South Fork and mainstem.

Origin and Production Type -- A stock with **unknown** origin and **wild** production.

Status -- **Depressed** due to **chronically low** escapements.

CHUM - Fall

NORTH FORK STILLAGUAMISH --

Escapement -- (odd-year) 3,500 -- 75,000 (1969-1991)

Escapement -- (even-year)15,000 -- 91,000 (1968-1990)

Description -- Mid-November through December spawners in mainstem North Fork and accessible tributaries, especially Squire Creek drainage. Strong odd-/even-year fluctuation.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

SOUTH FORK STILLAGUAMISH --

Escapement -- Unknown, included in North Fork Stillaguamish above.

Description -- These fish spawn late October through early December in the mainstem (as far upstream as RM 34) and tributaries, especially Jim Creek. Strong odd-/even-year fluctuations in escapements and run size.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Stillaguamish - Cont.

COHO -

STILLAGUAMISH --

Escapement -- 4,000 -- 36,000 (1967-1991)

Description -- November through mid-January spawners with spawning sometimes extending into February. These fish spawn in all accessible tributaries, with occasional use of mainstem side channels.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Depressed** due to a **short-term severe decline** based on escapements.

DEER CREEK --

Escapement -- Unknown

Description -- Spawning timing unknown. There is no comprehensive stock assessment data available for these fish, although it is known that there is currently little coho utilization of this drainage due to catastrophic habitat alteration (slides).

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

PINK -

NORTH FORK STILLAGUAMISH --

Escapement -- 7,800 -- 147,000 (1975-1991)

Description -- These fish spawn in September through October in mainstem and large tributaries (Squire, Boulder creeks, etc.). They are vulnerable to droughts which can cause spawner redistribution.

Origin and Production Type --A **native** stock with **wild** production.

Status -- **Healthy**

SOUTH FORK STILLAGUAMISH --

Escapement -- 10,000 -- 74,000 (1975-1991)

Description -- These fish spawn in late September through October in the mainstem Stillaguamish, South Fork, Jim Creek and Pilchuck Creek. They typically peak later than North Fork, possibly because of temperatures.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

STEELHEAD - Summer

DEER CREEK --

Escapement -- Unknown. Spawning escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Early April through May spawning period. A distinct stock based on the geographical isolation of the spawning population. This is the only steelhead stock (summer or winter) that uses the upper Deer Creek basin and the only native summer steelhead of the North Fork Stillaguamish.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Critical** based on **long-term negative trend** in juvenile density in index areas.

Stillaguamish Summer Steelhead - Cont.

SOUTH FORK STILLAGUAMISH --

Escapement -- Unknown. Spawning escapement is not monitored for this stock.

Description -- Mid-January to mid-April spawning period. A distinct stock based on the geographical isolation of the spawning population upstream of Granite Falls in the South Fork Stillaguamish River. This stock originated from hatchery plants in the mid-1950s and is managed only to provide a harvest fishery and has no escapement objective.

Origin and Production Type -- **Non-native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

CANYON CREEK --

Escapement -- Unknown. Spawning escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- A distinct stock based on the geographical isolation of the spawning population. This stock primarily uses the forks of Canyon Creek for spawning and early rearing. Spawning period is unknown but probably similar to other summer steelhead stocks (February through April).

Origin and Production Type -- **Mixed-**origin (from commingled native and non-native stocks and/or mating between native and non-native stocks) stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

STEELHEAD - Winter

STILLAGUAMISH --

Escapement -- 950 -- 2,226 in index areas (1985-1991). Escapement goal in index = 950.

Description -- A distinct stock based on the geographical isolation of the spawning population in the mainstem Stillaguamish River, North Fork Stillaguamish River, South Fork Stillaguamish River, Pilchuck Creek, Jim Creek, Canyon Creek, and other tributaries. Mid-March to mid-June spawning period.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement in index area.

SNOHOMISH

CHINOOK -

SNOHOMISH - SUMMER --

Escapement -- 361 -- 2,258 (1979-1992)

Description -- September spawners distributed in the mainstem Skykomish and associated tributaries.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** due to **chronically low** escapement levels and a **long-term negative trend** in Puget Sound run size.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Snohomish Chinook - Cont.

WALLACE - SUMMER/FALLS --

Escapement -- 200 -- 2,100 (1979-1991)
Description -- Late August through October spawners. This stock spawns from the mouth of the Wallace River to the hatchery rack.
Origin and Production Type -- A **mixed** stock with **composite** production.
Status -- **Healthy**

SNOHOMISH - FALL --

Escapement -- 900 -- 2,600 (1979-1991)
Description -- A mid-September through October spawners. Geographical distribution includes Snoqualmie River, Sultan River, Pilchuck River, Woods Creek, and Elwell Creek.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Depressed** based on **chronically low** escapement levels and a **long-term negative trend** in Puget Sound run size.

BRIDAL VEIL CREEK - FALL --

Escapement -- Unknown
Description -- October spawners. This stock spawns in Bridal Veil Creek, in the South Fork Skykomish between the forks and Sunset Falls and in the North Fork Skykomish from the forks to Bear Creek.
Origin and Production Type --A **native** stock with **wild** spawning.
Status -- **Unknown**

CHUM - Fall

SKYKOMISH --

Escapement -- (odd-year) 3,600 -- 44,000 (1969-1991)
Escapement -- (even-year)10,000 -- 67,000 (1968-1990)
Description -- Mid-November through December spawners primarily in Skykomish side channels and larger tributaries. Strong odd-/even-year fluctuations in escapement and run size.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

SNOQUALMIE --

Escapement -- Unknown, included in Skykomish above.
Description -- Mid-November to December spawners known from a side channel near Fall City, and recent observations in the Tolt and South Fork Tolt rivers.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Unknown**

WALLACE --

Escapement -- (odd-year) 290 -- 7,000 (1969-1991)
Escapement -- (even-year) 670 -- 16,000 (1968-1990)
Description -- November through December spawners in Wallace River (Skykomish tributary) upstream at least to Gold Bar and in tributaries including Olney Creek and Ruggs Slough.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Snohomish - Cont.

COHO -

SNOHOMISH --

Escapement -- Unknown

Description -- Late October through mid-January spawners, occasionally extending into early February, in the mainstem and tributaries below the Snoqualmie/Skykomish forks. Lower mainstem tributaries exhibit a later initial spawning, however, that is generally regarded to be a response to a lack of significant flows early in the fall.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Depressed** due to a **short-term severe decline** in escapement.

SKYKOMISH --

Escapement -- Unknown

Description -- November through mid-January spawners, occasionally extending to mid-February and (rarely) into March in the mainstem and North Fork Skykomish, as well as major tributaries, such as the Sultan and Wallace rivers.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

SOUTH FORK SKYKOMISH --

Escapement -- 5,000 -- 30,000 (Sunset Falls fishery counts) (1967-1991)

Description -- There have been no systematic spawner surveys above Sunset Falls, so specific spawning timing is not available, however return timing appears to be earlier than generally demonstrated in the rest of the Snohomish River system.

Origin and Production Type -- A **non-native** stock with **wild** production.

Status -- **Healthy**

SNOQUALMIE --

Escapement -- Unknown

Description -- Early November through late January spawners, occasionally into mid-February. This stock spawns in the Snoqualmie River and tributaries.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Healthy**

PINK -

SNOHOMISH - ODD-YEAR --

Escapement -- 70,000 -- 302,000 (1967-1991)

Description -- These fish spawn in late September through October in the mainstem Snohomish, Skykomish, Snoqualmie, and larger tributaries (Wallace, Sultan, others).

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Snohomish Pink - Cont.

SNOHOMISH - EVEN-YEAR --

Escapement -- 140 -- 2,200 (1980-1990)

Description -- September spawners in mainstem Snohomish and lower Skykomish, possibly also in Snoqualmie. Only known sustaining population of even-year spawning pinks in Washington. Vulnerable to environmental problems, such as flooding.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

STEELHEAD - Summer

TOLT --

Escapement -- 20 -- 30 wild adults observed during summer/fall snorkel surveys. Escapement goal = 121.

Description -- Spawning period is unknown but probably similar to other summer steelhead stocks (February through April). A distinct stock based on the geographical isolation of the spawning population in the forks of the Tolt River.

Origin and Production Type -- **Unknown** origin (a native stock historically returned to the Tolt, but there is uncertainty about the amount of contribution by hatchery summer steelhead spawning in the wild)**,** sustained by **wild** production.

Status -- **Depressed** based on **chronically low** number of wild adults counted during summer/fall snorkel surveys compared to available habitat and present distribution of winter and summer steelhead.

NORTH FORK SKYKOMISH --

Escapement -- Unknown. Spawning escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but probably similar to other summer steelhead stocks (February through April). A distinct stock based on the geographical isolation of the spawning population upstream of Bear Creek Falls in the North Fork Skykomish River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, but number of adults observed during fall surveys are increasing.

SOUTH FORK SKYKOMISH --

Escapement -- Unknown. Spawning escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but probably similar to other summer steelhead stocks (February through April). A distinct stock based on the geographical isolation of the spawning population in the South Fork Skykomish River, Beckler River, and tributaries upstream of Sunset Falls. Summer steelhead colonized the habitat upstream of the Falls in the mid-1950s. Primary donor stock was the Skamania hatchery summer run.

Origin and Production Type -- A **non-native** stock sustained by **wild** production.

Status -- **Healthy** based on counts of adult steelhead at Sunset Falls.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Snohomish - Cont.

STEELHEAD - Winter

SNOHOMISH/SKYKOMISH --

Escapement -- 1,843 -- 4,710 (1982-1991)
Description -- Early March to mid-June spawning period. A distinct stock based on the geographical isolation of the spawning population in mainstems of the Snohomish, Skykomish, Sultan, and Wallace rivers and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Healthy** based on wild spawner escapement.

PILCHUCK --

Escapement -- 657 -- 1,706 (1982-1991)
Description -- Early March to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the Pilchuck River and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Healthy** based on wild spawner escapement.

SNOQUALMIE --

Escapement -- 1,303 -- 2,536 (1982-1992)
Description -- Early March to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the mainstem Snoqualmie River, Tolt River, Raging River, and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Healthy** based on wild spawner escapement.

LAKE WASHINGTON

CHINOOK - Summer/Fall

ISSAQUAH --

Escapement -- 500 -- 5,000 (1987-1991)
Description -- Late September through October spawners in Issaquah and East Fork Issaquah creeks.
Origin and Production Type -- A **non-native** stock with **composite** production.
Status -- **Healthy**

NORTH LAKE WASHINGTON TRIBS --

Escapement -- Unknown
Description -- September through October spawners. Distribution includes North, Swamp, Bear, Little Bear, and Cottage Lake creeks.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Unknown**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lake Washington Chinook - Cont.

CEDAR --

Escapement -- 600 -- 4,300 (1987-1991)
Description -- Mid-September through October spawners in the Cedar River.
Origin and Production Type -- Stock is **native** with **wild** production.
Status -- **Unknown** (stock status unresolved by state and tribes - see Stock Report, Appendix 1).

COHO -

LAKE WASHINGTON/SAMMAMISH TRIBS. --

Escapement -- Unknown
Description -- Late October through mid-December spawners in all Lake Washington tributaries outside of the Cedar River system. There have been large releases of hatchery-origin coho in this area, however, the magnitude of genetic impact is unknown.
Origin and Production Type -- A **mixed** stock with **composite** production.
Status -- **Depressed** due to a **short-term severe decline** in escapement.

CEDAR --

Escapement -- Unknown
Description -- Late October through early March spawners in the Cedar River and tributaries. There have been limited releases of hatchery-origin coho into this system, however, the magnitude of genetic impact is unknown.
Origin and Production Type -- A **mixed** stock with **wild** production.
Status -- **Healthy**

SOCKEYE -

CEDAR --

Escapement -- 76,000 -- 365,000 (1967-1991)
Description -- September through January spawning period, with occasional observations of spawners in August and February. This stock spawns throughout the Cedar River (to pipeline at RM 21), and the lower portions of its tributaries. These fish were introduced into the Cedar River in the 1930s through fry plants of Baker sockeye.
Origin and Production Type -- A **non-native** stock of **wild** production type.
Status -- **Depressed** based on a **long-term negative trend** in freshwater survivals (presmolts per spawner) and escapements.

LAKE WASHINGTON/SAMMAMISH TRIBS --

Escapement -- 3,601 -- 29,713 (1982-1991)
Description -- September through December spawners, with peak spawning periods heavily influenced by stream flows. The majority of the spawning escapement occurs in the Big Bear Creek and Issaquah Creek systems with some utilization of smaller tributaries also. Genetic studies suggest that these sockeye are different from introduced stocks and may be a native stock.
Origin and Production Type -- A stock of **unknown** origin with **wild** production.
Status -- **Depressed** due to a **long-term negative trend** in escapement.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lake Washington Sockeye - Cont.

LAKE WASHINGTON BEACH SPAWNERS --

Escapement -- 54 -- 1032 (peak index count) (1976-1991)

Description -- October through December spawning period. There are four index areas in Lake Washington which are monitored annually. Spawning occurs elsewhere in the lake as well. This stock is genetically dissimilar from other Lake Washington sockeye and most likely is native to the system.

Origin and Production Type -- A stock of **unknown** origin with **wild** production.

Status -- **Depressed** due to a **long-term negative trend** in escapement.

STEELHEAD - Winter

LAKE WASHINGTON --

Escapement -- 474 -- 1,816 (1984-1992). Escapement goal = 1,600.

Description -- Early March to mid-June spawning period. A distinct stock based on the geographical isolation of the spawning population in tributaries to Lake Washington, Cedar River, Lake Sammamish, and the Sammamish River. Geographical isolation exists between spawning steelhead in at least eight tributaries, but the degree of straying/mixing between these groups is unknown.

Origin and Production Type --A **native** stock sustained by **wild** production.

Status -- **Depressed** based on **chronically low** spawner escapement.

DUWAMISH/GREEN

CHINOOK - Summer/Fall

DUWAMISH/GREEN --

Escapement -- 5,000 -- 11,500 (1987-1991)

Description -- September through October spawners with hatchery production at Soos Creek and wild spawning throughout the river.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

NEWAUKUM CREEK --

Escapement -- 300 -- 3,000 (1987-1991)

Description -- September through October spawners in lower Newaukum Creek.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Healthy**

CHUM - Fall

Duwamish/Green --

Escapement -- Unknown

Description -- Late November through December spawners. The remnant native run spawns primarily in the mainstem Green River and side channels. Hatchery fish returning to the Keta Creek facility may have diluted the native stock.

Origin and Production Type -- A **mixed** stock of **composite** production.

Status -- **Unknown**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Duwamish/Green Fall Chum - Cont.

CRISP CREEK --

Escapement -- 100 -- 1,600 (1968-1991)

Description -- Late November through December spawners. The Keta Creek hatchery chum originated from releases of Quilcene and Hoodsport hatchery stock. Surplus hatchery fish spawn in Crisp Creek and are may also mix with mainstem native spawners. In 1990 efforts were initiated to replace this stock with a South Puget Sound stock from the Suquamish Tribal hatchery.

Origin and Production Type -- A **non-native** stock with a **cultured** production type.

Status -- **Healthy**

COHO -

GREEN RIVER/SOOS CREEK --

Escapement -- Range 700 -- 12,500 (includes Newaukum Creek system) (1967-1991)

Description -- Late October through mid-December spawners in Green River tributaries except Newaukum Creek. Soos Creek system is almost entirely dependent upon hatchery stock adults passed above the rack. Production above Howard Hanson Dam is all derived from off-station hatchery fingerling releases.

Origin and Production Type -- A **mixed** stock of **composite** production.

Status -- **Healthy**

NEWAUKUM CREEK (GREEN RIVER) --

Escapement -- Unknown. Included in Green River/Sooes Creek above.

Description -- Late October through mid-January spawners in Newaukum Creek. There have been annual releases of hatchery-origin coho into this system, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** due to a **short-term severe decline** in escapement.

STEELHEAD - Summer

GREEN (DUWAMISH) --

Escapement -- Unknown. Spawning escapement is not monitored for this stock.

Description -- Spawning period is unknown but probably similar to other summer steelhead stocks in Puget Sound region (February through April). A distinct stock based on geographical isolation of the spawning population in the Green River and tributaries. This stock originated from hatchery summer steelhead smolts first introduced in 1965 and is managed only to provide a harvest fishery and has no escapement objective.

Origin and Production Type -- A **non-native** stock sustained by **wild** production.

Status -- **Healthy**

STEELHEAD - Winter

GREEN (DUWAMISH) --

Escapement -- 944 -- 2,378 (1978-1992). Escapement goal = 2,000.

Description -- Early March to mid-June spawning period. A distinct stock based on geographical isolation of the spawning population in the Green River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)

PUYALLUP

CHINOOK -

WHITE - SPRING --

Escapement -- 10 -- 500 (1978-1991)

Description -- Spawns primarily in September. A small population of native spawners still returns to the White River. They are currently transported and released into the upper river. The stock is primarily, however, a hatchery stock located at Hupp Springs Hatchery, South Sound net pens, and recently at the White River Hatchery.

Origin and Production Type -- A **native** stock with **composite** production.

Status --**Critical** based on **chronically low** escapement levels.

WHITE - SUMMER/FALL --

Escapement -- Unknown

Description -- Spawn timing is primarily October and precise location of natural spawning is not known.

Origin and Timing -- Stock origin is **unknown**, **wild** production.

Status --**Unknown**

PUYALLUP - FALL --

Escapement -- Unknown

Description -- September through October spawners, mostly in South Prairie Creek.

Origin and Production Type -- Stock origin is **unknown** with **composite** production.

Status -- **Unknown**

CHUM - Fall

PUYALLUP/CARBON --

Escapement -- Unknown

Description -- December - January spawners. Recent stream survey data show spawning chum in the Carbon River mainstem and tributaries of the Puyallup and White rivers.

Origin and Production Type -- A **native** stock with **wild** production.

Status --**Unknown**

FENNEL CREEK (PUYALLUP) --

Escapement -- 4 -- 1,700 (1968-1991)

Description -- Mid-December through early January spawners. Prior to the introduction of hatchery fish (Hood Canal origin) the native escapement was less than 200. Escapement levels increased with an egg box project however, the egg box is no longer in use. The healthy status was based on escapement levels from 1980 to present, which averaged over 750.

Origin and Production Type -- An **unknown** origin with **wild** production.

Status -- **Healthy**

HYLEBOS CREEK --

Escapement -- Unknown

Description -- A few chum have been observed in Hylebos Creek during spawning ground surveys as far up as RM 5. Scattered fish were seen from late November to early January.

Origin and Production Type -- Origin and production type for this stock are both **unknown**.

Status -- **Unknown**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Puyallup - Cont.

COHO -

PUYALLUP --

Escapement -- Unknown

Description -- Late October through mid-December spawners in all tributaries except the White River. The entire Puyallup system has been planted with hatchery-origin coho, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** due to a **short-term severe decline** in index escapement counts.

WHITE (PUYALLUP) --

Escapement -- Unknown

Description -- Spawning timing is not available, but passage above Mud Mountain Dam peaks in September and trails off into early November these fish spawn in all White River tributaries. Large numbers of hatchery-origin coho have been released into this system, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

PINK -

PUYALLUP --

Escapement -- 12,000 -- 50,000 (1967-1989)

Description -- September through October spawners. Most of the spawning occurs in South Prairie Creek, a tributary of the Puyallup River. Some spawning is scattered in other tributaries and the mainstem.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

STEELHEAD - Winter

MAINSTEM PUYALLUP --

Escapement -- 42 -- 150 in index areas in tributaries (1979-1992)

Description -- Early March through mid-June spawning period. A distinct stock based on geographical isolation of the spawning population in the mainstem Puyallup River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement in index tributaries.

WHITE (PUYALLUP) --

Escapement -- 130 -- 448 in Greenwater River index areas and 140 -- 444 in Clearwater River index areas (1986-1992) .

Wild adults at Buckley trap: about 200 -- 1,600 (1980-1992)

Description -- Early March to mid-June spawning period in index tributaries. A distinct stock based on geographical isolation of the spawning population in the White River, and tributaries (including Clearwater River and Greenwater River).

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on spawner escapement in index tributaries.

