

STATE WATER PROGRAM



W.W.I.R.P.P. SERIES - NO. 9

NISQUALLY RIVER BASIN INSTREAM RESOURCES PROTECTION PROGRAM INCLUDING PROPOSED ADMINISTRATIVE RULES

(WATER RESOURCE INVENTORY AREA 11)

**STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY**

FEBRUARY 1981

**NISQUALLY RIVER BASIN
INSTREAM RESOURCES PROTECTION PROGRAM
INCLUDING
PROPOSED ADMINISTRATIVE RULES
(WATER RESOURCE INVENTORY AREA 11)**



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Olympia, Washington

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SUMMARY

The Western Washington Instream Resources Protection Program develops instream resources protection measures under the authority of Chapter 90.54 RCW (Water Resources Act of 1971), Chapter 90.22 RCW (Minimum Water Flows and Levels), and Chapter 173-500 WAC (Water Resources Management Program) for the 26 water resource inventory areas (WRIAs) found in Western Washington. The Washington Department of Ecology (WDOE) has formed a multidisciplinary, interagency team to develop information for determining the measures necessary to protect the instream resources in the Nisqually River Basin (WRIA 11). This planning effort also involved private, public, county, tribal, and federal agency coordination. It has resulted in administrative rules designed to protect instream flow levels and minimize adverse impacts that could result from future water appropriations within the Nisqually River Basin.

Instream resources include fish, wildlife, recreation, navigation, water quality, scenic and aesthetic values, and other environmental values which may be adversely affected by both natural and man-caused factors within the Nisqually Basin. The Nisqually River Basin Instream Resources Protection Program (IRPP) establishes minimum flows for the main stem of the Nisqually River and, in addition, establishes closures to future out-of-stream consumptive use of the bypass reach, and mid reach of the Nisqually River, McAllister Creek, Mashel River, and other selected tributaries.

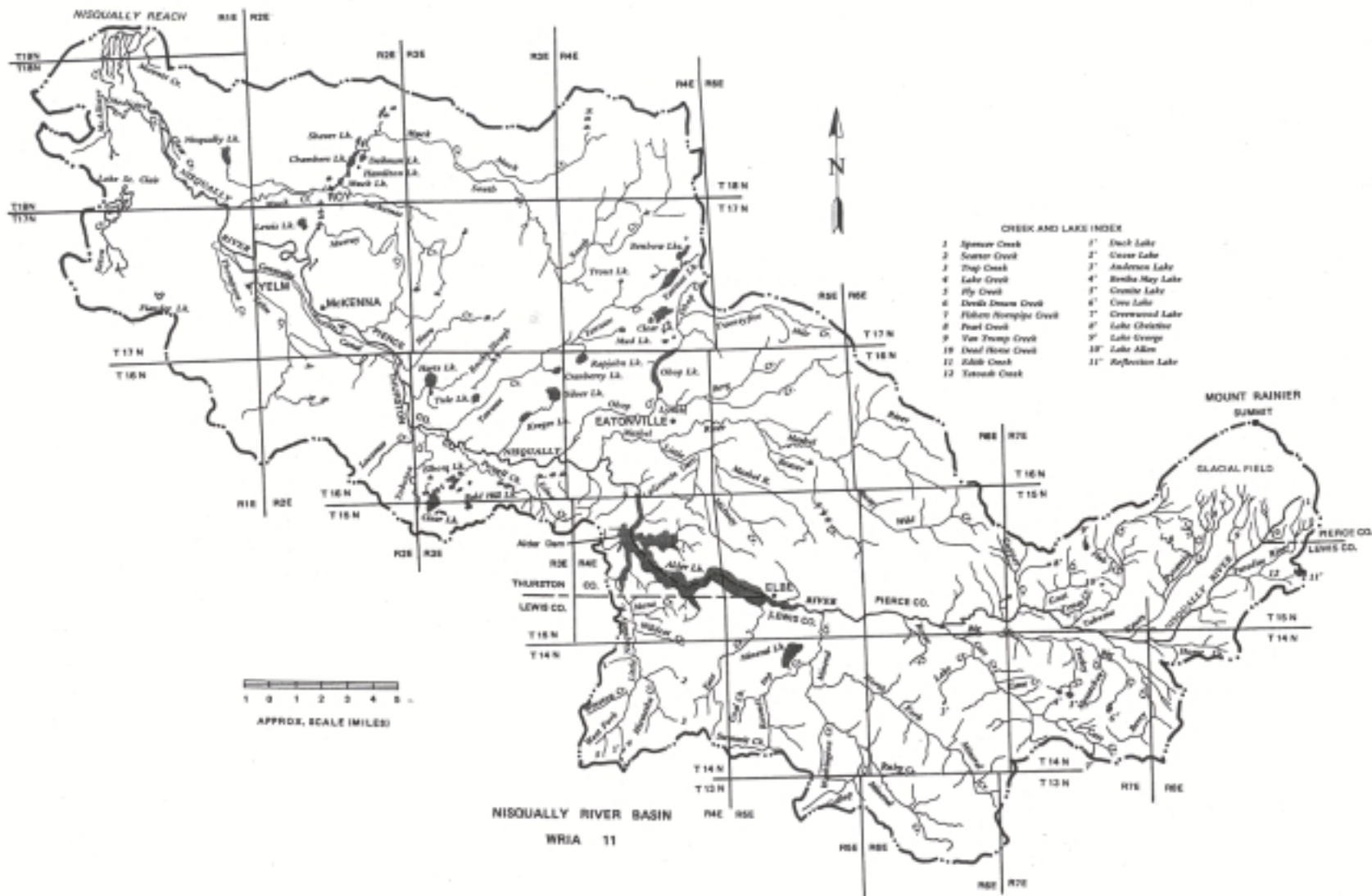
NO EXISTING WATER RIGHTS WILL BE AFFECTED BY THE NISQUALLY RIVER BASIN INSTREAM RESOURCE PROTECTION PROGRAM.