CARBON --

Escapement -- 596 -- 1,262 in index areas in tributaries (1985-1992)
Description -- Early March to mid-June spawning period. A distinct stock based on geographical isolation of the spawning population in the Carbon River.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Healthy** based on wild spawner escapement in index tributaries.

NISQUALLY

CHINOOK - Summer/Fall

NISQUALLY --

Escapement -- 200 -- 3,100 (1977-1991)
Description -- September through October spawners in the Nisqually and Mashel rivers and Ohop Creek. Hatchery influence from Green River stock.
Origin and Production Type -- A **mixed** stock with **composite** production.
Status -- **Healthy**

CHUM - Winter

NISQUALLY --

Escapement --10,000 -- 70,000 (1968-1991)
Description -- January through early March spawners. Spawning takes place in the Nisqually River and its tributaries, and in Mounts and McAllister creeks.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

COHO -

NISQUALLY --

Escapement -- 600 -- 13,000 (1967-1991)
Description -- Mid-November through mid-January spawners in all accessible tributaries. There have been annual releases of hatchery-origin coho into this system, however, the magnitude of genetic impact is unknown.
Origin and Production Type -- A **mixed** stock with **composite** production.
Status -- **Healthy**

PINK -

NISQUALLY --

Escapement -- 500 -- 12,300 (1959-1967)
Description -- September through October spawners. Most of these fish spawn in the mainstem, but spawning also occurs in tributaries (Ohop Creek and the Mashel River).
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Nisqually - Cont.

STEELHEAD - Winter

NISQUALLY --

Escapement -- 642 -- 3,817 (1980-1992). Escapement goal = 2,000.

Description -- A distinct stock based on geographical isolation of the spawning population in the mainstem Nisqually River, Muck Creek, Tanwax Creek, Ohop Creek, Mashel River and tributaries. Early March to mid-June spawning period.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

SOUTH SOUND

CHINOOK - Summer/Fall

SOUTH SOUND TRIBS --

Escapement -- 9,600 -- 37,000 (1984-1991).

Description -- September through October spawners. Stock origin is Green River hatchery stock and has been distributed to Grovers Creek, Gorst Creek, Chambers Creek, Carr Inlet streams, McAllister Creek, Deschutes River, and other South Sound streams. Stock status depends upon hatchery production, although some sustained natural spawning occurs.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

CHUM - Summer

CHAMBERS CREEK --

Escapement -- 0 -- 200 (1975-1984).

Description -- Mid- through late October spawners in Chambers and Leach creeks. The last fish (3) were seen in October 1983.

Origin and Production Type -- A **native** stock with **wild** production

Status -- **Extinct**

HAMMERSLEY INLET --

Escapement -- Wild and hatchery 500 -- 21,000 (1968-1991).

Description -- Mid- through late October spawners. The Johns Creek Hatchery is a major contributor to the run and complements a large wild escapement into Johns Creek. Escapements in other streams that depend primarily on natural spawning are relatively low, but still support significant production.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Healthy**

CASE INLET --

Escapement -- Wild and hatchery 350 -- 16,000 (1968-1991).

Description -- Mid- through late October spawners. Wild escapement in Coulter Creek is complimented by large hatchery production. Sherwood Creek has supported a stable wild escapement over the last twenty years.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
South Sound Summer Chum - Cont.

BLACKJACK CREEK --

Escapement -- 100 -- 2,800 (1968-1991).
Description -- Mid- through late October spawners. This is the only summer chum produced in the mid-Sound area.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

CHUM - Fall

HENDERSON INLET --

Escapement -- Unknown
Description -- December spawners. Natural spawning in the lower three miles of Woodland, Woodard and Adams creeks accounts for most of the production of this stock. Elson Creek Hatchery stocks have been planted in some of these streams.
Origin and Production Type -- a **mixed** stock with **composite** production.
Status -- **Unknown**

ELD INLET --

Escapement -- 4,300 -- 37,600 (1968-1991).
Description -- Broad spawning run-timing from late November through early January, primarily utilizing McLane, Swift, and Perry creeks.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

TOTTEN INLET --

Escapement -- 1,100 -- 22,400 (1968-1991).
Description -- November spawners (peak mid-November) with unique run timing (early for Fall chum). Wild escapement in Kennedy Creek is the major production for Totten Inlet.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

SKOOKUM INLET --

Escapement -- 100 -- 6,800 (1968-1991).
Description -- Late November through early January spawners. Most of the production comes from wild escapement in Little Creek (a tributary to Skookum Creek) which may be affected by significant straying from Elson Creek Hatchery.
Origin and Production Type -- A **mixed** stock with **composite** production.
Status -- **Healthy**

UPPER SKOOKUM CREEK --

Escapement -- 200 -- 4,400 (1968-1991).
Description -- Bimodal spawner runs: first peak in December with a smaller peak in January. Most of the spawning takes place between RMs 6 and 8.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
South Sound Chum - Cont.

JOHNS/MILL CREEKS (HAMMERSLEY INLET) --

Escapement -- 3,000 -- 40,000 (1968-1991).

Description -- Broad spawner season from November through early February. Much of the production in this area comes from wild escapement in Johns Creek. Mill Creek escapement is based primarily on wild spawning fish which have a narrower run timing (November-December spawner). However, because of the overlap between the two run timings, they can considered the same stock.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Healthy**

GOLDSBOROUGH/SHELTON CREEKS (HAMMERSLEY INLET) --

Escapement -- 200 -- 16,000 (1968-1991).

Description -- Late December through early February spawners. These tributaries to Hammersley Inlet have a later run timing than the John/Mills creeks stock. Although Shelton Creek receives hatchery plants, Goldsborough is dependent on wild escapement.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

CASE INLET --

Escapement -- 500 -- 6,000 (1968-1991).

Description -- Early December through mid-January spawners. Most of the spawning takes place in the lower two miles of Sherwood, Coulter and Rocky creeks.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

CARR INLET --

Escapement -- 200 -- 2,000 (1968-1991).

Description -- Most streams have a late December through early January spawning run. Burley Creek has an earlier peak (November) than the other streams but is currently receiving plants from Minter Creek Hatchery (Elson stock). Lacky Creek may be the lone remaining stream that could be native Carr Inlet stock.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

GIG HARBOR/OLLALA --

Escapement -- 600 -- 7,400 (1968-1991).

Description -- Late November through December spawners. Ollala creek run will continue until mid-January. Three stocks may be present in the streams: natural stocks, hatchery fish with a Hood Canal origin, and hatchery fish with Elson/Minter origin.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

DYES INLET/LIBERTY BAY --

Escapement -- 2,500 -- 74,000 (1968-1991).

Description -- November spawners. This group of fish has an early migration timing relative to the fall run. The peak of spawning is around mid-November. Natural escapement is growing with the help of intense hatchery plants from the Cowlings Creek tribal facility.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Healthy**

South Sound Chum - Cont.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)

SINCLAIR INLET --

Escapement -- 500 -- 7,200 (1968-1991).

Description -- December through early January spawners. This stock includes fish that spawn in tributaries entering Sinclair Inlet, as well as Ross Creek chum (because of a similar spawner timing).

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

CHUM - Winter

CHAMBERS CREEK --

Escapement -- 200 -- 6,300 (1968-1991).

Description -- January through February spawners. The winter chum run in Chambers Creek is produced by natural production. A WDFW hatchery on Chambers Creek uses the natural spawning chum run as broodstock. Fish from the hatchery are used to maintain a late-timed run in the Puyallup River system (Clark Creek).

Origin and Production Type --A **native** stock with **wild** production.

Status -- **Healthy**

COHO -

CHAMBERS CREEK --

Escapement -- 287 -- 5,848 (1975-1991), from trap counts.

Description -- Spawning timing is not available but should reflect typical hatchery timing of late October through mid-December. These fish spawn in Chambers Creek and all tributaries. There are large numbers of Lake Sequalitchew and Fox Island Net Pen-origin adults straying into Chambers Creek, and there are comprehensive off-station releases of hatchery-origin coho into the system above Steilacoom Lake. However, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

DEEP SOUTH SOUND TRIBS --

Escapement -- 600 -- 15,200 (1967-1991).

Description -- Late October through mid-December spawners in all accessible tributaries. There have been comprehensive releases of hatchery-origin coho into these streams, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

DESCHUTES --

Escapement -- 500 -- 10,400 (1967-1991).

Description -- Late October through early January spawners in all accessible tributaries. There have been no significant hatchery stock releases into this system in the last ten years. There were limited historical releases of hatchery-origin coho prior to that period, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **non-native** stock with **wild** production.

Status -- **Healthy**

South Sound Coho - Cont.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)

EAST KITSAP --

Escapement -- 400 -- 4,900 (1967-1991).

Description -- Late October through late December spawners in all accessible tributaries. There have been releases of hatchery-origin coho into these streams, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

STEELHEAD - Winter

DESCHUTES --

Escapement -- Unknown. Spawner escapement is not monitored for this stock.

Description -- Early January to early April spawning period. A distinct stock based on the geographical isolation of the spawning population in the Deschutes River and tributaries. This stock originated from a South Puget Sound early stock returning to Chambers Creek near Steilacoom. The Deschutes River was impassable to anadromous passage until laddered in the late 1930s. Offspring from spawning hatchery fish have produced a small wild run of fish into the system. This stock is managed only to provide a harvest fishery and has no escapement objective.

Origin and Production Type -- A **non-native** stock sustained by **wild** production.

Status -- **Healthy**

ELD INLET --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Early February to early April spawning period. A distinct stock based on the geographical isolation of the spawning population in Perry Creek and McLane Creek.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

TOTTEN INLET --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Early February to early April spawning period. A distinct stock based on the geographical isolation of the spawning population in Skookum, Kennedy, and Schneider creeks.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

HAMMERSLEY INLET --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Early February to early April spawning period. A distinct stock based on the geographical isolation of the spawning population in Mill, Goldsborough, Johns, Cranberry, Deer, Spring, Malaney, Uncle John, and Campbell creeks.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
South Sound Winter Steelhead - Cont.

CASE/CARR INLETS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Early February to early April spawning period. A distinct stock based on the geographical isolation of the spawning population in tributaries to Case Inlet and Pickering Passage (Sherwood, Coulter, Rocky, Dutcher, Artondale, and Jones creeks) and tributaries to Henderson Bay and Carr Inlet (Minter, Burley, Purdy, McCormick, and Lackey creeks).

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

EAST KITSAP --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Early February to early April spawning period. A distinct stock based on the geographical isolation of the spawning population in tributaries to Colvos Passage (Ollala and Crescent creeks), Yukon Harbor (Curley Creek), Sinclair Inlet (Gorst, Blackjack, and Ross creeks), Dyes Inlet (Barker, Clear, and Chico creeks), Liberty Bay (Scandia and Dogfish creeks), and Miller Bay (Grovers Creek).

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

HOOD CANAL

CHINOOK - Summer/Fall

HOOD CANAL --

Escapement -- 292 -- 5,234 (1968-1991). Escapement is generally strong in the Skokomish system but in the Dosewallips, Duckabush, Hamma Hamma, Dewatto, Tahuya and Union systems it has been extremely weak, given the available productive habitat.

Description -- Late September through October spawners. In the Skokomish system, a substantial segment of the naturally-spawning population is comprised of hatchery strays from two hatcheries in this system. For the other river systems, there have been releases of hatchery origin chinook in those streams, however, the magnitude of genetic impacts is unknown.

Origin and Production Type -- A stock of **mixed** origin with **composite** production.

Status -- **Healthy**

CHUM - Summer

HOOD CANAL --

Escapement -- 200 -- 43,000 (1968-1991).

Description -- Mid-September through mid-October spawners in tributaries such as the Quilcene, Dosewallips, Duckabush, Hamma Hamma, Dewatto and Tahuya rivers. The Hood Canal summer chum are native fish that once numbered over 40,000 in the late 1960s. The latest escapement estimate for Hood Canal (1991) was 936.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Critical** due to **chronically low** escapements.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Hood Canal Summer Chum - Cont.

UNION (HOOD CANAL) --

Escapement -- 40 -- 2,000 (1968-1991).

Description -- September to early October spawners. The Union River native summer chum spawning run has an earlier timing than the rest of Hood Canal summer chum.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

CHUM - Fall

NORTHEAST HOOD CANAL --

Escapement -- 500 -- 8,000 (1968-1991).

Description -- Late November through December spawners, mostly in Anderson, Big Beef, Seabeck and Stavis creeks. Hatchery plants in these streams may have affected the genetic composition of the stock.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

DEWATTO --

Escapement -- 300 -- 4,600 (1968-1991).

Description -- Spawning takes place from late November through December in small streams of low gradient. Most of the escapement comes from the Dewatto River, Shoe and White creeks. The extent of hatchery plants in these streams may have affected the genetic composition.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

SOUTHEAST HOOD CANAL --

Escapement --1,200 -- 21,000 (1968-1991).

Description -- Late November through December spawners in the lower two miles of Stimson, Big and Little Mission, Twanoh, Alderbrook, Rendsland, and Caldervin creeks as well as the Union and Tahuya rivers. The extent of hatchery plants in these streams may have affected the genetic composition of this stock.

Origin and Production Type -- A **mixed** stock of **composite** production.

Status -- **Healthy**

LOWER SKOKOMISH --

Escapement -- Unknown

Description -- November through December spawner. Natural spawning of hatchery-origin chum in Purdy and Weaver creeks accounts for most of the production of this stock. George Adams (located on Purdy Creek) and McKernan (located on Weaver Creek) hatcheries exchange eggs between themselves and receive eggs from the Hoodsport facility when egg take goals are not met.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Unknown**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Hood Canal Fall Chum - Cont.

UPPER SKOKOMISH SYSTEM - LATE --

Escapement -- 800 -- 8,800 (1968-1991).

Description -- December through early January spawners. Natural spawning occurs in most tributaries of the system. The lower 47 miles of the North Fork has the largest portion of the chum escapement.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

WEST HOOD CANAL --

Escapement -- 3,500 -- 37,000 (1968-1991).

Description -- November through early January spawners. The broad spawning season of the wild spawning chum have allowed these fish to remain a viable wild run. Egg box projects and hatchery plants have been made in most of these streams and have contributed to the wild run.

Origin and Production Type -- A **mixed** stock of **composite** production.

Status -- **Healthy**

HAMMA HAMMA - LATE --

Escapement -- 900 -- 14,000 (1968-1991).

Description -- Often described as "late-falls," these chum spawn from late November through early January. Spawning takes place primarily in the lower mile of the river. The later-than-normal timing of the wild spawning chum has allowed this stock to remain viable.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

DUCKABUSH - LATE --

Escapement -- 74 -- 4,700 (1968-1991).

Description -- Often described as "late-falls," these chum spawn from late November through early January. Spawning takes place primarily in the lower mile of the river. The later-than-normal timing of the wild spawning chum has allowed this stock to remain viable.

Origin and Production Type -- A **native** stock of **wild** production.

Status -- **Healthy**

DOSEWALLIPS - LATE --

Escapement -- 100 -- 7,300 (1968-1991).

Description -- Often described as "late-falls," these chum spawn from late November through early January. Spawning takes place primarily in the lower mile of the river. The later-than-normal timing of the wild spawning chum has allowed this stock to remain viable.

Origin and Production Type -- A **native** stock with **wild** spawning.

Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Hood Canal Fall Chum - Cont.

QUILCENE -- LATE

Escapement -- 50 -- 8,400 (1968-1991).

Description -- November through early January spawners. The majority of the spawning occurs in the Big Quilcene River. This run is supported by a federal hatchery located upriver (RM 2.3) on a tributary (Penny Creek). The wild escapement is the result of a combination of natural spawning and hatchery fish that spawn before reaching the hatchery. Spawning also takes place in the Little Quilcene River, the independent drainages of Jackson and Spencer creeks, and Wolcott Slough.

Origin and Production Type -- A **mixed** stock of **composite** production.

Status -- **Healthy**

COHO -

NORTHEAST HOOD CANAL --

Escapement -- Unknown

Description -- Early November to early January spawners in all accessible tributaries from Port Gamble to Anderson Creek and in Thorndyke and Shine creeks. There is some straying of pen reared fish to these streams, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **wild** production

Status -- **Depressed** due to a **short-term severe decline** in escapement, as evidenced by Big Beef trap counts.

DEWATTO --

Escapement -- Unknown

Description -- November to early January spawners in the Dewatto and tributaries.

Origin and Production Type -- A **mixed** stock with **wild** production

Status -- **Depressed** due to a **short-term severe decline**, based on escapement.

SOUTHEAST HOOD CANAL --

Escapement -- Unknown

Description -- Early November to early January spawners in Tahuya, Mission and Union rivers and tributaries, as well as independent drainages.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Depressed** due to a **short-term severe decline** based on escapement.

SKOKOMISH --

Escapement -- 800 -- 9,600 (including Purdy and Weaver creeks) (1967-1991).

Description -- Late October to mid-January spawners in the Skokomish and tributaries. The North Fork probably accounts for a significant proportion of the natural production in this system. Releases of hatchery-origin coho into this system have been minimal, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Hood Canal Coho - Cont.

SOUTHWEST HOOD CANAL --

Escapement -- Unknown

Description -- Early November to late December spawners in independent drainages from the Skokomish to the Hamma Hamma River. There have been very limited introductions of hatchery-origin coho in this area, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Healthy**

HAMMA HAMMA --

Escapement -- Unknown

Description -- Early November to late December spawners in the Hamma Hamma and tributaries. There have been very limited introductions of hatchery-origin coho in this area, however, the magnitude of genetic impacts is unknown.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Healthy**

DUCKABUSH --

Escapement -- Unknown

Description -- Early November to late December spawners in the Duckabush and its tributaries and Fulton Creek. There have been very limited introductions of hatchery-origin coho in this area, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Depressed** due to a **short-term severe decline**, based on escapement.

DOSEWALLIPS --

Escapement -- Unknown

Description -- Early November to late December spawners in the Dosewallips and tributaries and local independent drainages. There have been very limited introductions of hatchery-origin coho in this area, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Healthy**

QUILCENE/DABOB BAYS --

Escapement -- 200 -- 3,000 (1965-1992)

Description -- Spawning timing is widely variable between years, but when stronger returns are evident, spawning occurs over an extended period from early November to mid-January. This may also be the result of the composite return which includes strays from the Quilcene National Fish Hatchery (an early run) mixed with normal timed coho from natural and net pens production. Spawning occurs in all accessible tributaries to the Quilcene and Dabob bays. There have been releases of Hood Canal and Dungeness coho into these streams, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock of **composite** production.

Status -- **Depressed** based on **chronically low** escapement and run-size.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Hood Canal - Cont.

PINK -

HAMMA HAMMA --

Escapement -- 2,000 -- 38,000 (1967-1991).

Description -- September through early October spawner. Most of the spawning takes place in the mainstem reaches. Pinks arrive in the river and hold in large pools until they are ready to spawn.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

DUCKABUSH --

Escapement -- 2,300 -- 72,000 (1959-1967).

Description -- September through early October spawners. Most of the spawning takes place in the mainstem reaches. Pinks arrive in the river and hold in large pools until they are ready to spawn.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

DOSEWALLIPS --

Escapement -- 1,700 -- 190,000 (1967-1991).

Description -- September through early October spawners. Most of the spawning takes place in the mainstem reaches. Pinks arrive in the river and hold in large pools until they are ready to spawn.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement levels.

STEELHEAD - Summer

SKOKOMISH --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks in the Puget Sound region (February through April). A distinct stock based on the geographical isolation of the spawning population in the mainstem Skokomish, North Fork Skokomish, and South Fork Skokomish rivers and tributaries. Spawning believed to take place in upper reaches of river.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Unknown**, comprised of a historically small number of steelhead.

DUCKABUSH --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning believed to take place in upper reaches of river. Spawning period is unknown but believed to be similar to other summer steelhead stocks in Puget Sound region (February through April). A distinct stock based on the geographical isolation of the spawning population in the Duckabush River.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Unknown**, comprised of a historically small number of steelhead.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Hood Canal Summer Steelhead - Cont.

DOSEWALLIPS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks in Puget Sound region (February through April). A distinct stock based on the geographical isolation of the spawning population in the Dosewallips River and tributaries. Spawning believed to take place in upper reaches of river.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Unknown**, comprised of a historically small number of steelhead.

STEELHEAD - Winter

DEWATTO --

Escapement -- 3 -- 102 (1985-1989). WDFW escapement goal = 138.

Description -- Mid-February to early June spawning period. A distinct stock based on geographical isolation of the spawning population in the Dewatto River.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Depressed** based on **chronically low** spawner escapement.

TAHUYA --

Escapement -- 44 -- 185 (1981-1992). WDFW escapement goal = 236.

Description -- Mid-February to mid-June spawning period. A distinct stock based on geographical isolation of the spawning population in the Tahuya River.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Depressed** based on **chronically low** spawner escapement.

UNION --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Mid-February to early June spawning period. A distinct stock based on geographical isolation of the spawning population in the Union River.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Unknown**, comprised of a historically small number of steelhead.

SKOKOMISH --

Escapement -- 172 -- 1,444 (1980-1992). WDW escapement goal = 1,300

Description -- Mid-February to mid-June spawning period. A distinct stock based on geographical isolation of the spawning population in the mainstem Skokomish, North Fork Skokomish, and South Fork Skokomish rivers and tributaries.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Depressed** based on **chronically low** spawner escapement.

HAMMA HAMMA --

Escapement -- Unknown. Spawner escapement is not monitored for this stock nor has an escapement goal been identified.

Description -- Mid-February to early June spawning period. A distinct stock based on geographical isolation of the spawning population in the Hamma Hamma River.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

Hood Canal Winter Steelhead - Cont.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)

DUCKABUSH --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Mid-February to early June spawning period. A distinct stock based on geographical isolation of the spawning population in the Duckabush River.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Depressed** based on **short-term severe decline** in sport harvest of wild steelhead.

DOSEWALLIPS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Mid-February to early June spawning period. A distinct stock based on geographical isolation of the spawning population in the Dosewallips River.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Depressed** based on **short-term severe decline** in sport harvest of wild steelhead.

QUILCENE/DABOB BAYS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Mid-February to early June spawning period. A distinct stock based on geographical isolation of the spawning population in tributaries to Quilcene and Dabob Bays, including Quilcene River, Little Quilcene River, and Tarboo Creek.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Unknown**, comprised of a historically small number of steelhead.

STRAIT OF JUAN DE FUCA

CHINOOK -

DUNGENESS - SPRING/SUMMER --

Escapement -- 88 -- 335 (1986-1991).

Description -- Mid-August through early October spawner. A rebuilding program is currently being implemented. This stock spawns in the mainstem up to RM 18.7 in the lower four miles of the Grey Wolf River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Critical** based on **chronically low** escapement levels.

ELWHA/MORSE CREEK SUMMER/FALL --

Escapement -- 849 -- 7,873 (1976-1991).

Description -- Late August through mid-October spawner in lower Elwha River and Morse Creek.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Strait of Juan de Fuca Chinook - Cont.

HOKO FALL --

Escapement -- 500 -- 900 (1986-1991).

Description -- Mid-September through mid-November spawning in Hoko, Pysht, Clallam, Sekiu and Lyre rivers.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Depressed** due to **chronically low** escapement levels.

CHUM - Summer

DISCOVERY BAY --

Escapement -- 45 -- 3,800 (1968-1991).

Description -- Early September through mid-October spawners in the lower mile of Salmon Creek and the lower one-half mile of Snow Creek. Recorded native escapement estimates have been as large as 3,000 as recently as 1980. However, escapement levels have been below 300 over the past three years (1989-1991).

Origin and Production Type -- a **native** stock with **wild** production.

Status -- **Critical** based on a **short-term severe decline** in escapement.

SEQUIM BAY --

Escapement -- 60 -- 1,100 (1968-1991).

Description -- Early September through mid-October spawners in the lower one-half mile of Jimmycomelately Creek. A record high escapement (1,127) occurred in 1988, but the escapement levels for the last three years have been below 190.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on a **short-term severe decline** in escapement.

CHUM - Fall

DUNGENESS/EAST STRAIT TRIBS --

Escapement -- Unknown

Description -- Mid-November through December spawners. Native runs have similar run-timings to the rest of the streams in the region. Spawning takes place in the lower reaches of the Dungeness River and in independent tributaries including: McDonald, Siebert, Bagley, and Morse creeks.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

ELWHA --

Escapement -- Unknown

Description -- Mid-November through mid-December spawners. Spawning occurs primarily in the lower mile of the Elwha River. The Elwha tribal hatchery had a chum program (circa 1980) which used primarily Hood Canal (Walcott Slough) stock and a few native Elwha and Lyre River chum.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Strait of Juan de Fuca Fall Chum - Cont.

LYRE --

Escapement -- Unknown

Description -- Mid-November to mid-January spawners. Native runs have similar run timings to the rest of the streams in the region. A single outplant of Hood Canal stock was made in 1969. Spawning primarily takes place in the lower 2.5 miles of the Lyre river.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

DEEP/EAST AND WEST TWIN CREEKS --

Escapement -- 40 -- 1,800 (1968-1991).

Description -- Mid-November through December spawner. The majority of the spawning takes place in Deep Creek. Severe habitat degradation has occurred recently.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

PYSHT --

Escapement -- 50 -- 5,700 (1968-1991).

Description -- Mid-November through December spawner. Most of the spawning occurs in the mainstem from RM 6 to RM 12. No records of hatchery introductions have been found.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

HOKO/CLALLAM/SEKIU --

Escapement -- Unknown

Description -- Mid-November through December spawner. Spawning is known to occur in the Hoko River, primarily in the lower eight miles. Spawning chum have been recorded in the Clallam River and are thought to utilize the Sekiu River. These chum have similar run timings to chum in the rest of the streams in the region.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

COHO -

CHIMACUM CREEK --

Escapement -- (1967-1991) 200 -- 2,000

Description -- Early November to late January spawners, with occasional large peaks in January. There have been releases of hatchery-origin coho in Strait streams in the past, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **composite** production

Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Strait of Juan de Fuca Coho - Cont.

DISCOVERY BAY --

Escapement -- Unknown

Description -- Late October to mid-February spawners, primarily in Snow and Salmon creeks. Trap counts are available for Snow Creek only and range from 4 - 709 (1978-1992). There have been limited releases of hatchery fingerlings in this area prior to 1986, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Critical** due to a **short-term severe decline** in escapement, as evidenced by Snow Creek trap counts.

SEQUIM BAY --

Escapement -- Unknown

Description -- Late October to early January spawners in Jimmycomelately Creek and local independent drainages. There have been limited releases of hatchery-origin coho in this area prior to 1986, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Depressed** due to a **short-term severe decline** in escapement.

DUNGENESS --

Escapement -- 400 -- 2,400 (1967-1991).

Description -- Late October to early January spawners in the Dungeness and its tributaries and local independent streams. There were substantial releases of hatchery-origin coho throughout this region in the 1950s and 1960s, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** due to a **short-term severe decline** in escapement.

MORSE CREEK --

Escapement -- Unknown

Description -- November to early January spawners in Morse, McDonald and Siebert creeks, and other Port Angeles-area independent drainages. There were substantial releases of hatchery-origin coho throughout this region in the 1950s and 1960s, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Depressed** due to a **short-term severe decline** in escapement.

ELWHA --

Escapement -- 100 -- 400 (1967-1991).

Description -- Although this stock has been judged as healthy, under current conditions, it should be noted that the majority of the Elwha system is inaccessible because of two hydroelectric dams with no passage facilities. Spawning habitat in the accessible portion of the river has been severely degraded. No direct information exists on the spawning timing, however, it is presumed that natural spawning extends from late November to early January, as it does at hatchery facilities on this system. Natural spawning of hatchery-reared coho from Elwha hatcheries accounts for most of the production of this stock.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Strait of Juan de Fuca Coho - Cont.

SALT CREEK --

Escapement -- Unknown

Description -- November to early January spawners in Salt Creek and independent drainages between the Elwha and Lyre rivers. There have been releases of hatchery-origin coho in some Strait streams in the past, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Healthy**

LYRE --

Escapement -- Unknown

Description -- Spawning time is unknown for this stock, which spawns in the Lyre River and tributaries. There have been releases of hatchery-origin coho in some Strait streams in the past, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock of **wild** production.

Status -- **Unknown**

PYSHT/TWIN/DEEP --

Escapement -- Unknown

Description -- Early November to mid-January spawners in the Pysht, East and West Twin rivers, Deep Creek and local independent drainages. There have been releases of hatchery-origin coho in some Strait streams in the past, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock of **wild** production.

Status -- **Depressed** due to a **short-term severe decline** in escapement.

CLALLAM --

Escapement -- Unknown

Description -- Early November to mid-January spawners in the Clallam and tributaries. There have been releases hatchery-origin coho in some Strait streams in the past, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock of **wild** production.

Status -- **Unknown** (stock status unresolved by state and tribes - see Stock Report, Appendix 1).

HOKO --

Escapement -- Unknown

Description -- Early November to mid-January spawners in the Hoko and tributaries. There have been releases of hatchery-origin coho in Strait streams in the past, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock of **wild** production.

Status -- **Healthy**

SEKIU/SAIL --

Escapement -- Unknown

Description -- Early November to early-January spawners in the Sekiu and Sail rivers and tributaries. There have been releases of hatchery-origin coho in Strait streams in the past, however, the magnitude of genetic impact is unknown.

Origin and Production Type -- A **mixed** stock of **wild** production.

Status -- **Depressed** due to a **short-term severe decline**, based on escapement.

Strait of Juan de Fuca - Cont.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)

PINK -

UPPER DUNGENESS --

Escapement -- 1,800 -- 55,000 (1965-1989).

Description -- This pink salmon stock enters the river in late July and completes spawning by mid-September. Spawning takes place in the upper mainstem (above RM 9.7) and in both forks, the (Grey Wolf River and East Fork of the Dungeness). When these fish first enter the river they are ocean-bright. They hold in pools and mature while slowly migrating upstream.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapements.

LOWER DUNGENESS --

Escapement -- 138 -- 40,000 (1965-1967).

Description -- This run generally spawns in the lower six miles of river and enters the river in mid-September. Spawning is completed by late October. These fish once comprised nearly half of the run.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Critical** based on **chronically low** escapements.

ELWHA --

Escapement -- Unknown

Description -- September through October spawner. In the early 1970s, instantaneous counts of over a thousand pinks were made. However, since 1981, not more than thirty pinks were seen on any single day. Extensive surveys were made in 1989. A total of four fish was seen all season.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Critical** based on **chronically low** escapements.

STEELHEAD - Summer

DUNGENESS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks (February through April). A distinct stock based on the geographical isolation of the spawning population in the Dungeness River, Gray Wolf River and tributaries.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Depressed** based on **short-term severe decline** in sport harvest of wild steelhead.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Strait of Juan de Fuca Summer Steelhead - Cont.

ELWHA --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks (February through April). A distinct stock based on the geographical isolation of the spawning population in the Elwha River. This stock is substantially reduced from historic levels due to the presence of two dams which block access to the majority of anadromous spawning and rearing habitat in the drainage.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Depressed** based on the **chronically low** production resulting from the loss of access to the majority of the available habitat in the drainage.

STEELHEAD - Winter

DISCOVERY BAY --

Escapement -- 12 -- 154 in Snow Creek (1977-1992).

Description -- Early February to mid-May spawning period. A distinct stock based on geographical isolation of the spawning population in tributaries to Discovery Bay, including Snow Creek and Salmon Creek.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Depressed** based on **short-term severe decline** in wild run-size.

SEQUIM BAY --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- A distinct stock based on the geographical isolation of the spawning population in tributaries to Sequim Bay, including Jimmycomelately, Johnson, and Gierin creeks. Spawning period is unknown but believed to be similar to other winter steelhead stocks (mid-February through early June).

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

DUNGENESS --

Escapement -- 176 -- 438 (1988-1992). WDFW escapement goal = 1,169.

Description -- Mid-February through early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the Dungeness River, Grey Wolf River and tributaries.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Depressed** based on **chronically low** wild spawner escapement.

MORSE CREEK/INDEPENDENTS --

Escapement -- 60 -- 145 in Morse Creek (1984-1992). WDFW escapement goal in Morse Creek = 120.

Description -- Mid-February to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in McDonald, Siebert, and Morse creeks.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Depressed** based on **short-term severe decline** in wild spawner escapement in Morse Creek.

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Strait of Juan de Fuca Winter Steelhead - Cont.

ELWHA --

Escapement -- Unknown. WDW escapement goal = 180.

Description -- Mid-February to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the Elwha River. This stock is substantially reduced from historic levels due to the presence of two dams which block access to the majority of anadromous spawning and rearing habitat in the drainage.

Origin and Production Type -- A **mixed** stock sustained by **wild** production.

Status -- **Depressed** based on the **chronically low** production resulting from loss of access to the majority of the available habitat in the drainage and a short-term severe decline in total harvest of wild steelhead.

SALT CREEK/INDEPENDENTS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other winter steelhead stocks (mid-February to early June). A distinct stock based on the geographical isolation of the spawning population in Salt, Whiskey, Colville, and Field creeks.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

LYRE --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other winter steelhead stocks (mid-February to early June). A distinct stock based on the geographical isolation of the spawning population in the Lyre River.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Unknown**, comprised of a historically small number of steelhead.

PYSHT/INDEPENDENTS --

Escapement -- 200 -- 445 in Pysht River (1984-1992). WDFW escapement goal in Pysht River = 200.

Description -- Mid-February to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in Pysht River, Deep Creek, East Twin River, and West Twin River.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Healthy** based on wild spawner escapement in Pysht River.

CLALLAM --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Mid-February to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the Clallam River and tributaries.

Origin and Production Type -- Unresolved by state and tribes.

Status -- **Unknown**

TABLE 12. PUGET SOUND SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Strait of Juan de Fuca Winter Steelhead - Cont.

HOKO --

Escapement -- 374 -- 913 (1985-1992). WDFW escapement goal = 400.

Description -- Mid-February to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the Hoko River, Little Hoko River, and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

SEKIU --

Escapement -- Unknown. An escapement goal has not been identified.

Description -- Mid-February to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the Sekiu River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

SAIL --

Escapement -- Unknown. An escapement goal has not been identified.

Description -- Mid-February to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the Sail River.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

TABLE 13.

WASHINGTON COASTAL SALMON AND STEELHEAD STOCKS

SOOES/OZETTE

CHINOOK - Fall

SOOES --

Escapement -- Unknown

Description -- Spawning takes place late September through mid-November. The fish are removed from the river and spawned at the USFWS hatchery on the Sooes.

Origin and Production Type -- A **native** stock with **cultured** production.

Status -- **Unknown**

CHUM - Fall

SOOES --

Escapement -- Unknown

Description -- Spawning takes place throughout November. The fish are removed from the river and spawned at the USFWS hatchery on the Sooes. This stock is a Quilcene stock introduced from the Lake Quinault hatchery.

Origin and Production Type -- A **non-native** stock with **cultured** production.

Status -- **Unknown**

OZETTE --

Escapement -- Unknown

Description -- Spawning takes place from late October to early December in the Ozette River below the lake and larger tributaries such as Big River, Umbrella Creek and Crooked Creek.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

COHO -

SOOES/WAATCH --

Escapement -- Unknown

Description -- Spawning takes place mid-October through January. For spawning distribution, 1,000 -- 2,000 coho are released above the weir at the USFWS hatchery on the Sooes.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Unknown**

OZETTE --

Escapement -- Unknown

Description -- Spawning takes place from late October through January in the tributaries to Lake Ozette and possibly in the lake outlet.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Sooes/Ozette - Cont

SOCKEYE -

OZETTE --

Escapement -- 263 -- 2,191(1977-1991).

Description -- The spawning distribution is in the lake, specifically at Olson's Landing and Allen's Bay near Umbrella Creek, and perhaps to a small degree in the Ozette River. Spawning is in December and January. This stock is supplemented with 40 -- 100,000 fry from sockeye caught off the spawning beds and reared at the Makah Tribal Hatchery on Umbrella Creek.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** due to **chronically low** escapement levels.

STEELHEAD - Winter

SOOES/WAATCH --

Escapement -- Unknown. Spawner escapement is not monitored for this stock nor has an escapement goal been identified.

Description -- A distinct stock based on the geographical isolation of the spawning population in the Sooes River and Waatch River and tributaries. Spawning period is unknown but believed to be similar to other winter steelhead stocks along the coast (mid-February to early June).

Origin and Production Type -- A native stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

OZETTE --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other winter steelhead stocks along the coast (mid-February to early June). A distinct stock based on the geographical isolation of the spawning population in the Ozette River, Big River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

QUILLAYUTE

CHINOOK - Spring

SOL DUC --

Escapement -- 100 -- 1,800 (1976-1992).

Description -- Spawning occurs late August to mid-September. Spawning takes place from the confluence with the Quillayute River up-stream into the headwaters (over 55 miles). Production is primarily from naturally-spawning hatchery fish.

Origin and Production Type -- A **non-native** stock with **composite** production.

Status -- **Healthy**

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Quillayute - Cont.

CHINOOK - Summer

QUILLAYUTE/BOGACHIEL --

Escapement -- 35 -- 656 (1980-1992).

Description -- Late August to mid-October spawning, mostly in the mainstem Bogachiel, occasionally in the mainstem Quillayute.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Unknown**

SOL DUC --

Escapement -- 250 -- 1,131 (1980-1992).

Description -- Late August to mid-October spawning, mostly in the mainstem Sol Duc River. In years with high late summer flows some spawning is observed in Beaver and Bear creeks.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

CALAWAH --

Escapement -- 85 -- 1,125 (1980-1992).

Description -- Late August to mid-October spawning, mostly in the mainstem and South Fork Calawah. In years with high late summer flows, some spawning is observed in the lower three miles of the Sitkum River and the lower three miles of the North Fork Calawah.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

CHINOOK - Fall

QUILLAYUTE/BOGACHIEL --

Escapement -- 308 -- 3,210 (1982-1992).

Description -- Late October to early December spawning, mostly in the mainstem Bogachiel. Redd densities are low in the mainstem Quillayute, except in low flow years. Some spawning occurs in Bear Creek.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

DICKEY--

Escapement -- 78 -- 1,393 (1982-1991).

Description -- Late October to early December spawning in the mainstem, West Fork and East Fork. Coal Creek has high numbers of spawners some years, and other small to medium tributaries can also support small numbers of spawners.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Quillayute Fall Chinook - Cont.

SOL DUC --

Escapement -- 1,235 -- 7,658 (1982-1991).

Description -- Late October to early December spawning in both the mainstem and larger tributaries. In high flow years, large numbers of spawners can be found in Gunderson Lake, Beaver and Bear creeks and numerous small and medium tributaries.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Healthy**

CALAWAH --

Escapement -- 453 -- 4,947 (1982-1991).

Description -- Late October to early December spawning in the mainstem and lower South Fork Calawah; in some years spawning is observed in the lower three miles of the Sitkum River and the lower 11 miles of the North Fork Calawah.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

CHUM - Fall

QUILLAYUTE --

Escapement -- Unknown

Description -- Late October to Late December spawners. Chum are observed in low densities throughout the drainage. Spawning occurs in mainstem reaches of the Quillayute, Dickey, Sol Duc, and Calawah rivers and their accessible tributaries.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

COHO - Summer

SOL DUC --

Escapement -- 600 -- 1,573 (1976-1991).

Description -- Late October to early December spawning, mainly in the Sol Duc River from RM 61 to RM 63, above the Salmon Cascades; additional spawning in Bear, Camp, and Beaver creeks in years with larger run sizes.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Healthy**

COHO - Fall

DICKEY --

Escapement -- 438 -- 4,670 (1980-1991).

Description -- Mid-November to January spawning in most of the small- to medium-sized streams in this drainage.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

SOL DUC --

Escapement -- 1,348 -- 5,743 (1980-1991).

Description -- Mid-November to mid-January spawning in small- and medium-sized tributaries to the Sol Duc.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Healthy**

BOGACHIEL --

Escapement -- 934 -- 1,918 (1980-1991).

Description -- Mid-November to mid-January spawning in small- to medium-sized tributaries and side channels of the upper mainstem.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

CALAWAH --

Escapement -- 709 -- 1,670 (1980-1991).

Description -- Mid-November to mid-January spawning in small- to moderate-sized tributaries.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

SOCKEYE

LAKE PLEASANT --

Escapement -- Unknown

Description -- Late November to early January spawning, predominately on beaches, with little reproduction in tributaries.