ACKNOWLEDGEMENTS

Primary credit for the development of the Nisqually River Basin Instream Resources Protection Program goes to the members of the planning teams who contributed their time and effort.

Entire sections of this program are the result of contributions .from the Nisqually Indian Tribe (George Walters), Department of Game (Hal Beecher), and the Black Hills Audubon Society (Jack Davis). Extensive editing and advice was provided by WDOE's Water Resources Policy Development Section (Ken Slattery) and other planning team members. The Nisqually River Basin Planning Team consisted of the following members:

- Washington Department of Game
- Washington Department of Fisheries
- U.S. Fish and Wildlife Service
- Washington Farm Bureau
- Tacoma City Light
- Nisqually Indian Tribe
- Centralia City Light & Power Co.
- Black Hills Audubon Society
- Federal Energy Regulatory Committee
- Tahoma Audubon Society
- Lewis County
- League of Women Voters
- Thurston County Commissioners
- City of Yelm
- City of Olympia
- City of Eatonville
- City of Lacey
- Washington Sportsmens Council
- U.S. Army, Ft. Lewis, WA
- Public at large
- Department of Ecology, Southwest Regional Office
- Pierce County
- Nisqually Delta Assoc.



I. NISQUALLY RIVER BASIN INSTREAM RESOURCE PROTECTION PROGRAM OVERVIEW

The Nisqually River Basin Instream Resource Protection Program establishes specific instream flow levels and stream closures to protect the instream resources of fish, wildlife, water quality, navigation, recreation, scenic, and other environmental values. An overall Western Washington Instream Resources Protection Program proposal and Environmental Impact Statement has been circulated to the public and, governmental agencies. (Copies are available from Department of Ecology (DOE), Olympia.) The conceptual approach and technical procedures used to determine the instream flows are outlined in that document.