Origin and Production Type -- A **native** stock with **wild** production

Status -- **Unknown**

STEELHEAD -Summer

SOL DUC --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks along the coast (February through April). A distinct stock based on the geographical isolation of the spawning population in the Sol Duc River and its forks. Distinct from wild winter steelhead in the Sol Duc based on run timing. Believed to spawn in the upper reaches of the river. This would geographically isolate the summer steelhead in the Sol Duc River from other summer steelhead stocks in the Quillayute River system.

Origin and Production Type -- Origin unresolved by state and tribes. Sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Quillayute Summer Steelhead - Cont.

BOGACHIEL --

Escapement -- Unknown. Spawner escapement is not monitored for this stock nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks along the coast (February through April). A distinct stock based on the geographical isolation of the spawning population in the Bogachiel River. Distinct from wild winter steelhead in the Bogachiel River based on run timing. Believed to spawn in the upper reaches of the river. This would geographically isolate the summer steelhead in the Bogachiel from other summer steelhead stocks in the Quillayute River system.

Origin and Production Type -- Origin unresolved by state and tribes. Sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

CALAWAH --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks along the coast (February through April). A distinct stock based on the geographical isolation of the spawning population in the Calawah River. Distinct from wild winter steelhead in the Calawah based on run timing. Believed to spawn in the upper reaches of the mainstem Calawah River, South Fork Calawah River, and Sitkum River. This would geographically isolate the summer steelhead in the Calawah from other summer steelhead stocks in the Quillayute River system.

Origin and Production Type -- Origin unresolved by state and tribes. Sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

STEELHEAD - Winter

QUILLAYUTE/BOGACHIEL --

Escapement -- 973 -- 4,553 (1978-1992).

Description -- Mid-February to mid-June spawning period. A distinct stock based on geographical isolation of the spawning population in the mainstem Quillayute River, Bogachiel River, and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

DICKEY --

Escapement -- 179 -- 1,607 (1978-1992).

Description -- Mid-February to mid-June spawning period. A distinct stock based on geographical isolation of the spawning population in the Dickey River, its forks, and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

SOL DUC --

Escapement -- 1,967 -- 5,333 (1978-1992).
Description -- Mid-February to mid-June spawning period. A distinct stock based on geographical isolation of the spawning population in the Sol Duc River and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Healthy** based on wild spawner escapement.

CALAWAH --

Escapement -- 989 -- 4,526 (1978-1992).
Description -- Mid-February to mid-June spawning period. A distinct stock based on geographical isolation of the spawning population in the Calawah River and its forks, Sitkum River, and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Healthy** based on wild spawner escapement.

HOH

CHINOOK -Spring/Summer

HOH --

Escapement -- 546 -- 4,721 (1973-1991).
Description -- Mid-August to mid-October spawning in North Fork, South Fork, mainstem, Mt. Tom Creek, and most larger tributaries.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

CHINOOK - Fall

HOH --

Escapement -- 1,420 -- 5,148 (1973-1992).
Description -- Mid-October to late December spawning in the mainstem, North Fork, South Fork, and larger tributaries.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

CHUM - Fall

HOH --

Escapement -- Unknown
Description -- November and December spawners in the mainstem Hoh and side channels upstream to the vicinity of Willoughby Creek. State managers believe this small population is likely a reproductively isolated stock. Tribal mangers believe chum spawning in the Hoh River may be primarily produced from populations in other river systems.
Origin and Production Type -- A **unknown** stock with **unknown** production.
Status -- **Unknown** (unresolved by state and tribes - see Appendix Stock Report).

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Hoh - Cont.

COHO

GOODMAN/MOSQUITO CREEKS --

Escapement -- Unknown

Description -- Spawning takes place from late October to mid-February. Spawning occurs throughout the Mosquito Creek drainage and most of the Goodman Creek drainage.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

HOH --

Escapement -- 1,700 -- 7,400 (1980-1992).

Description -- Late October through mid-February spawn timing in tributaries, spring-fed channels and river side-channels from the mouth to RM 48 on the North Fork and RM 10 on the South Fork.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

STEELHEAD - Summer

HOH --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks along the coast (February through April). A distinct stock based on the geographical isolation of the spawning population in the Hoh River, South Fork Hoh River, and tributaries. Distinct from wild winter steelhead in the Hoh River based on run-timing. Believed to spawn in the upper reaches of the river.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**

STEELHEAD - Winter

GOODMAN CREEK --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other winter steelhead stocks along the coast (Mid-February through early June). A distinct stock based on the geographical isolation of the spawning population in Goodman Creek.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

MOSQUITO CREEK --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other winter steelhead stocks along the coast (Mid-February through early June). A distinct stock based on the geographical isolation of the spawning population in Mosquito Creek.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

HOH --

Escapement -- 1,290 -- 4,593 (1976-1992). WDFW escapement goal = 2,400

Description -- Mid-February to mid-June spawning period. A distinct stock based on geographical isolation of the spawning population in the Hoh River, South Fork Hoh River, and tributaries.

Origin and Production Type -- A native stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

KALALOCH

COHO -

KALALOCH CREEK --

Escapement -- Unknown

Description -- November through December spawning period. Spawning distribution unknown but probably occurs throughout accessible areas of Kalaloch Creek and its tributaries.

Origin and Production Type -- A **native** stock of **wild** production type.

Status -- **Unknown**

STEELHEAD - Winter

KALALOCH CREEK --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other winter steelhead stocks along the coast (mid-February to mid-June). A distinct stock based on the geographical isolation of the spawning population in Kalaloch Creek, its forks, and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)

QUEETS

CHINOOK - Spring/Summer

QUEETS --

Escapement -- 525 -- 2,295 (1981-1991).

Description -- Spawning takes place from mid-September through mid-October. Distribution of the spawning grounds includes the mainstem Queets from RM 6 to RM 43. Additional spawning occurs in the lower reaches of Sams River and Matheny Creek. The recent two years low escapement followed well-above average escapement for the previous three years.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on a **short-term severe decline** in escapement.

CLEARWATER --

Escapement -- 38 -- 570 (1981-1991).

Description -- Spawning takes place from mid-September through mid-October. Distribution of the spawning grounds includes the mainstem Clearwater from the mouth, upstream approximately 24 river miles near the confluence with the Solleks River. The recent two years low escapement followed well-above average escapement for the previous three years.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on a **short-term severe decline** in escapement.

CHINOOK - Fall

QUEETS --

Escapement -- 1,688 -- 6,855 (1981-1991).

Description -- Spawning takes place from mid-October through mid-December. Distribution of the spawning grounds includes the mainstem Queets from RM 2 to RM 37. In addition, Sams River, Salmon River, and Matheny Creek each contain several miles of extensively utilized spawning habitat. Also, fall chinook utilize spawning habitat in the lower reaches of several other smaller tributaries.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

CLEARWATER --

Escapement -- 799 -- 3,037 (1981-1991).

Description -- Spawning takes place from mid-October through mid-December. Distribution of the spawning grounds includes the mainstem Clearwater, upstream to RM 24, and major tributaries such as Miller Creek, Christmas Creek, Snahapish River, Solleks River and lower reaches of several smaller tributaries.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Queets - Cont.

CHUM - Fall

QUEETS --

Escapement -- Unknown

Description -- Spawning takes place from early November through mid-December. Distribution of the spawning grounds is not well understood, but some spawning in the lower Queets and Clearwater Rivers does occur. The lower reaches of Salmon River and Matheny Creek are also used by chum for spawning. State managers believe this small population is likely a reproductively isolated stock. Tribal managers believe chum spawning in the Queets River may be primarily produced from populations in the Quinault River and perhaps the Grays Harbor drainage.

Origin and Production Type -- An **unknown** stock from **unknown** production.

Status -- **Unknown** (unresolved by state and tribes - see Appendix Stock Report).

COHO

QUEETS --

Escapement -- 1,500 -- 5,400 (1979-1991).

Description -- Spawning takes place from mid-November through the end of January. Distribution of the spawning grounds includes the mainstem Queets from approximately RM 2 upstream to RM 37, significant reaches in the Sams and Salmon rivers, Matheny Creek, and all other accessible tributaries to the Queets. Tribal managers believe that improved production is achieved through supplementation. Continued evaluation of this stock's production potential is planned by state and tribal managers.

Origin and Production Type -- A **native** stock from **composite** production.

Status -- **Healthy**

CLEARWATER --

Escapement -- 700 -- 3,900 (1979-1991).

Description -- Spawning takes place from mid-November through the end of January. Distribution of the spawning grounds includes the mainstem Clearwater, upstream to RM 34, and major tributaries such as Miller Creek, Christmas Creek, Snahapish River, Solleks River and all other accessible tributaries to the Clearwater. Tribal managers believe that improved production is achieved through supplementation. Continued evaluation of this stock's production potential is planned by state and tribal managers.

Origin and Production Type -- A **native** stock from **composite** production.

Status -- **Healthy**

SALMON RIVER --

Escapement -- 1,100 -- 8,700 (1983-1991).

Description -- Spawning takes place from mid-October through mid-November. Spawning grounds are located throughout the Salmon River basin and in neighboring tributaries near the Salmon River.

Origin and Production Type -- A **non-native** stock from **composite** production.

Status -- **Healthy**

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Queets - Cont.

STEELHEAD - Summer

QUEETS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks along the coast (February through April). A distinct stock based on the geographical isolation of the spawning population in the Queets River. Distinct from wild winter steelhead in the Queets based on run timing. Believed to spawn in the upper reaches of the river.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on combined sport and tribal harvest of wild steelhead.

CLEARWATER --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks along the coast (February through April). A distinct stock based on the geographical isolation of the spawning population in the Clearwater River. Distinct from wild winter steelhead in the Clearwater River based on run-timing. Believed to spawn in the upper reaches of the river.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

STEELHEAD - Winter

QUEETS --

Escapement -- 2,248 -- 4,841 (1980-1992).

Description -- Mid-February through June spawning period. A distinct stock based on geographical isolation of the spawning population in the Queets River, Salmon River, Sams River, Matheny Creek and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

CLEARWATER --

Escapement -- 1,638 -- 2,662 (1982-1992).

Description -- Mid-February through June spawning period. A distinct stock based on geographical isolation of the spawning population in the Clearwater River, Solleks River, Miller Creek, Christmas Creek, Snahapish River, and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)

RAFT

CHINOOK - Fall

RAFT --

Escapement -- Unknown

Description -- Spawning is thought to occur mid-October through mid-November. Spawning distribution is unknown.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

COHO

RAFT --

Escapement -- Unknown

Description -- Spawning is thought to occur throughout the basin from mid-November through mid-January. Spawning locations are unknown.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Unknown**

STEELHEAD - Winter

RAFT --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other coastal winter stocks (mid-February to early June). A distinct stock based on the geographical isolation of the spawning population in the Raft River and tributaries. Extensive stocking of Quinault Indian Nation Hatchery and Quinault National Fish Hatchery (Cook Creek) steelhead fry has occurred.

Origin and Production Type -- A **mixed** stock sustained by **composite** production.

Status -- **Unknown.**

QUINAULT

CHINOOK - Spring/Summer

QUINAULT --

Escapement -- 298 -- 1,685 (1987-1992).

Description -- Spawning takes place from early September through mid-October. Distribution of the spawning grounds includes the mainstem Quinault from approximately RM 9 upstream to Lake Quinault and from the North end of the lake, upstream to RM 53. Additional spawning occurs in the lower eight miles of the North Fork. The recent two years low escapement followed well-above average escapement for the previous three years.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on a **short-term severe decline** in escapement.

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Quinault - Cont.

CHINOOK - Fall

QUINAULT --

Escapement -- 3,078 -- 4,630 (1987-1992).

Description -- Spawning takes place from mid-October through mid-December. Distribution of the spawning grounds includes the mainstem Quinault, from approximately RM 3, upstream to Lake Quinault, and from the North end of the lake, upstream to RM 53. Additional spawning occurs in the lower eight miles of the North Fork and lower reaches on several tributaries.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

COOK CREEK --

Escapement -- 2,140 -- 4,736 (1986-1991).

Description -- Spawning takes place from mid-October through mid-December. Distribution of the spawning grounds includes the mainstem Quinault, from approximately RM 3, upstream to Lake Quinault, and the four mile reach below the hatchery on Cook Creek. Additional spawning occurs in the lower reaches of several tributaries.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

CHUM - Fall

QUINAULT --

Escapement -- 1,860 -- 12,155 (1977-1991).

Description -- Spawning takes place from late October through early December. Distribution of the spawning grounds include the mainstem Quinault, from approximately RM 3, upstream to Lake Quinault, and from the North end of the lake, upstream to RM 47 and in major tributaries.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

COHO

QUINAULT --

Escapement -- 1,194 -- 9,250 (1986-1991).

Description -- Spawning takes place from early November through mid-February. Distribution of the spawning grounds include the mainstem Quinault, from approximately RM 3, upstream to Lake Quinault, and from the North end of the lake, upstream to RM 53. Additional spawning occurs in the lower eight miles of the North Fork and all accessible tributaries.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Unknown**

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Quinault Coho - Cont.

COOK CREEK --

Escapement -- 1,431 -- 22,531(1986-1991).

Description -- Spawning takes place from mid-October through late November. Distribution of the spawning grounds include the mainstem Quinault, from approximately RM 3, upstream to Lake Quinault, and from the North end of the lake, to approximately RM 41 near the confluence of Big Creek. Additional spawning occurs in accessible tributaries downstream of the lake.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

SOCKEYE

QUINAULT --

Escapement -- 11,546 -- 64,172 (1972-1992).

Description -- Spawning takes place from mid-October through end of February. Distribution of the spawning grounds include the mainstem Quinault above Lake Quinault to RM 53. Primary spawning habitat is located in the mainstem Quinault between the lake and the confluence of the North and East forks and the major tributaries in that reach.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

STEELHEAD - Summer

QUINAULT --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period unknown but believed to be similar to other summer steelhead stocks (February through April). A distinct stock based on the geographical isolation of the spawning population in the Quinault River. Distinct from winter steelhead stock in the Quinault River based on run-timing. Spawning believed to take place in the upper reaches of river.

Origin and Production Type -- A native stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

STEELHEAD - Winter

QUINAULT/LAKE QUINAULT --

Escapement -- (1978-1992) 1,716 -- 3,646

Description -- A distinct stock based on the geographical isolation of the spawning population in the Quinault River primarily downstream of Lake Quinault. Hatchery broodstock collected at Quinault Indian Nation Lake Quinault net pens includes some wild winter steelhead each year which are spawned through March. Mid-February through June spawning period.

Origin and Production Type -- A **mixed** stock sustained by **wild** production.

Status -- **Healthy** based on spawner escapement.

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Quinault Winter Steelhead - Cont.

QUINAULT --

Escapement -- 772 -- 2,722 (1978-1992). Escapement goal = 1,200
Description -- Mid-February through June spawning period. A distinct stock based on the geographical isolation of the spawning population in the upper Quinault River.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Healthy** based on wild spawner escapement.

MOCLIPS/COPALIS

CHINOOK - Fall

MOCLIPS --

Escapement -- Unknown
Description -- Spawning is thought to occur mid-October through mid-November. Spawning distribution is unknown.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Unknown**

COPALIS --

Escapement -- Unknown
Description -- Spawning is thought to occur mid-October through mid-November. Spawning distribution is unknown.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Unknown**

COHO

MOCLIPS --

Escapement -- Unknown
Description -- Spawning is thought to occur throughout the basin, from mid-November through mid-January.
Origin and Production Type -- A **mixed** stock with **composite** production.
Status -- **Unknown**.

COPALIS --

Escapement -- Unknown
Description -- Spawning is thought to occur throughout the basin from mid-November through mid-January.
Origin and Production Type -- A **mixed** stock with **composite** production.
Status -- **Unknown**

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Moclips/Copalis - Cont.

STEELHEAD - Winter

MOCLIPS --

Escapement -- 130 -- 250 (1988-1992). No escapement goal has been identified for this stock.
Description -- Mid-February to early June spawning period. A distinct stock based on geographical isolation of the spawning population in the Moclips River and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Healthy** based on wild spawner escapement.

COPALIS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.
Description -- Mid-February to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the Copalis River and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Unknown**, comprised of a historically small number of steelhead.

GRAYS HARBOR

CHINOOK - Spring

CHEHALIS --

Escapement -- 610 -- 3,488 (1982-1991).
Description -- September through early-October spawning. Spawning occurs primarily in the Skookumchuck, Newaukum and upper mainstem Chehalis rivers. With the exception of 1988 and 1989 (two strong return years) annual escapements have been hovering around the escapement goal (1,400 adults).
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

CHINOOK -- Summer

SATSOP --

Escapement -- 37 -- 750 (1982-1990).
Description -- September spawning. There may be some influence from historic releases of a variety of hatchery stocks. Escapement levels below 200 adults/year have been typical in recent years.
Origin and Production Type -- A **mixed** stock with **wild** production.
Status -- **Depressed** based on a **long-term negative trend** in escapement.

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Grays Harbor - Cont.

CHINOOK - Fall

HUMPTULIPS --

Escapement -- 2,380 -- 9,542 (1984-1990).

Description -- Mid-October through November spawning. Primary spawning areas are the mainstem Humptulips, East Fork (to RM 15), West Fork (to RM 46), and Big, Stevens, Donkey, O'Brien, Newberry, Rainbow, and Grouse creeks. Currently a "native stock" hatchery program is being developed. There have been releases of various hatchery stocks since the early 1950s. Most recently Willapa Bay stock was used.

Origin and Production Type -- A **mixed** stock with **wild** production

Status -- **Healthy**

HOQUIAM --

Escapement -- 644 -- 1,480 (1985-1990).

Description -- Mid-October through November spawning primarily in the East and West forks of the Hoquiam River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

WISHKAH --

Escapement -- 719 -- 1,474 (1985-1990).

Description -- Mid-October through November spawning primarily in the mainstem Wishkah. A "native stock" enhancement program is ongoing.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Healthy**

WYNOOCHEE --

Escapement -- 1,681 -- 7,601 (1985-1990).

Description -- Mid-October through November spawning, primarily above RM 10.5 and in Carter, Schafer and Helm creeks. There were periodic releases of hatchery stocks in the early to mid-1970s.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

SATSOP --

Escapement -- 2,009 -- 4,234 (1986-1990).

Description -- October through November spawning in the East Fork, Middle Fork, West Fork, and mainstem Satsop, as well as a number of tributaries including Black and Decker creeks. Significant hatchery releases of a variety of stocks occurred throughout the 1950s, 1960s and early 1970s. Currently an ongoing hatchery production program using Willapa stock and Willapa/Humptulips hybrid stock significantly influences annual escapements.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Grays Harbor Fall Chinook - Cont.

CHEHALIS --

Escapement -- 2,971 -- 7,837(1985-1990).

Description -- October through November spawning primarily in the mainstem (RM 33.3-106.2), Cloquallum Creek, Porter Creek and the Black and Skookumchuck rivers. Releases of various hatchery stocks occurred in the 1950s, 1960s, and early 1970s.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Healthy**

JOHNS/ELK AND S. BAY TRIBUTARIES --

Escapement -- Unknown

Description -- October through November spawning in the mainstems of Johns and Elk rivers and in the North Fork Johns River. Releases of hatchery origin stocks occurred in the early 1950s, mid- to late 1960s, and early 1970s.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Unknown**

CHUM - Fall

HUMPTULIPS --

Escapement -- Unknown

Description -- November through mid-December spawning primarily in Big Creek, Stevens Creek, West Fork (to RM 46), East Fork (to RM 4) and mainstem Humptulips between RM 7.0 and 28.1. There were some attempts (1983-1985 broods) at establishing a hatchery run.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

CHEHALIS --

Escapement -- Unknown

Description -- November through mid-December spawning throughout lower Chehalis River tributaries. Significant numbers use the mainstem Wynoochee and Satsop rivers, and probably also the East Fork Hoquiam, Wishkah River and tributaries, Cloquallum Creek and tributaries, Chehalis mainstem and Black River. There were some generally unsuccessful attempts at enhancement with Willapa and Hood Canal stocks, primarily in the Satsop River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

COHO -

HUMPTULIPS --

Escapement -- 4,432 -- 18,334 (1984-1990).

Description -- Mid-November through February spawning in the mainstem, East Fork, West Fork, and all significant accessible tributaries. Large scale off- station hatchery releases began in the 1950s and have continued through the mid-1980s. In 1978 Humptulips hatchery began large-scale on-station releases.

Origin and Production Type -- A **mixed** stock with **composite** production

Status -- **Healthy**

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Grays Harbor Coho - Cont.

HOQUIAM --

Escapement -- 782 -- 4,324 (1984-1990).

Description -- Mid-November through February spawning in the Hoquiam and all significant accessible tributaries. Large-scale off-station hatchery releases began in the 1950s and have continued through the early 1990s.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

WISHKAH --

Escapement -- 1,182 -- 8,297(1984-1990).

Description -- Mid-November through February spawners in the Wishkah and all significant accessible tributaries. Large-scale off-station hatchery releases began in the 1950s and have continued through the early 1990s

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

WYNOOCHEE --

Escapement -- 2,303 -- 5,979 (1984-1990).

Description -- Mid-November through February spawning primarily in the mid-and-upper-reach tributaries (Carter, Schafer and Big creeks) and the mainstem. Large scale off-station hatchery releases began in the 1950s and have continued through the early 1990s.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

SATSOP --

Escapement -- 3,354 -- 21,374 (1984-1990).

Description -- Mid-November through February spawning in nearly all tributaries and all forks of the mainstem. Large-scale station hatchery activities began in the 1890s and are ongoing.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

CHEHALIS --

Escapement -- 5,803 -- 46,632 (1984-1990).

Description -- Mid-November through February spawning in the upper mainstem, East Fork, West Fork, and all suitable accessible tributaries. Large-scale off-station hatchery releases began in the 1950s and have continued through the early 1990s.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

JOHNS/ELK RIVERS S. AND BAY TRIBUTARIES --

Escapement -- 724 -- 1,383.

Description -- Mid-November through February spawning in upper Johns River mainstem, North Fork, and South Fork, and most accessible tributaries. Large-scale off-station hatchery releases began in the 1950s and continued through the early 1970s. Currently a large fingerling rearing/release program is ongoing.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Healthy**

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Grays Harbor - Cont.

STEELHEAD - Summer

HUMPTULIPS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks (February through April). A distinct stock based on the geographical isolation of the spawning population in the Humptulips River. Distinct from winter steelhead in the Humptulips River based on run- timing. Spawning is believed to take place in the upper reaches of the river.

Origin and Production Type -- A native stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

CHEHALIS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Spawning period is unknown but believed to be similar to other summer steelhead stocks (February through April). A distinct stock based on the geographical isolation of the spawning population. Distinct from winter steelhead in the Chehalis River based on run-timing. Spawning takes place in the upper Wynoochee River and possibly in the upper reaches of other streams in the Chehalis River system.

Origin and Production Type -- **Unknown** origin (a native stock originally returned to the Wynoochee and possibly other rivers, but there is uncertainty about the amount of contribution by hatchery summer steelhead spawning in the wild), stock sustained by **wild** production**.**

Status -- **Unknown**, comprised of a historically small number of steelhead.

STEELHEAD - Winter

Humptulips --

Escapement -- 1,967 -- 4,470 (1979-1992). WDFW escapement goal = 1,600.

Description -- Mid-February through June spawning period. A distinct stock based on geographical isolation of the spawning population in the Humptulips River and tributaries..

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

HOQUIAM --

Escapement -- 487 -- 862 (1984-1992). WDFW escapement goal = 450.

Description -- Mid-February to early June spawning period. A distinct stock based on geographical isolation of the spawning population in the Hoquiam River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

WISHKAH --

Escapement -- 472 -- 1,534 (1984-1992). WDFW escapement goal = 412

Description -- Mid-February to early June spawning period. A distinct stock based on geographical isolation of the spawning population in the Wishkah River, West Fork Wishkah River, and tributaries.

Origin and Production Type -- A **native, wild** stock sustained by natural production.

Status -- **Healthy** based on wild spawner escapement.

Grays Harbor Winter Steelhead - Cont.

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)

WYNOOCHEE --

Escapement -- 998 -- 3,190. WDFW escapement goal = 1,260.

Description -- Mid-February through June spawning period. A distinct stock based on geographical isolation of the spawning population in the Wynoochee River and tributaries. Hybridization between native adults and hatchery adults originating from the native Wynoochee stock has likely been occurring since the early 1980s due to similar spawn timing of native and hatchery stocks.

Origin and Production Type -- A **mixed** origin, **composite** stock sustained by both natural and artificial production.

Status -- **Healthy** based on spawner escapement.

SATSOP --

Escapement -- 1,466 -- 3,504 (1984-1992). WDFW escapement goal = 2,800.

Description -- Mid-February through June spawning period. A distinct stock based on geographical isolation of the spawning population in the mainstem Satsop River, West Fork Satsop, Middle Fork Satsop, East Fork Satsop, Bingham Creek, and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Depressed** based on **chronically low** wild spawner escapement.

CHEHALIS --

Escapement -- 2,540 -- 4,156 (1984-1992). WDFW escapement goal = 2,700.

Description -- Mid-February to early June spawning period. A distinct stock based on geographical isolation of the spawning population. Wild winter steelhead from Chehalis River tributaries have probably intermingled with mainstem spawning stocks. Wild steelhead spawning in the mainstem Chehalis and its forks, Cloquallum Creek, and other smaller tributaries are included in this stock.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

SKOOKUMCHUCK/NEWAUKUM --

Escapement -- 644 -- 1,202 (1984-1002). WDFW escapement goal = 973.

Description -- Mid-February to early June spawning period. A distinct stock based on geographical isolation of the spawning population in Skookumchuck River, Newaukum River and forks, and tributaries. Hybridization between wild adults and hatchery adults originating from the native Skookumchuck stock has likely been occurring since 1976 due to similar spawn timing of native and hatchery stocks.

Origin and Production Type -- A **mixed** stock sustained by **composite** production.

Status -- **Depressed** based on **chronically low** spawner escapement.

SOUTH HARBOR --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- February through May spawning period. A distinct stock based on the geographical isolation of the spawning population. Wild steelhead spawning in Johns River, Elk River, Andrews Creek, and other small streams of South Bay in Grays Harbor are included in this stock.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically naturally small number of steelhead.

WILLAPA BAY

CHINOOK - Fall

WILLAPA BAY --

Escapement -- 2,743 -- 25,994 (1985-1991).
Description -- October through November spawning in all major Willapa Bay systems, including North, Willapa, Palix, Nemah and Naselle rivers. Hatchery strays contribute significantly to annual natural spawning escapements.
Origin and Production Type -- A **mixed** stock with **composite** production.
Status -- **Healthy**

FALL RIVER - EARLY (NORTH RIVER) --

Escapement -- 122 -- 823 (1985-1991).
Description -- Late September through late October spawning in the Fall River and the mainstem North River in the vicinity of the confluence.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Depressed** due to **chronically low** escapement.

CHUM -

NORTH --

Escapement -- 2,822 -- 15,950 (1981-1990).
Description -- Late October through November spawning. Primary spawning streams are Lower Salmon and Bitter creeks.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

WILLAPA --

Escapement -- 29 -- 948 (1981-1990)(index count).
Description -- Late October through November spawning. Primary spawning occurs in the South Fork Willapa River. Less important spawning areas include Wilson, Mill, and Trap creeks.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

PALIX --

Escapement -- 2,498 -- 13,475 (1981-1990).
Description -- Late October through November spawning. Nearly all spawning occurs in the lower three miles of Canon River, tributary to the Middle Fork Palix.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

NEMAH --

Escapement -- 2,938 -- 12,645 (1981-1990).
Description -- Late October through November spawning. A large scale hatchery production program existed at Nemah Hatchery for many years. The hatchery program used native broodstock. The bulk of natural spawning occurs in Williams Creek and mainstem North Nemah River. Natural spawning also occurs in the Middle Fork Nemah.
Origin and Production Type -- A **native** stock with **wild** production.
Status -- **Healthy**

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Willapa Bay Fall Chum - Cont.

NASELLE --

Escapement -- 2,178 -- 7,809 (1981-1990).

Description -- Late October through November spawning. There may be some influence of Nemah stock due the transfer of Nemah stock into the Naselle hatchery program. Primary spawning areas include Ellsworth, Dell, Davis creeks and mainstem Naselle River. Lesser numbers of spawners are found in Bean, Cement, and Upper Salmon creeks. Naselle hatchery was the site of a large-scale production program during the middle 1980s. Also, during the middle 1980s a broodstocking and egg box project took place on Ellsworth Creek.

Origin and Production Type -- A **mixed** stock with **wild** production

Status -- **Healthy**

BEAR --

Escapement -- 1,484 -- 8,700 (1981-1990).

Description -- Late October through November spawning. Nearly all natural spawning is found in the mainstem between RM 3.6 and RM 7.0. A broodstocking and egg box program was conducted in the late 1970s and early 1980s.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Healthy**

COHO -

WILLAPA BAY --

Escapement -- Unknown

Description -- Late November through January spawning in all major drainages and nearly all accessible tributaries. Large scale off-station hatchery releases began in the 1950s and have continued through the early 1990s. Escapement estimates have not been made in recent years due to the focus of hatchery management. There is believed to be a late-spawning component similar to that in Grays Harbor which may be a separate stock.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Unknown**

STEELHEAD - Winter

NORTH RIVER/SMITH CREEK --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- February through May spawning period. A distinct stock based on the geographical isolation of the spawning population. Wild steelhead spawning in North River, Smith Creek, and Cedar River are included in this stock.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

TABLE 13. COASTAL SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Willapa Bay Winter Steelhead - Cont.

WILLAPA --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- February through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Willapa River, South Fork Willapa River, Wilson Creek, Mill Creek, and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on sport harvest of wild steelhead.

PALIX --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- February through May spawning period. A distinct stock based on the geographical isolation of the spawning population. Wild steelhead spawning in the Niawiakum and Bone River drainages and all three forks of the Palix and Canon rivers are included in this stock.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

NEMAH --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- February through May spawning period. A distinct stock based on the geographical isolation of the spawning population. Wild steelhead spawning in the North, Middle, and South Forks of the Nemah River and in Williams Creek are included in this stock.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

NASELLE --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- February through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Naselle River, Salmon Creek, and tributaries.

Origin and Production Type -- A **native, wild** stock sustained by natural production.

Status -- **Healthy** based on sport harvest of wild steelhead.

BEAR --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- February through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Bear River.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

COLUMBIA RIVER SALMON AND STEELHEAD STOCKS

LOWER COLUMBIA RIVER

CHINOOK - Spring

COWLITZ --

Escapement -- 90 -- 1,116 (1980-1991).

Description -- September to mid-October spawning period. The majority of this stock spawns in the eight mile stretch between the Cowlitz Salmon and Trout hatcheries. Minor numbers of naturally spawning chinook are observed below Blue Creek. Spring chinook are native to the Cowlitz River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Cowlitz River spring chinook stock status is **Healthy** based on escapement trend.

KALAMA --

Escapement -- 0 -- 2,892 (1980-1991).

Description -- Mid-September to mid-October spawning period. Most of the spawning in the Kalama River occurs between the upper Kalama Falls Hatchery (RM 36.8) and the lower Kalama Hatchery (RM 10.5). Spring chinook are native to the Kalama River. By the 1950s only remnant populations existed in the Kalama River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Kalama River spring chinook stock status is **Healthy** based on escapement trend.

LEWIS --

Escapement -- 345 -- 6,939 (1980-1991).

Description -- Late August to early October spawning period. Nearly all of the spawning on the Lewis River occurs in a four-mile reach from Merwin Dam downstream to the Lewis River Hatchery. Spring chinook are native to the Lewis.

Origin and Production Type -- a **mixed** stock with **composite** production.

Status -- The Lewis River spring chinook stock status is **Healthy** based on escapement trend.

CHINOOK - Fall

GRAYS --

Escapement -- 147 -- 2,685 (1967-1991).

Description -- Late September to mid-November spawning period. The majority of this stock spawns in the area of the Grays River Hatchery (West Fork) to the Covered Bridge. Fall chinook are native to the Grays River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Grays River fall chinook stock status is **Healthy** based on escapement trend.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lower Columbia Fall Chinook - Cont.

SKAMOKAWA CREEK --

Escapement -- 184 -- 5,596 (1967-1991)

Description -- September to October spawning period. Skamokawa Creek fall chinook spawn in the area from Standard and McDonald creeks to Wilson Creek, a distance of approximately 4.5 miles. Fall chinook may not be native to Skamokawa Creek.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Skamokawa Creek fall chinook status is **Healthy** based on escapement trend.

ELOCHOMAN --

Escapement -- 64 -- 2,458 (1964-1991).

Description -- Late September to mid-November spawning period. Elochoman River fall chinook spawn in the area from the Elochoman Salmon Hatchery downstream to the Foster Risk Bridge, a distance of approximately 6.0 miles. Tule fall chinook are native to the Elochoman River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Elochoman River fall chinook stock status **is healthy** based on escapement trend.

MILL CREEK --

Escapement -- 2 -- 1,867 (1984-1991).

Description -- September to October spawning period. Mill Creek fall chinook spawn in the area from Mill Creek Bridge downstream to the mouth, a distance of approximately 2.0 miles. Fall chinook may not be native to Mill Creek.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Mill Creek fall chinook stock status is **Healthy** based on escapement trend.

ABERNATHY CREEK --

Escapement -- 316 -- 3,917(1981-1991).

Description -- Late September to mid-November spawning period. Abernathy Creek fall chinook spawn in the area from the Abernathy Creek National Fish Hatchery downstream to the mouth, a distance of approximately 3.0 miles. Fall chinook may not be native to Abernathy Creek.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Abernathy Creek fall chinook stock status is **Healthy** based on escapement trend.

GERMANY CREEK --

Escapement -- 57 -- 1,234 (1982-1991).

Description -- September to October spawning period. Germany Creek fall chinook spawn in the area from the mouth to 3.5 miles upstream. Fall chinook may not be native to Germany Creek.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Germany Creek fall chinook stock status is **Healthy** based on escapement trend.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lower Columbia Fall Chinook - Cont.

COWLITZ RIVER --

Escapement -- 2,450 -- 23,345 (1967-1991).

Description -- September to December spawning period. Cowlitz River fall chinook spawn in the area from the Cowlitz River Salmon Hatchery to the Kelso Bridge, a distance of approximately 45.0 miles. Fall chinook are native to the Cowlitz River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Cowlitz River fall chinook stock status is **healthy** based on escapement trend.

COWEEMAN --

Escapement -- 38 -- 1,108 (1967-1991).

Description -- September to October spawning period. Coweeman River fall chinook spawn in the area from Mulholland Creek downstream to the Jeep Club Bridge, a distance of approximately 6.0 miles. Fall chinook are reportedly native to the Coweeman River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Coweeman River fall chinook stock status is **Healthy** based on escapement trend.

SOUTH FORK TOUTLE --

Escapement -- 0 -- 578 (1967-1981 and 1991).

Description -- September to October spawning period. South Fork Toutle River fall chinook spawn in the area from the 4700 Bridge downstream to the confluence with the mainstem Toutle River, a distance of approximately 2.6 miles. Fall chinook are native to the Toutle River.

Origin and Production Type -- Origin is **unknown**, and production is **composite.**

Status -- **Depressed** based on a **long-term negative trend** in escapement.

GREEN (TOUTLE) --

Escapement -- 0 -- 6,654 (1967-1981 and 1990, 1991).

Description -- September to October spawning period. Green River fall chinook spawn in the area from the Toutle River Hatchery downstream to the mouth, a distance of approximately 0.6 miles. Fall chinook are native to the Green River.

Origin and Production Type -- Origin is **unknown,** and production is **composite**.

Status -- **Depressed** based on a **long-term negative trend** in escapement.

KALAMA --

Escapement -- 1,259 -- 24,549 (1967-1991).

Description -- Late September to November spawning period. Kalama River fall chinook spawn in the area from Italian Creek downstream to the I-5 Bridge, a distance of approximately 8.7 miles. Kalama River fall chinook are native to the subbasin.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Kalama River fall chinook stock status is **healthy** based on escapement trend.

LEWIS --

Escapement -- 4,199 -- 22,977(1967-1991).

Description -- October to January spawning period. Lewis River fall chinook spawn in the area from Merwin Dam downstream to the Lewis River Salmon Hatchery, a distance of approximately 4.0 miles. Fall chinook are native to the Lewis River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- The North Fork Lewis natural fall chinook stock status is **Healthy** based on escapement trend.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lower Columbia Fall Chinook - Cont.

EAST FORK LEWIS --

Escapement -- 157 -- 2,354 (1967-1991).

Description -- October to January spawning period. East Fork Lewis River fall chinook spawn in the area from Lewisville Park downstream to Daybreak Park, a distance of approximately 4.2 miles. Fall chinook are reportedly native to the East Fork Lewis River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- The East Fork Lewis fall chinook stock status is **Healthy** based on escapement trend.

WASHOUGAL --

Escapement 70 -- 4,578 (1967-1991).

Description -- October to November spawning period. Washougal River fall chinook spawn in the area from Salmon Falls downstream to the Wildlife Access, a distance of approximately 4.0 miles. Fall chinook are reportedly native to the Washougal River subbasin.

Origin and Production Type -- A **mixed** stock of **composite** production.

Status -- The Washougal River fall chinook stock status is **Healthy** based on escapement trend.

CHUM -

GRAYS RIVER --

Escapement -- 9 -- 269 fish/mile (1967-1991).

Description -- November to December spawning period. Grays River chum spawn in the mainstem Grays River from approximately one-half mile upstream of the West Fork downstream to the Covered Bridge, a distance of approximately four miles. Tributary spawning occurs in the West Fork (RM 13), Crazy Johnson (RM 13.3), and Gorley Creek (RM 12). Chum are indigenous to the Grays River basin.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement.

HARDY CREEK --

Escapement -- 1 -- 436 fish/mile (1967-1991) .

Description -- Late November to early January spawning period. Chum spawn in the lower 1.5 miles of the stream. Chum are indigenous to the Hardy Creek basin.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- The Hardy Creek chum stock status is **Healthy** based on escapement trend.

HAMILTON CREEK --

Escapement -- 3 -- 389 fish/mile (1967-1991) .

Description -- Late November to mid-January spawning period. Chum spawn in Hamilton Creek from the Highway 14 bridge downstream about 1 mile in the mainstem Hamilton Creek and in a small spring-fed tributary known as Spring Channel. Chum are indigenous to the Hamilton Creek basin.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on a **short-term severe decline** and a **long-term negative trend** in escapement.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lower Columbia Fall Chinook - Cont.

COHO -

GRAYS RIVER --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem Grays River and all accessible tributaries of the Grays River. Coho are native to the Grays River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

SKAMOKAWA CREEK --

Escapement -- No data available.

Description -- September to February spawning period. Spawning occurs the mainstem Skamokawa Creek and all accessible tributaries of Skamokawa Creek. Coho are native to Skamokawa Creek. Straying and releases of juvenile coho have created a widely-mixed stock in Skamokawa Creek.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

ELOCHOMAN RIVER --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem Elochoman River and all accessible tributaries of the Elochoman River. Coho are native to the Elochoman River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

MILL CREEK --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem Mill Creek and all accessible tributaries of Mill Creek. A native population of coho existed prior to the completion of any lower Columbia River hatcheries. Coho are native to Mill Creek. Straying and releases of juvenile coho have created a widely-mixed stock in Mill Creek.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

ABERNATHY CREEK --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem Abernathy Creek and all accessible tributaries of Abernathy Creek. Coho are native to Abernathy Creek. Straying and releases of juvenile coho have created a widely-mixed stock in Abernathy Creek.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

GERMANY CREEK --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem Germany Creek and all accessible tributaries of Germany Creek. Coho are native to Germany Creek. Straying and releases of juvenile coho have created a widely-mixed stock in Germany Creek.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lower Columbia Coho - Cont.

COWLITZ RIVER -- (including East, Middle, and North Forks Olequa Creek)

Escapement -- 0 - 29 fish/mile (1967-1990).

Description -- Late October to January spawning period. Spawning in the Cowlitz River subbasin occurs most areas accessible to coho, especially in Olequa Creek which enters the Cowlitz River at RM 25. Coho are native to the Cowlitz River subbasin.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on a **long-term decline** in escapement.

COWEEMAN RIVER --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem Coweeman River and all accessible tributaries of the Coweeman River. Coho are native to the Coweeman River. Straying and releases of juvenile coho has created a widely-mixed stock in the Coweeman River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

TOUTLE RIVER --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem Toutle River and all accessible tributaries of the Toutle River. Coho are native to the Toutle River. Straying and releases of juvenile coho have created a widely-mixed stock in the Toutle River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

SOUTH FORK TOUTLE RIVER --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem of the South Fork Toutle River and all accessible tributaries of the South Fork Toutle River. Coho are native to the South Fork Toutle River. Straying and releases of juvenile coho have created a widely-mixed stock in the South Fork Toutle River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

GREEN (TOUTLE) --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem Green River and all accessible tributaries of the Green River. Coho are native to the Green River. Straying and releases of juvenile coho have created a widely-mixed stock in the Green River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

KALAMA --

Escapement -- No data available.

Description -- Mid-October to February spawning period. Spawning occurs in the mainstem of the Kalama River and all accessible tributaries of the Kalama River. Coho are native to the Kalama River. Straying and releases of juvenile coho have created a widely-mixed stock in the Kalama River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lower Columbia Coho - Cont.

LEWIS -- (including North Fork Chelatchie Creek)

Escapement -- 5 -- 584 fish/mile (1967-1990) .

Description -- October to February spawning period. The majority of this stock spawns in the mainstem Lewis River from Merwin Dam downstream and in all accessible tributaries. Coho are native to the Lewis River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on a **long-term decline** in escapement.

EAST FORK LEWIS --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem of the East Fork Lewis River and all accessible tributaries of the East Fork. Coho are native to the East Fork Lewis River. Straying and releases of juvenile coho have created a widely-mixed stock in the East Fork Lewis River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

SALMON CREEK --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem of Salmon Creek and all accessible tributaries of Salmon Creek. Coho are native to Salmon Creek. Straying and releases of juvenile coho have created a widely-mixed stock in Salmon Creek.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

WASHOUGAL RIVER --

Escapement -- No data available.

Description -- October to February spawning period. Spawning occurs in the mainstem of the Washougal River and all accessible tributaries of the Washougal River. Coho are native to the Washougal River. Straying and releases of juvenile coho have created a widely-mixed stock in the Washougal River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

BONNEVILLE TRIBUTARIES -- (including Duncan, Hardy, Hamilton, and Greenleaf creeks)

Escapement -- 1 -- 87 fish/mile (1967-1991).

Description -- Mid-November to mid-January spawning period. Spawning occurs in the following tributaries: Duncan Creek (RM140), Hardy Creek (RM 141), Hamilton Creek (RM 142), and Greenleaf Creek which enters Hamilton Creek at mile 1.4. Coho are native to Duncan, Hardy, Hamilton, and Greenleaf creeks.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on a **long-term decline** in escapement.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lower Columbia Coho - Cont.

STEELHEAD - Summer

KALAMA --

Escapement -- 188 -- 764 adults counted at trap (1976-1990). Escapement goal = 1,000.

Description -- Mid-January to late April spawning period. A distinct stock based on the geographical isolation of the spawning population in the Kalama River and tributaries. Wild summer steelhead in the Kalama are produced by commingled native and non-native parents and/or by mating between native and non-native fish (hybridization).

Origin and Production Type -- A **mixed** stock sustained by **wild** production.

Status -- **Depressed** based on **chronically low** counts of wild adult steelhead.

EAST FORK LEWIS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock. Escapement goal = 814.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the East Fork Lewis River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown.**

NORTH FORK LEWIS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the North Fork Lewis River, Cedar Creek and tributaries. Construction of Merwin Dam in 1929 blocked anadromous fish passage to most (80%) of the available spawning and rearing habitat.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Depressed** based on **chronically low** production resulting from the loss of access to the majority of the available habitat in the drainage.

MAINSTEM WASHOUGAL --

Escapement -- Unknown. Some spawner surveys and snorkel surveys are done. Escapement goal = 1,210.

Description -- Early March to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the mainstem Washougal River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**

WEST (NORTH) FORK WASHOUGAL --

Escapement -- Unknown. Some spawner surveys and snorkel surveys are done.

Description -- Early March to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the West (North) Fork Washougal River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lower Columbia Summer Steelhead - Cont.

STEELHEAD - Winter

GRAYS RIVER --

Escapement -- 716 -- 1,224 (1991-1992). WDFW escapement goal = 1,486.
Description -- Early March to late May spawning period. A distinct stock based on the geographical isolation of the spawning population in Grays River, its forks, and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Depressed** based on **chronically low** spawner escapement.

SKAMOKAWA CREEK --

Escapement -- 304 (1992). Escapement goal = 227
Description -- Early March to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in Skamokawa Creek and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Unknown**.

ELOCHOMAN --

Escapement -- 166 -- 278 (1991-1992). Escapement goal = 626.
Description -- Early March to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the Elochoman River and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Depressed** based on **chronically low** wild spawner escapement.

MILL CREEK --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.
Description -- A distinct stock based on the geographical isolation of the spawning population in Mill Creek. Early March to early June spawning period.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Depressed** based on **chronically low** wild spawner escapement observed in nearby Abernathy Creek.

ABERNATHY CREEK --

Escapement -- 246 -- 280 (1991-1992). Escapement goal = 306.
Description -- Early March to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in Abernathy Creek.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Depressed** based on **chronically low** wild spawner escapement.

GERMANY CREEK --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.
Description -- Early March to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in Germany Creek.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Depressed** based on **chronically low** wild spawner escapement observed in nearby Abernathy Creek.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lower Columbia Winter Steelhead - Cont.

COWLITZ --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Early March to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the mainstem Cowlitz River, Ostrander Creek, Salmon Creek, and tributaries. This stock has lost access to most (80%) of the available spawning and rearing habitat due to the construction of hydroelectric dams. Restoration of the steelhead population upstream of Cowlitz River Falls Dam should provide an estimated additional 6,000 to 7,000 adult steelhead.

Origin and Production Type -- A **mixed** stock sustained by **wild** production.

Status -- **Depressed** based on the **chronically low** production resulting from the loss of access to the majority of the available habitat in the drainage.

COWEEMAN --

Escapement -- 392 -- 1,088 (1987-1990). Escapement goal = 1,064.

Description -- Early March to early June spawning period. A distinct stock based on the geographical isolation of the spawning population in the Coweeman River and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Depressed** based on **chronically low** spawner escapement..

MAINSTEM/NORTH FORK TOUTLE --

Escapement -- 18 -- 322 in index area (1989-1992).

Description -- Early March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the mainstem Toutle River, Green River, and North Fork Toutle River, and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Depressed** based on **chronically low** production as a result of habitat degradation caused by the eruption of Mt. St. Helens in 1980.

GREEN (TOUTLE) --

Escapement -- 44 -- 775 (1985-1992).

Description -- Early March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Green River (a Toutle River tributary) and tributaries. This stock has been impacted by the degradation of habitat caused by the eruption of Mount St. Helens in 1980. No hatchery winter steelhead have been stocked into the Green River except for small fry plants after the eruption.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Depressed** based on a **short-term severe decline** in wild spawner escapement.

SOUTH FORK TOUTLE --

Escapement -- 752 -- 2,222 (1984-1992). Escapement goal = 1,058.

Description -- A distinct stock based on the geographical isolation of the spawning population in the South Fork Toutle River and tributaries. No hatchery winter steelhead have been stocked into the South Fork Toutle except for a few small fry plants after the 1980 eruption of Mt. St. Helens. Early March through May spawning period.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Healthy** based on wild spawner escapement.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lower Columbia Winter Steelhead - Cont.

KALAMA --

Escapement -- 451 -- 2,492 (1977-1992). Escapement goal = 1,000.
Description -- January through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Kalama River and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Healthy** based on wild spawner escapement.

MAINSTEM/NORTH FORK LEWIS --

Escapement -- Unknown. Spawner escapement is not monitored for this stock. Escapement goal = 698.
Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the mainstem Lewis River and North Fork Lewis River and their tributaries, especially Cedar Creek. Construction of Merwin Dam in 1929 blocked anadromous fish passage to 80% of the usable spawning and rearing habitat.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Depressed** based on the **chronically low** production resulting from the loss of access to the majority of the available habitat in the drainage.

EAST FORK LEWIS --

Escapement -- 72 -- 282 in index area (1986-1992). Escapement goal in index = 204
Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the East Fork Lewis River and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Depressed** based on a **short-term severe decline** in wild spawner escapement in index area.

SALMON CREEK --

Escapement -- 80 (1989). Escapement goal = 400.
Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in Salmon Creek and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Depressed** based on **chronically low** wild spawner escapement.

MAINSTEM WASHOUGAL --

Escapement -- Unknown. Low spawner densities observed during limited, periodic surveys. Escapement goal = 841.
Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the mainstem Washougal River and tributaries.
Origin and Production Type -- A **native** stock sustained by **wild** production.
Status -- **Unknown**

WEST (NORTH) FORK WASHOUGAL --

Escapement -- Unknown. Low spawner densities observed during limited, periodic surveys.
Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the West (North) Fork Washougal River and tributaries. **Origin and Production Type** -- A **native** stock sustained by **wild** production.
Status -- **Unknown**

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Lower Columbia Winter Steelhead - Cont.

HAMILTON CREEK --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in Hamilton Creek and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

UPPER COLUMBIA

CHINOOK - Spring

WIND --

Escapement -- 80 -- 2,352 (1970-1991).

Description -- Early-August to mid-September spawning period. The principal spawning area in the Wind River is from the mouth of Paradise Creek at RM 25 downstream approximately ten miles. Spring chinook were introduced in the Wind River in 1938.

Origin and Production Type -- A **non-native** stock with **composite** production.

Status -- **Depressed** based on **chronically low** escapement.

KLICKITAT --

Escapement -- 63 -- 1,153 (1977-1991).

Description -- August to September spawning period. The naturally-produced run spawns from Parott's Bridge (RM 49.0) upstream to about McCormick Meadows (RM 80.0). The primary spawning area is from Soda Ford (RM 60.7) upstream to Castile Falls, a distance of approximately four miles. Spring chinook are native to the Klickitat River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** escapement.

TUCANNON --

Escapement -- 109 -- 269 (1986-1991).

Description -- Mid-August to Late September spawning period. Spawning mostly occurs from about RM 32 to RM 59. Spring chinook are indigenous to the Tucannon River and are almost exclusively maintained by natural production. The native run is supplemented with a local wild broodstock hatchery program at Tucannon and Lyons Ferry hatcheries as part of Lower Snake River Compensation Plan.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement.

ASOTIN CREEK --

Escapement -- 0 -- 20 (1986-1991).

Description -- Mid-August to Late September spawning period. Spawning is known to occur in the North Fork. Spring chinook are indigenous to Asotin Creek and are almost exclusively maintained by natural production.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Critical** based on **chronically low** escapement.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Upper Columbia Spring Chinook - Cont.

UPPER YAKIMA --

Escapement -- 2 -- 35 redds/mile (1967-1991).

Description -- August to October spawning period. The majority of the spawning occurs in the upper Yakima River from Ellensburg-midway (RM 152.2) to Easton Dam (RM 202.5). Spring chinook are indigenous to the Yakima River and are almost exclusively maintained by natural production, though non-local stock hatchery releases have occurred.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement.

NACHES --

Escapement -- 1 -- 19 redds/mile(1967-1991).

Description -- Early August through October spawning period. Primary spawning areas include the Naches River, the Little Naches, and Rattlesnake Creek. Spring chinook are indigenous to the Naches River and are almost exclusively maintained by natural production.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement.

AMERICAN --

Escapement -- 0 -- 33 redds/mile (1967-1991).

Description -- Early-August to October spawning period. Spawning occurs from about Hells Crossing (RM 5.8) to Union Creek (RM 11.5). Spring chinook are indigenous to the American River and are almost exclusively maintained by natural production.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement.

CHIWAWA --

Escapement -- 118 -- 992 (1977-1991).

Description -- Early August to Mid-September spawning period. Spawning occurs in the lower 27 miles of the stream. Spring chinook are native to the Chiwawa River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement.

NASON CREEK --

Escapement -- 112 -- 722 (1977-1991).

Description -- Mid-August to Mid-September spawning period. Spawning occurs in the lower 16 miles of the stream. Spring chinook are indigenous to Nason Creek and are almost exclusively maintained by natural production.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement.

LITTLE WENATCHEE --

Escapement -- 0 -- 251 (1977-1991).

Description -- Early August to Mid-September spawning period. Most of the spawning occurs in a five-mile reach from RM 2.5 to RM 7.5. Spring chinook are native to the Little Wenatchee River.

Origin and Production Type -- A **native** stock of **wild** production.

Status -- **Depressed** based on a **short-term severe decline** in escapement.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Upper Columbia Spring Chinook - Cont.

WHITE (WENATCHEE) --

Escapement -- 24 -- 369 (1977-1991).

Description -- Early August to mid-September spawning period. Spawning occurs from White River Falls downstream about seven miles. Spring chinook are native to the White River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on a **short-term severe decline** in escapement.

ENTIAT --

Escapement -- 99 -- 357 (1984-1991).

Description -- Early August to mid-September spawning period. The natural spawning reach begins at RM 15.2, about nine miles upstream of the Entiat National Fish Hatchery and continues upstream to just below Fox Creek Campground at RM 28.0. Spring chinook are native to the Entiat River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement.

METHOW --

Escapement -- 37 -- 248 (1977-1991).

Description -- Mid-August to mid-September spawning period. Spawning occurs from Carlton (RM 27.4) upstream to the Lost River confluence (RM 73.0). Spring chinook are native to the Methow River.

Origin and Production Type -- A **native** stock with **composite** production.

Status -- **Depressed** based on a **long-term negative trend** in escapement.

TWISP --

Escapement -- 53 -- 822 (1977-1991).

Description -- Mid-August to mid-September spawning period. The main spawning area is from Little Bridge Creek (RM 9.0) upstream to South Creek (RM 24.4). Spring chinook are native to the Twisp River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on a **short-term severe decline** in escapement.

CHEWUCH (CHEWACK) --

Escapement -- 22 -- 453 (1977-1991).

Description -- Mid-August to mid-September spawning period. Spawning occurs intermittently throughout the lower 30 miles. Spring chinook are native to the Chewack River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on a **short-term severe decline** in escapement.

LOST RIVER --

Escapement --16 -- 186 (1972-1991).

Description -- Mid-August to mid-September spawning period. Spawning occurs in the lower four miles. Spring chinook are native to the Lost River.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Upper Columbia Summer Chinook - Cont.

CHINOOK - Summer

WENATCHEE --

Escapement -- 3,937 -- 12,764 (1977-1991).

Description -- Late September through October spawning period. The naturally-spawning population of Wenatchee River summer chinook spawns in the area from RM 3.5 to RM 46.2. This stock is considered to be the result of the Rock Island Dam relocation program which began in 1939-1941.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- The Wenatchee River summer chinook natural stock status is **Healthy** based on escapement.

METHOW --

Escapement -- 288 -- 2,775 (1977-1991).

Description -- Late September to early November spawning period. Primary spawning of summer chinook in the mainstem Methow River occurs from RM 2.0 to RM 50.4. This stock is the result of the Rock Island Dam relocation program which began in 1939-1941. Some of the spawning population may be from production at Wells Dam Salmon Hatchery on the mainstem Columbia River.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- **Depressed** based on a **short-term severe decline** and a **long-term negative trend** in escapement.

OKANOGAN --

Escapement -- 363 -- 2,300 (1977-1991).

Description -- Late September to early November spawning period. Spawning in the mainstem Okanogan occurs from Lake Osoyoos (RM 77) downstream to the town of Okanogan (RM 26). Summer chinook in the Similkameen River spawn in the two mile area downstream of Enloe Dam. Summer chinook are endemic to the Okanogan and Similkameen basins.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on a **short-term severe decline** in escapement.

CHINOOK - Fall

WIND - TULE --

Escapement -- 11 -- 1,845 (1967-1991).

Description -- September to October spawning period. Wind River tule fall chinook spawn in the area from Shipherd Falls at RM 2 downstream to the mouth. Tule fall chinook are native to the Wind River, though the run may have been confined below Shipherd Falls until the falls were laddered in 1956 to permit salmon access to the upper areas.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on a **long-term negative trend** and a **short-term severe decline** in escapement.

WIND - BRIGHTS --

Escapement -- 487 -- 1,845 (1988-1991).

Description -- October to November spawning period. Wind River upriver bright fall chinook spawn in the area from Shipherd Falls at RM 2 downstream to the mouth. Upriver bright fall chinook are not native to the subbasin and have not been planted in the Wind River subbasin.

Origin and Production Type -- Stock of **unknown** origin and **composite** production.

Status -- The Wind River upriver bright fall chinook stock status is **Healthy.**

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Upper Columbia Fall Chinook - Cont.

WHITE SALMON RIVER - TULE --

Escapement -- 75 -- 2,787 (1967-1991).

Description -- September to October spawning period. White Salmon River tule fall chinook spawn in the area from Condit Dam RM 3 to the mouth. Tule fall chinook are native to the White Salmon River, though the run may have been confined below the falls at RM 16.3. Condit Dam was built in 1912 at RM 3 and blocked upstream migration of anadromous fish.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on a **long-term negative trend** and a **short-term severe decline** in escapement trend.

WHITE SALMON RIVER - BRIGHTS --

Escapement -- 966 -- 2,997(1988-1991).

Description -- October to November spawning period. White Salmon River upriver bright fall chinook spawn in the area from Condit Dam (RM 3) to the mouth. Upriver bright fall chinook are not native to the White Salmon River and have not been planted in the White Salmon River subbasin.

Origin and Production Type -- A **mixed** stock of **composite** production.

Status -- The White Salmon River upriver bright fall chinook natural stock status is **Healthy** based on escapement trend.

KLICKITAT - TULE --

Escapement -- 54 -- 14,230 (1967-1991 without 1988).

Description -- September to October spawning period. Klickitat River tule fall chinook spawn in the area from the Klickitat River Salmon Hatchery downstream to the Twin Bridges, a distance of approximately 25.9 miles. Prior to the first hatchery plants of fall chinook in 1946, fall chinook were not found in the Klickitat River subbasin.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- The Klickitat River tule natural stock status is **Healthy** based on escapement trend.

KLICKITAT - BRIGHTS --

Escapement -- 253 -- 2,975 (1989-1991).

Description -- October to November spawning period. Klickitat River upriver bright fall chinook spawn in the area from the Klickitat River Salmon Hatchery downstream to the Twin Bridges, a distance of approximately 25.9 miles. Prior to the first hatchery plants of fall chinook in 1946, fall chinook were not found in the Klickitat River subbasin.

Origin and Production Type -- A **non-native** stock with **cultured** production.

Status -- The Klickitat River upriver bright stock status is **healthy** based on escapement trend.

SNAKE --

Escapement -- 340 -- 1,000 (1975-1991).

Description -- October to November spawning period. Most of the natural spawning occurs immediately below Hells Canyon (Oregon-Idaho). The remainder of the spawning occurs in the lower reaches of some Washington tributaries: Tucannon, Palouse, Grande Ronde rivers, and in the mainstem Snake river primarily upstream of Asotin, Washington. Snake River fall chinook should be considered a native stock that may have been influenced by stays from other basins.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- **Depressed** based on **chronically low** escapement.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Upper Columbia Fall Chinook - Cont.

YAKIMA - BRIGHTS --

Escapement -- 757 -- 4,400 (1983-1991).

Description -- October to November spawning period. One segment spawns in the lower 32 miles of the mainstem; the other utilizes the 17-mile long Marion Drain. Spawn timing and the coloration of spawners suggest that Yakima River fall chinook are an upriver bright substock. Fall chinook are native to the Yakima River subbasin.

Origin and Production Type -- An **unknown** stock with **composite** production.

Status -- The Yakima River stock status is **Healthy** based on escapement trend.

MARION DRAIN --

Escapement -- 12 -- 117 redds (1983-1992).

Description -- Mid-October to November spawning period. Spawning occurs in the 17 miles of the Marion Drain. Spawning timing and the coloration of spawners suggest that Marion Drain fall chinook are an upriver bright stock. Fall chinook are native to the Drain.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- The Marion Drain River stock status is **Healthy** based on escapement trend.

HANFORD REACH --

Escapement -- 50,773 -- 164,254 (1983-1991).

Description -- Late October to early December spawning period. Hanford Reach fall chinook spawn in the area from Priest Rapids Dam to the Tri-Cities, a distance of approximately 45 miles. The Hanford Reach is one of the most important and largest natural production areas for chinook in the entire Columbia Basin.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- The Hanford Reach stock status is **Healthy** but is on a downward natural trend based on escapement.

LAKE CHELAN --

Escapement -- Unknown

Description -- Late September to early November spawning period. Lake Chelan naturally-spawning fall chinook spawn in the Stehekin River basin with a few spawning chinook observed in Company Creek, a tributary of the Stehekin River. A naturally-sustaining population has developed from a mixture of hatchery stocks introduced from 1974-1978.

Origin and Production Type -- A **non-native** stock with **wild** production.

Status -- The Lake Chelan fall chinook stock status is **Healthy** based on production.

COHO -

KLICKITAT --

Escapement -- Unknown

Description -- October to February spawning period. Spawning occurs in the lower two miles of the mainstem Klickitat River and Dofner Creek. Passage above Lyle Falls at RM 2.2 is very limited. Coho are native to the Klickitat River. Straying and releases of juvenile coho since then have created a widely mixed stock in the Klickitat River.

Origin and Production Type -- A **mixed** stock with **composite** production.

Status -- **Depressed** based on **chronically low** production.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Upper Columbia - Cont.

SOCKEYE -

WENATCHEE --

Escapement -- 6,500 -- 64,700 (1977-1991).

Description -- Mid-September to mid-October spawning period. Principle spawning areas for Wenatchee River sockeye are in the lower 3.5 mile reach of the Little Wenatchee River and from RM 6.4 to RM 11.0 of the White River at the upper end of Lake Wenatchee (RM 58.6). Some incidental spawning occurs in the lower 0.5 miles of Napeequa River (White River tributary). Sockeye are historically indigenous to the Wenatchee basin but were drastically depleted by irrigation diversions and overfishing in the early 1900s.

Origin and Production Type -- A **mixed** stock with **wild** production.

Status -- The Wenatchee River sockeye natural stock status is **Healthy** based on escapement.

OKANOGAN --

Escapement -- 8,700 -- 73,300 (1977-1991).

Description -- October spawning period. Sockeye spawn in the mainstem Okanogan from the head of Lake Osoyoos (RM 90) upstream to the outlet of Vaseaux Lake (RM 106). Sockeye are indigenous to the Okanogan River system and were probably not significantly influenced by releases in the 1940s.

Origin and Production Type -- A **native** stock with **wild** production.

Status -- The Okanogan River sockeye natural stock status is **healthy** based on escapement.

STEELHEAD - Summer

MAINSTEM WIND --

Escapement -- 98 -- 464 (1985-1992). Escapement goal = 957.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the mainstem Wind River and tributaries (except Panther Creek and Trout Creek). Production affected by juvenile and adult mortality associated with passage at Bonneville Dam.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Depressed** based on **chronically low** wild spawner escapement.

PANTHER CREEK (WIND) --

Escapement -- 26 -- 114 (1985-1992). Escapement goal = 242.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in Panther Creek, a Wind River tributary. Production affected by juvenile and adult mortality associated with passage at Bonneville Dam.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Depressed** based on **chronically low** wild spawner escapement.

TROUT CREEK (WIND) --

Escapement -- 51 -- 330 (1985-1992). Escapement goal = 358.

Description -- Early March to late May spawning period. A distinct stock based on the geographical isolation of the spawning population in Trout Creek, a Wind River tributary. Production affected by juvenile and adult mortality associated with passage at Bonneville Dam.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Depressed** based on **chronically low** wild spawner escapement.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Upper Columbia Summer Steelhead - Cont.

WHITE SALMON RIVER --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Early March to late May spawning period. The wild summer steelhead was originally native, but it is uncertain whether a stock exists that has not hybridized with hatchery steelhead planted or strayed into the river. Construction of Condit Dam in 1913 blocked anadromous fish passage to most (70%) of the available spawning and rearing habitat leaving only 3.3 miles of river downstream of the dam accessible to anadromous fish. Production affected by juvenile and adult mortality associated with passage at Bonneville Dam.

Origin and Production Type -- **Unknown-**origin (a native stock originally returned, but there is uncertainty about the amount of contribution by hatchery summer steelhead spawning in the wild)stock sustained by **wild** production.

Status -- **Depressed** based on the **chronically low** production resulting from the loss of access to the majority of the available habitat in the drainage.

KLICKITAT --

Escapement -- Unknown. Spawner escapement is not monitored for this stock. Escapement goal = 2,965.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Klickitat River, Swale Creek, Little Klickitat River, White Creek, Trout Creek and tributaries. Production affected by juvenile and adult mortality associated with passage at Bonneville Dam.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**

ROCK CREEK --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in Rock Creek, Squaw Creek, Quartz Creek, and tributaries. Rock Creek enters the John Day Pool about eleven miles upstream of John Day Dam. Wild fish summer in the mainstem Columbia and have to wait for fall/winter rains to enter the creek to spawn. Production affected by juvenile and adult mortality associated with passage at Bonneville Dam and John Day Dam.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**

WALLA WALLA --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- Early March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Walla Walla River, Mill Creek, Dry Creek, and tributaries. Hybridization with hatchery fish from Lower Snake River Compensation Plan smolt releases has probably occurred since 1984, however, the degree of hybridization is unknown. Population levels below potential because of long-term habitat degradation and juvenile and adult mortality associated with passage at four Columbia River hydroelectric dams.

Origin and Production Type -- A **mixed** stock sustained by **composite** production.

Status -- **Depressed** based on **chronically low** production.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Upper Columbia Summer Steelhead - Cont.

TOUCHET --

Escapement -- 44 -- 221(1988-1992).

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Touchet River, its forks, Coppoi Creek, Robinson Creek, Wolf Creek, and tributaries. Hybridization with hatchery fish from Lower Snake River Compensation Plan smolt releases has probably occurred since 1984, however, the degree of hybridization is unknown. Predominantly Wells and Lyons Ferry stocks have been used in these releases. Population levels are below potential because of habitat degradation and juvenile and adult mortality associated with passage at four lower Snake River and four Columbia River hydroelectric dams.

Origin and Production Type -- A **mixed** stock sustained by **composite** production.

Status -- **Depressed** based on **chronically low** spawner escapement.

TUCANNON --

Escapement -- 37 -- 315 in index areas(1986-1992). Escapement goal = 600.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Tucannon River, Pataha Creek, and tributaries. Hybridization with releases of various hatchery reared stocks of Snake River steelhead from Lyons Ferry Hatchery and Tucannon Hatchery is likely to have occurred at various levels since 1979. Population levels are below potential because of habitat degradation and juvenile and adult mortality associated with passage at four lower Snake River and four Columbia River hydroelectric dams.

Origin and Production Type -- A **mixed** stock sustained by **composite** production.

Status -- **Depressed** based on **chronically low** spawner escapement in index areas.

ASOTIN CREEK --

Escapement -- 43 -- 80 in index areas(1989-1992). Escapement goal = 160.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in Asotin Creek, Charley Creek, and tributaries. Hybridization is likely to have occurred between 1984 and 1988 when returning adults from hatchery planted smolts were observed spawning in large numbers. Hatchery origin steelhead of Wells and Wallowa stocks have been released into the system from 1983 through 1986. Population levels are below potential because of habitat degradation and juvenile and adult mortality associated with passage at four lower Snake River and four Columbia River hydroelectric dams.

Origin and Production Type -- A **mixed** stock sustained by **composite** production.

Status -- **Depressed** based on **chronically low** spawner escapement in index areas.

GRANDE RONDE --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Grande Ronde River and tributaries. Hybridization with Wallowa stock summer steelhead used in Lower Snake River Compensation Plan production is likely to have occurred since 1983. Population levels are below potential because of habitat degradation and juvenile and adult mortality associated with passage at four lower Snake River and four Columbia River hydroelectric dams.

Origin and Production Type -- A **mixed** stock sustained by **composite** production.

Status -- **Depressed** based on **chronically low** production.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Upper Columbia Summer Steelhead - Cont.

YAKIMA --

Escapement -- 64 -- 2,198 (1980-1991). Escapement goal = 2,000.

Description -- Mid-February to late May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Yakima River and tributaries. Five distinct steelhead populations have been identified: Satus Creek, Toppenish Creek, Naches River, the mainstem Yakima River between Wapato and Roza Dams, and mainstem Yakima River upstream of Roza Dam. Population levels are below potential because of irrigation diversions, drought conditions, habitat degradation and juvenile and adult mortality associated with passage at four Columbia River hydroelectric dams.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Depressed** based on **chronically low** wild spawner escapement.

WENATCHEE --

Escapement -- 30 -- 2,291(1969-1991). Escapement goal = 3,000.

Description -- Late March to early July spawning period. A distinct stock based on the geographical isolation of the spawning population in the Wenatchee River, Mission Creek, Peshastin Creek, Icicle Creek, Nason Creek, Little Wenatchee River, White River, Chiwawa River, and tributaries. Interbreeding of wild stocks has occurred with Priest Rapids and Wells hatchery stocks. Wenatchee River wild summer steelhead were mixed with other upper Columbia River stocks. Population levels are below potential because of juvenile and adult mortality associated with passage at seven mainstem Columbia River hydroelectric dams.

Origin and Production Type -- A **mixed** stock sustained by **composite** production.

Status -- **Depressed** based on **chronically low** wild spawner escapement.

ENTIAT --

Escapement -- Unknown. Escapement goal = 500.

Description -- Late March to early July spawning period. A distinct stock based on the geographical isolation of the spawning population in the Entiat River, Mad River, and tributaries. Interbreeding of wild stocks has occurred with Priest Rapids and Wells hatchery stocks. Entiat River wild summer steelhead were mixed with other upper Columbia River stocks. Population levels are below potential because of juvenile and adult mortality associated with passage at eight mainstem Columbia River hydroelectric dams.

Origin and Production Type -- A **mixed** stock sustained by **composite** production.

Status -- **Depressed** based on **chronically low** wild spawner escapement.

METHOW/OKANOGAN --

Escapement -- 114 -- 837 (1982-1991). Escapement goal = 2,300.

Description -- Early March to mid-July spawning period. A distinct stock based on the geographical isolation of the spawning population in the Methow River, Gold Creek, Twisp River, Chewack River, Wolf Creek, Early Winters Creek, Lost River, Okanogan River, and tributaries. Interbreeding of wild stocks has occurred with Priest Rapids and Wells hatchery stocks. Methow/Okanogan River wild summer steelhead were mixed with other upper Columbia River stocks. Population levels are below potential because of juvenile and adult mortality associated with passage at nine mainstem Columbia River hydroelectric dams.

Origin and Production Type -- A **mixed** stock sustained by **composite** production.

Status -- **Depressed** based on **chronically low** wild spawner escapement.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)
Upper Columbia - Cont.

STEELHEAD - Winter

WIND --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Wind River, Trout Creek, and tributaries. Production affected by habitat loss and juvenile and adult mortality associated with passage at Bonneville Dam.

Origin and Production Type -- A native stock sustained by **wild** production.

Status -- **Unknown**, comprised of a historically small number of steelhead.

WHITE SALMON RIVER --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- The wild winter steelhead was originally native in the White Salmon River but it is uncertain whether a stock exists that has not hybridized with hatchery steelhead planted or strayed into the river. Construction of Condit Dam in 1913 blocked anadromous fish passage to most (70%) of the available spawning and rearing habitat leaving only 3.3 miles of river downstream of the dam accessible to anadromous fish. March through May spawning period.

Origin and Production Type -- **Unknown-**origin (a native stock originally returned, but there is uncertainty about the amount of contribution by hatchery winter steelhead spawning in the wild)stock sustained by **wild** production.

Status -- **Depressed** based on **chronically low** production resulting from the loss of access to the majority of the available habitat in the drainage.

KLICKITAT --

Escapement -- Unknown. Spawner escapement is not monitored for this stock, nor has an escapement goal been identified.

Description -- March through May spawning period. A distinct stock based on the geographical isolation of the spawning population in the Klickitat River, Swale Creek, Little Klickitat River, White Creek, Trout Creek, and tributaries.

Origin and Production Type -- A **native** stock sustained by **wild** production.

Status -- **Unknown**.

TABLE 14. COLUMBIA RIVER SALMON AND STEELHEAD ANNOTATED STOCK LIST (continued)

SPECIES STOCK LISTS

The Species Stock Lists contain information on stock origin, production type, and stock status (the same information as in Tables 9, 10, and 11). The individual species are presented separately as follows:

TABLE 15.

CHINOOK SALMON STOCKS IN WASHINGTON

PUGET SOUND			
NOOKSACK/SAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
NF Nooksack	Native	Composite	Critical
SF Nooksack	Native	Wild	Critical
Samish/MS Nooksack Fall	Non-Native	Composite	Unknown
SKAGIT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Upper Skagit Mainstem/Tribs Summer	Native	Wild	Healthy
Lower Skagit Mainstem/Tribs Fall	Native	Wild	Depressed
Lower Sauk Summer	Native	Wild	Depressed
Upper Sauk Spring	Native	Wild	Healthy
Suiattle Spring	Native	Wild	Depressed
Upper Cascade Spring	Native	Wild	Unknown
STILLAGUAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Stillaguamish Summer	Native	Composite	Depressed
Stillaguamish Fall	Unknown	Wild	Depressed
SNOHOMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Snohomish Summer	Native	Wild	Depressed
Wallace R Summer/Falls	Mixed	Composite	Healthy
Snohomish Fall	Native	Wild	Depressed
Bridal Veil Cr Fall	Native	Wild	Unknown
LAKE WASHINGTON	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER/FALL			
Issaquah	Non-Native	Composite	Healthy
N Lake Washington Tribs	Native	Wild	Unknown
Cedar	Native	Wild	Unknown 1 [1]

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 15. CHINOOK SALMON STOCKS IN WASHINGTON (continued)

DUWAMISH/GREEN	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
SUMMER/FALL			
Duwamish/Green	Mixed	Composite	Healthy
Newaukum Cr	Mixed	Wild	Healthy
PUYALLUP	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
White (Puyallup) Spring	Native	Composite	Critical
White (Puyallup) Summer/Fall	Unknown	Wild	Unknown
Puyallup Summer/Fall	Unknown	Composite	Unknown
NISQUALLY	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER/FALL			
Nisqually	Mixed	Composite	Healthy
SOUTH SOUND	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER/FALL			
S Sound Tribs	Mixed	Composite	Healthy
HOOD CANAL	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER/FALL			
Hood Canal	Mixed	Composite	Healthy
STRAIT OF JUAN DE FUCA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Dungeness Spring/Summer	Native	Wild	Critical
Elwha/Morse Creek Summer/Fall	Native	Composite	Healthy
Hoko Fall	Native	Composite	Depressed

TABLE 15. CHINOOK SALMON STOCKS IN WASHINGTON (continued)

COASTAL			
SOOES/OZETTE	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Sooes	Native	Cultured	Unknown
QUILLAYUTE	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SPRING			
Sol Duc	Non-Native	Composite	Healthy
SUMMER			
Quillayute/Bogachiel	Native	Composite	Unknown
Sol Duc	Native	Wild	Healthy
Calawah	Native	Wild	Unknown
FALL			
Quillayute/Bogachiel	Native	Wild	Healthy
Dickey	Native	Wild	Healthy
Sol Duc	Native	Composite	Healthy
Calawah	Native	Wild	Healthy
HOH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SPRING/SUMMER			
Hoh	Native	Wild	Healthy
FALL			
Hoh	Native	Wild	Healthy
QUEETS	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SPRING/SUMMER			
Queets	Native	Wild	Depressed
Clearwater	Native	Wild	Depressed
FALL			
Queets	Native	Wild	Healthy
Clearwater	Native	Wild	Healthy
RAFT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STATUS**

TABLE 15. CHINOOK SALMON STOCKS IN WASHINGTON (continued)

FALL			
Raft	Native	Wild	Unknown
QUINAULT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SPRING/SUMMER			
Quinault	Native	Wild	Depressed
FALL			
Quinault	Native	Wild	Healthy
Cook Cr	Mixed	Composite	Healthy
MOCLIPS/COPALIS	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Moclips	Native	Wild	Unknown
Copalis	Native	Wild	Unknown
GRAYS HARBOR	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SPRING			
Chehalis	Native	Wild	Healthy
SUMMER			
Satsop	Mixed	Wild	Depressed
FALL			
Humptulips	Mixed	Wild	Healthy
Hoquiam	Native	Wild	Healthy
Wishkah	Native	Composite	Healthy
Wynoochee	Native	Wild	Healthy
Satsop	Mixed	Composite	Healthy
Chehalis	Mixed	Wild	Healthy
Johns/Elk & S Bay Tribs	Mixed	Wild	Unknown
WILLAPA BAY	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Willapa Bay	Mixed	Composite	Healthy
Fall River Early (North R)	Native	Wild	Depressed

TABLE 15. CHINOOK SALMON STOCKS IN WASHINGTON (continued)

COLUMBIA RIVER			
LOWER COLUMBIA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SPRING			
Cowlitz	Mixed	Composite	Healthy
Kalama	Mixed	Composite	Healthy
Lewis	Mixed	Composite	Healthy
FALL			
Grays R	Mixed	Composite	Healthy
Skamokawa Cr	Mixed	Composite	Healthy
Elochoman	Mixed	Composite	Healthy
Mill Cr	Mixed	Composite	Healthy
Abernathy Cr	Mixed	Composite	Healthy
Germany Cr	Mixed	Composite	Healthy
Cowlitz	Mixed	Composite	Healthy
Coweeman	Mixed	Composite	Healthy
SF Toutle	Unknown	Composite	Depressed
Green (Toutle)	Unknown	Composite	Depressed
Kalama	Mixed	Composite	Healthy
Lewis	Native	Wild	Healthy
EF Lewis	Native	Wild	Healthy
Washougal	Mixed	Composite	Healthy
UPPER COLUMBIA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SPRING			
Wind	Non-Native	Composite	Depressed
Klickitat	Mixed	Composite	Depressed
Tucannon	Native	Wild	Depressed
Asotin Cr	Native	Wild	Critical
Upper Yakima	Native	Wild	Depressed
Naches	Native	Wild	Depressed
American	Native	Wild	Depressed

TABLE 15. CHINOOK SALMON STOCKS IN WASHINGTON (continued)

UPPER COLUMBIA - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
SPRING - Cont.			
Chiwawa	Native	Wild	Depressed
Nason Cr	Native	Wild	Depressed
Little Wenatchee	Native	Wild	Depressed
White R (Wenatchee)	Native	Wild	Depressed
Entiat	Native	Wild	Depressed
Methow	Native	Composite	Depressed
Twisp	Native	Wild	Depressed
Chewuch (Chewack)	Native	Wild	Depressed
Lost R	Native	Wild	Depressed
SUMMER			
Wenatchee	Mixed	Wild	Healthy
Methow	Mixed	Wild	Depressed
Okanogan	Native	Wild	Depressed
FALL			
Wind - Tule	Mixed	Composite	Depressed
Wind - Brights	Unknown	Composite	Healthy
White Salmon R - Tule	Mixed	Composite	Depressed
White Salmon R - Brights	Mixed	Composite	Healthy
Klickitat - Tule	Mixed	Composite	Healthy
Klickitat - Brights	Non-Native	Cultured	Healthy
Snake	Native	Wild	Depressed
Yakima - Brights	Unknown	Composite	Healthy
Marion Drain	Native	Wild	Healthy
Hanford Reach	Native	Wild	Healthy
Lk Chelan	Non-Native	Wild	Healthy

TABLE 16.

CHUM SALMON STOCKS IN WASHINGTON

PUGET SOUND			
TRANSBOUNDARY INDEPENDENTS	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Sumas/Chilliwack	Native	Wild	Unknown
NOOKSACK/SAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
NF Nooksack	Native	Wild	Healthy
Mainstem/SF Nooksack	Native	Wild	Unknown
Samish/Independent	Mixed	Composite	Healthy
SKAGIT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Mainstem Skagit	Native	Wild	Healthy
Sauk	Native	Wild	Healthy
Lower Skagit Tribs	Unknown	Wild	Unknown
STILLAGUAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
NF Stillaguamish	Native	Wild	Healthy
SF Stillaguamish	Native	Wild	Healthy
SNOHOMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Skykomish	Native	Wild	Healthy
Snoqualmie	Native	Wild	Unknown
Wallace	Native	Wild	Healthy
DUWAMISH/GREEN	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Duwamish/Green	Mixed	Composite	Unknown
Crisp Cr	Non-Native	Cultured	Healthy

TABLE 16. CHUM SALMON STOCKS IN WASHINGTON (continued)

PUYALLUP	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
FALL			
Puyallup/Carbon	Native	Wild	Unknown
Fennel Cr	Unknown	Wild	Healthy
Hylebos Cr	Unknown	Unknown	Unknown
NISQUALLY	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
WINTER			
Nisqually	Native	Wild	Healthy
SOUTH SOUND	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Chambers Cr	Native	Wild	Extinct
Hammersley Inlet	Native	Composite	Healthy
Case Inlet	Native	Composite	Healthy
Blackjack Cr	Native	Wild	Healthy
FALL			
Henderson Inlet	Mixed	Composite	Unknown
Eld Inlet	Native	Wild	Healthy
Totten Inlet	Native	Wild	Healthy
Skookum Inlet	Mixed	Composite	Healthy
Upper Skookum Cr	Native	Wild	Healthy
Johns/Mill Crs	Mixed	Wild	Healthy
Goldsborough/Shelton Crs	Native	Wild	Healthy
Case Inlet	Native	Wild	Healthy
Carr Inlet	Mixed	Composite	Healthy
Gig Harbor/Ollala	Mixed	Composite	Healthy
Dyes Inlet/Liberty Bay	Native	Composite	Healthy
Sinclair Inlet	Native	Wild	Healthy
WINTER			
Chambers Cr	Native	Wild	Healthy

TABLE 16. CHUM SALMON STOCKS IN WASHINGTON (continued)

HOOD CANAL	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
SUMMER			
Hood Canal	Native	Wild	Critical
Union	Native	Wild	Healthy
FALL			
NE Hood Canal	Mixed	Composite	Healthy
Dewatto	Mixed	Composite	Healthy
SE Hood Canal	Mixed	Composite	Healthy
Lower Skokomish	Mixed	Composite	Unknown
Upper Skokomish Late	Native	Wild	Healthy
W Hood Canal	Mixed	Composite	Healthy
Hamma Hamma Late	Native	Wild	Healthy
Duckabush Late	Native	Wild	Healthy
Dosewallips Late	Native	Wild	Healthy
Quilcene Late	Mixed	Composite	Healthy
STRAIT OF JUAN DE FUCA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Discovery Bay	Native	Wild	Critical
Sequim Bay	Native	Wild	Depressed
FALL			
Dungeness/E Strait Tribs	Native	Wild	Unknown
Elwha	Native	Wild	Unknown
Lyre	Native	Wild	Unknown
Deep/E & W Twin Creeks	Native	Wild	Healthy
Pysht	Native	Wild	Healthy
Hoko/Clallam/Sekiu	Native	Wild	Unknown

TABLE 16. CHUM SALMON STOCKS IN WASHINGTON (continued)

COASTAL			
SOOES/OZETTE	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Sooes	Non-Native	Cultured	Unknown
Ozette	Native	Wild	Unknown
QUILLAYUTE	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Quillayute	Native	Wild	Unknown
HOH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Hoh	Unknown	Unknown	Unknown 1 [1]
QUEETS	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Queets	Unknown	Unknown	Unknown 1
QUINAULT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Quinault	Mixed	Composite	Healthy
GRAYS HARBOR	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Humptulips	Native	Wild	Healthy
Chehalis	Native	Wild	Healthy

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 16. CHUM SALMON STOCKS IN WASHINGTON (continued)

WILLAPA BAY - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
FALL			
North R	Native	Wild	Healthy
Willapa	Native	Wild	Healthy
Palix	Native	Wild	Healthy
Nemah	Native	Wild	Healthy
Naselle	Mixed	Wild	Healthy
Bear	Native	Wild	Healthy

COLUMBIA RIVER			
LOWER COLUMBIA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
FALL			
Grays R	Native	Wild	Depressed
Hardy Cr	Native	Wild	Healthy
Hamilton Cr	Native	Wild	Depressed

TABLE 17.

COHO SALMON STOCKS IN WASHINGTON

PUGET SOUND			
TRANSBOUNDARY INDEPENDENTS	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Sumas/Chilliwack	Native	Wild	Unknown
NOOKSACK/SAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Nooksack	Mixed	Composite	Unknown
Samish	Mixed	Composite	Healthy
N Puget Sound Tribs	Mixed	Wild	Unknown
N. SOUND INDEPENDENTS	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Whidbey Island	Unknown	Wild	Unknown
Orcas Island	Unknown	Wild	Unknown
SKAGIT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Skagit	Native	Composite	Depressed
Baker	Unknown	Composite	Unknown
STILLAGUAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Stillaguamish	Mixed	Wild	Depressed
Deer Cr	Native	Wild	Unknown
SNOHOMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Snohomish	Mixed	Wild	Depressed
Skykomish	Mixed	Composite	Healthy
SF Skykomish	Non-Native	Wild	Healthy
Snoqualmie	Mixed	Wild	Healthy
LAKE WASHINGTON	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Lk Washington/Sammamish Tribs	Mixed	Composite	Depressed
Cedar	Mixed	Wild	Healthy
DUWAMISH/GREEN	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Green R/Soos Cr	Mixed	Composite	Healthy
Newaukum Cr	Mixed	Composite	Depressed

TABLE 17. COHO SALMON STOCKS IN WASHINGTON (continued)

PUYALLUP	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
Puyallup	Mixed	Composite	Depressed
White (Puyallup)	Mixed	Composite	Healthy
NISQUALLY	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Nisqually	Mixed	Composite	Healthy
SOUTH SOUND	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Chambers Cr	Mixed	Composite	Healthy
Deep S Sound Tribs	Mixed	Composite	Healthy
Deschutes	Non-Native	Wild	Healthy
East Kitsap	Mixed	Composite	Healthy
HOOD CANAL	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
NE Hood Canal	Mixed	Wild	Depressed
Dewatto	Mixed	Wild	Depressed
SE Hood Canal	Mixed	Wild	Depressed
Skokomish	Mixed	Composite	Healthy
SW Hood Canal	Mixed	Wild	Healthy
Hamma Hamma	Mixed	Wild	Healthy
Duckabush	Mixed	Wild	Depressed
Dosewallips	Mixed	Wild	Healthy
Quilcene/Dabob Bays	Mixed	Composite	Depressed
STRAIT OF JUAN DE FUCA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Chimacum Creek	Mixed	Composite	Healthy
Discovery Bay	Mixed	Wild	Critical
Sequim Bay	Mixed	Wild	Depressed
Dungeness	Mixed	Composite	Depressed
Morse Creek	Mixed	Wild	Depressed
Elwha	Mixed	Composite	Healthy

TABLE 17. COHO SALMON STOCKS IN WASHINGTON (continued)

STRAIT OF JUAN DE FUCA - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK ORIGIN
Salt Creek	Mixed	Wild	Healthy
Lyre	Mixed	Wild	Unknown
Pysht/Twin/Deep	Mixed	Wild	Depressed
Clallam	Mixed	Wild	Unknown 1 [1]
Hoko	Mixed	Wild	Healthy
Sekiu/Sail	Mixed	Wild	Depressed

COASTAL			
SOOES/OZETTE	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Sooes/Waatch	Mixed	Composite	Unknown
Ozette	Native	Wild	Unknown
QUILLAYUTE	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Sol Duc	Native	Composite	Healthy
FALL			
Dickey	Native	Wild	Healthy
Sol Duc	Native	Composite	Healthy
Bogachiel	Native	Wild	Healthy
Calawah	Native	Wild	Healthy
HOH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Goodman/Mosquito Crs	Native	Wild	Unknown
Hoh	Native	Wild	Healthy
KALALOCH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Kalaloch Cr	Native	Wild	Unknown

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 17. COHO SALMON STOCKS IN WASHINGTON (continued)

QUEETS	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
Queets	Native	Composite	Healthy
Clearwater	Native	Composite	Healthy
Salmon R	Non-Native	Composite	Healthy
RAFT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STATUS**
Raft	Native	Wild	Unknown
QUINAULT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Quinault	Mixed	Composite	Unknown
Cook Cr	Mixed	Composite	Healthy
MOCLIPS/COPALIS	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Moclips	Mixed	Composite	Unknown
Copalis	Mixed	Composite	Unknown
GRAYS HARBOR	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Humptulips	Mixed	Composite	Healthy
Hoquiam	Mixed	Composite	Healthy
Wishkah	Mixed	Composite	Healthy
Wynoochee	Mixed	Composite	Healthy
Satsop	Mixed	Composite	Healthy
Chehalis	Mixed	Composite	Healthy
Johns/Elk & S Bay Tribs	Mixed	Composite	Healthy
WILLAPA BAY	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Willapa Bay	Mixed	Composite	Unknown

TABLE 17. COHO SALMON STOCKS IN WASHINGTON (continued)

COLUMBIA RIVER			
LOWER COLUMBIA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Grays R	Mixed	Composite	Depressed
Skamokawa Cr	Mixed	Composite	Depressed
Elochoman	Mixed	Composite	Depressed
Mill Cr	Mixed	Composite	Depressed
Abernathy Cr.	Mixed	Composite	Depressed
Germany Cr	Mixed	Composite	Depressed
Cowlitz	Mixed	Composite	Depressed
Coweeman	Mixed	Composite	Depressed
Toutle	Mixed	Composite	Depressed
SF Toutle	Mixed	Composite	Depressed
Green (Toutle)	Mixed	Composite	Depressed
Kalama	Mixed	Composite	Depressed
Lewis	Mixed	Composite	Depressed
E Fork Lewis	Mixed	Composite	Depressed
Salmon Creek	Mixed	Composite	Depressed
Washougal	Mixed	Composite	Depressed
Bonneville Tribs	Mixed	Composite	Depressed
UPPER COLUMBIA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Klickitat	Mixed	Composite	Depressed

TABLE 18.

PINK SALMON STOCKS IN WASHINGTON

PUGET SOUND			
NOOKSACK/SAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
NF/Middle Fork Nooksack	Mixed	Wild	Unknown 1 [1]
SF Nooksack	Native	Wild	Unknown
SKAGIT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Skagit	Native	Wild	Healthy
STILLAGUAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
NF Stillaguamish	Native	Wild	Healthy
SF Stillaguamish	Native	Wild	Healthy
SNOHOMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Snohomish Odd-Year	Native	Wild	Healthy
Snohomish Even-Year	Native	Wild	Healthy
PUYALLUP	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Puyallup	Native	Wild	Healthy
NISQUALLY	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Nisqually	Native	Wild	Healthy
HOOD CANAL	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Hamma Hamma	Native	Wild	Healthy
Duckabush	Native	Wild	Healthy
Dosewallips	Native	Wild	Depressed
STRAIT OF JUAN DE FUCA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Upper Dungeness	Native	Wild	Depressed
Lower Dungeness	Native	Wild	Critical
Elwha	Native	Wild	Critical

There are no pink salmon for the Coastal or Columbia River regions.

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 19.

SOCKEYE SALMON STOCKS IN WASHINGTON

PUGET SOUND			
SKAGIT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Baker	Native	Cultured	Critical
LAKE WASHINGTON	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Cedar	Non-Native	Wild	Depressed
Lk WA/Sammamish Tribs	Unknown	Wild	Depressed
Lk Washington Beach	Unknown	Wild	Depressed

COASTAL			
SOOES/OZETTE	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Ozette	Native	Wild	Depressed
QUILLAYUTE	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Lk Pleasant	Native	Wild	Unknown
QUINAULT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Quinault	Native	Wild	Healthy

COLUMBIA RIVER			
UPPER COLUMBIA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
Wenatchee	Mixed	Wild	Healthy
Okanogan	Native	Wild	Healthy

STEELHEAD STOCKS IN WASHINGTON

PUGET SOUND			
NOOKSACK/SAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
SF Nooksack	Native	Wild	Unknown
WINTER			
Dakota Cr	Native	Wild	Unknown
Mainstem/NF Nooksack	Native	Wild	Unknown
SF Nooksack	Native	Wild	Unknown
Middle Fork Nooksack	Native	Wild	Unknown
Samish	Native	Wild	Depressed
SKAGIT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Finney Cr	Native	Wild	Unknown
Sauk	Native	Wild	Unknown
Cascade	Unknown	Wild	Unknown
WINTER			
Mainstem Skagit/Tribs	Native	Wild	Healthy
Sauk	Native	Wild	Healthy
Cascade	Native	Wild	Unknown
STILLAGUAMISH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Deer Cr	Native	Wild	Critical
SF Stillaguamish	Non-Native	Wild	Unknown
Canyon Cr	Mixed	Wild	Unknown
WINTER			
Stillaguamish	Native	Wild	Healthy

TABLE 20. STEELHEAD STOCKS IN WASHINGTON (continued)

SNOHOMISH	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
SUMMER			
Tolt	Unknown	Wild	Depressed
NF Skykomish	Native	Wild	Unknown
SF Skykomish	Non-Native	Wild	Healthy
WINTER			
Snohomish/Skykomish	Native	Wild	Healthy
Pilchuck	Native	Wild	Healthy
Snoqualmie	Native	Wild	Healthy
LAKE WASHINGTON	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
WINTER			
Lk Washington	Native	Wild	Depressed
DUWAMISH/GREEN	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Green (Duwamish)	Non-Native	Wild	Healthy
WINTER			
Green (Duwamish)	Native	Wild	Healthy
PUYALLUP	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
WINTER			
Mainstem Puyallup	Native	Wild	Healthy
White (Puyallup)	Native	Wild	Healthy
Carbon	Native	Wild	Healthy
NISQUALLY	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
WINTER			
Nisqually	Native	Wild	Healthy

TABLE 20. STEELHEAD STOCKS IN WASHINGTON (continued)

SOUTH SOUND	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
WINTER			
Deschutes	Non-Native	Wild	Healthy
Eld Inlet	Native	Wild	Unknown
Totten Inlet	Native	Wild	Unknown
Hammersley Inlet	Native	Wild	Unknown
Case/Carr Inlets	Native	Wild	Unknown
East Kitsap	Native	Wild	Unknown
HOOD CANAL	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Skokomish	1 [1]	1	Unknown
Duckabush	1	1	Unknown
Dosewallips	1	1	Unknown
WINTER			
Dewatto	1	1	Depressed
Tahuya	1	1	Depressed
Union	1	1	Unknown
Skokomish	1	1	Depressed
Hamma Hamma	Native	Wild	Unknown
Duckabush	1	1	Depressed
Dosewallips	1	1	Depressed
Quilcene/Dabob Bays	1	1	Unknown
STRAIT OF JUAN DE FUCA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Dungeness	1	1	Depressed
Elwha	1	1	Depressed

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 20. STEELHEAD STOCKS IN WASHINGTON (continued)

STRAIT OF JUAN DE FUCA	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
WINTER			
Discovery Bay	Native	Wild	Depressed
Sequim Bay	Native	Wild	Unknown
Dungeness	1	1	Depressed
Morse Cr/Independents	1	1	Depressed
Elwha	Mixed	Wild	Depressed
Salt Cr/Independents	Native	Wild	Unknown
Lyre	1	1	Unknown
Pysht/Independents	1	1	Healthy
Clallam	1	1	Unknown
Hoko	Native	Wild	Healthy
Sekiu	Native	Wild	Unknown
Sail	Native	Wild	Unknown

COASTAL			
SOOES/OZETTE	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
WINTER			
Sooes/Waatch	Native	Wild	Unknown
Ozette	Native	Wild	Unknown
QUILLAYUTE	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Sol Duc	1 [1]	Wild	Unknown
Bogachiel	1	Wild	Unknown
Calawah	1	Wild	Unknown

[1] Unresolved by state and tribes - see Appendix Stock Report.

TABLE 20. STEELHEAD STOCKS IN WASHINGTON (continued)

QUILLAYUTE	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
WINTER			
Quillayute/Bogachiel	Native	Wild	Healthy
Dickey	Native	Wild	Healthy
Sol Duc	Native	Wild	Healthy
Calawah	Native	Wild	Healthy
HOH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Hoh	Native	Wild	Unknown
WINTER			
Goodman Cr	Native	Wild	Unknown
Mosquito Cr	Native	Wild	Unknown
Hoh	Native	Wild	Healthy
KALALOCH	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
WINTER			
Kalaloch Cr	Native	Wild	Unknown
QUEETS	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Queets	Native	Wild	Healthy
Clearwater	Native	Wild	Unknown
WINTER			
Queets	Native	Wild	Healthy
Clearwater	Native	Wild	Healthy
RAFT	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
WINTER			
Raft	Mixed	Composite	Unknown

TABLE 20. STEELHEAD STOCKS IN WASHINGTON (continued)

QUINAULT	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
SUMMER			
Quinault	Native	Wild	Unknown
WINTER			
Quinault/Lk Quinault	Mixed	Wild	Healthy
Quinault	Native	Wild	Healthy
MOCLIPS/COPALIS	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
WINTER			
Moclips	Native	Wild	Healthy
Copalis	Native	Wild	Unknown
GRAYS HARBOR	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Humptulips	Native	Wild	Unknown
Chehalis	Unknown	Wild	Unknown
WINTER			
Humptulips	Native	Wild	Healthy
Hoquiam	Native	Wild	Healthy
Wishkah	Native	Wild	Healthy
Wynoochee	Mixed	Composite	Healthy
Satsop	Native	Wild	Depressed
Chehalis	Native	Wild	Healthy
Skookumchuck/Newaukum	Mixed	Composite	Depressed
South Harbor	Native	Wild	Unknown

TABLE 20. STEELHEAD STOCKS IN WASHINGTON (continued)

WILLAPA BAY	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
WINTER			
North R/Smith Cr	Native	Wild	Unknown
Willapa	Native	Wild	Healthy
Palix	Native	Wild	Unknown
Nemah	Native	Wild	Unknown
Naselle	Native	Wild	Healthy
Bear	Native	Wild	Unknown

COLUMBIA RIVER			
LOWER COLUMBIA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Kalama	Mixed	Wild	Depressed
EF Lewis	Native	Wild	Unknown
NF Lewis	Native	Wild	Depressed
Mainstem Washougal	Native	Wild	Unknown
WF (NF) Washougal	Native	Wild	Unknown
WINTER			
Grays R	Native	Wild	Depressed
Skamokawa Cr	Native	Wild	Unknown
Elochoman	Native	Wild	Depressed
Mill Cr	Native	Wild	Depressed
Abernathy Cr	Native	Wild	Depressed
Germany Cr	Native	Wild	Depressed
Cowlitz	Mixed	Wild	Depressed
Coweeman	Native	Wild	Depressed
Mainstem/NF Toutle	Native	Wild	Depressed
Green (Toutle)	Native	Wild	Depressed
SF Toutle	Native	Wild	Healthy

TABLE 20. STEELHEAD STOCKS IN WASHINGTON (continued)

LOWER COLUMBIA - Cont.	STOCK ORIGIN	PRODUCTION TYPE	STOCK STATUS
Kalama	Native	Wild	Healthy
Mainstem/NF Lewis	Native	Wild	Depressed
EF Lewis	Native	Wild	Depressed
Salmon Cr	Native	Wild	Depressed
Mainstem Washougal	Native	Wild	Unknown
WF (NF) Washougal	Native	Wild	Unknown
Hamilton Cr	Native	Wild	Unknown
UPPER COLUMBIA	**STOCK ORIGIN**	**PRODUCTION TYPE**	**STOCK STATUS**
SUMMER			
Mainstem Wind	Native	Wild	Depressed
Panther Cr (Wind)	Native	Wild	Depressed
Trout Cr (Wind)	Native	Wild	Depressed
White Salmon R	Unknown	Wild	Depressed
Klickitat	Native	Wild	Unknown
Rock Cr	Native	Wild	Unknown
Walla Walla	Mixed	Composite	Depressed
Touchet	Mixed	Composite	Depressed
Tucannon	Mixed	Composite	Depressed
Asotin Cr	Mixed	Composite	Depressed
Grande Ronde	Mixed	Composite	Depressed
Yakima	Native	Wild	Depressed
Wenatchee	Mixed	Wild	Depressed
Entiat	Mixed	Wild	Depressed
Methow/Okanogan	Mixed	Wild	Depressed
WINTER			
Wind	Native	Wild	Unknown
White Salmon R	Unknown	Wild	Depressed
Klickitat	Native	Wild	Unknown