Authority

The Water Resources Act of 1971 provides that perennial streams and rivers shall be retained with base flows necessary to provide for preservation of wildlife; fish; navigation; and scenic, aesthetic, and other environmental and navigational values. [RCW 90.54.020 (3) (a) 1971.] The state may also establish minimum water flows or levels for streams, lakes, or other public waters for the purposes of protecting fish, game, birds, or other wildlife resources or recreational or aesthetic values (RCW 90.22.010). The Nisqually River Basin Instream Resources Protection Program is authorized by these statutes. The base or minimum flows proposed in this program are referred to by the generic name "instream flows."

Public Participation

All interested individuals, private groups, and public agencies have been encouraged to comment on any aspect of this program. An ongoing series of coordination meetings have been accomplished with local, county, state, federal, and tribal agencies and interested private individuals and organizations. Public workshops have been held in Lacey and Yelm. A public "SHOW ME" tour of the Nisqually River Basin was conducted on the 16th of August 1980. A public hearing was held December 1980 in the Rowsix hearing room of the Department of Ecology in Lacey. The public adoption proceedings were completed during January 1981.

Planning Assumptions

The first assumption made in the development of the Nisqually River Basin Instream Resources Protection Program is that adequate data are available at the present time upon which to develop an instream resources protection program. A second assumption is that no supplemental environmental impact statement (EIS) is required because the overall EIS for the Western Washington Instream Resource Protection Program adequately addresses anticipated environmental impacts.

Proposed Action

The Nisqually River Basin Instream Resources Protection program identifies the need to establish minimum flows and closures to future out-of-stream consumptive appropriation. The program is based on analysis of basin hydrology and surveys of fish production capabilities in various parts of the Nisqually River Basin. Specific actions are as follows:

1. Establishment of minimum streamflows in the lower and upper reaches of the Nisqually River throughout the year.
2. Establishment of minimum streamflows for the bypass and midreach of the Nisqually River and closes these reaches to further out-of-stream consumptive use from June 1-October 31.
3. Establishment of a minimum flow on the Mashel River. Closes the Mashel River and all tributaries from June 1-October 31.
4. Establishment of new closures to further out-of-stream or lake consumptive use on the Mashel River, Mounts Creek, Clear Creek, Tanwax Creek, McAllister Creek, and Lake Saint Clair.
5. Provision for regulation review by the Department of Ecology at least once in every five years.
6. DOES NOT AFFECT ANY EXISTING WATER RIGHTS.

Methodology

Utilizing the Water Resources Act of 1971 and the Minimum Water Flows and Levels Act of 1969 as the basis for establishing minimum flows, DOE has formulated a planning team to evaluate the water resources of the Nisqually River Basin. Contained within the Water Resources Act is the fundamental concept that the quality of the natural environment shall be protected and, where possible, enhanced through the retention of sufficient base flows to provide for preservation of wildlife, fish, and other instream values. The fundamental objective in establishing such flows is the protection and preservation of these instream values.

The terms "base flows" and "minimum flows" are, for the purpose of this program, synonymous. These are interpreted as levels of flow that can be expected to be exceeded a relatively high percentage of the time. Base or minimum flows as authorized by state law are referred to by the department as "instream flows."

Minimum flows referred to within this program are those flows required to maintain, preserve, and protect existing fish populations and other aquatic organisms, wildlife, water quality, scenic and aesthetic values, and recreational activities to the extent possible commensurate with the human needs for water. [10][12]

As a first step, the river basin planning team members conduct a comprehensive stream system analysis. Whenever possible, existing stream gage information is used to determine the historic record of streamflows. Appropriate gaging stations chosen as instream flow control stations are identified by stream name; reach description; control station number; river mile; and section, township, and range. Next, the planning team classifies each stream reach and/or major tributary as to its importance to the instream resources. Team members rate each stream on a scale of one to four for specific instream attributes that will be considered along with other factors in establishing minimum flows.

Technical water resources information is developed by the planning team engineers in the form of the Nisqually River Basin Technical Bulletin. Of primary importance are the discharge-duration hydrographs prepared for each control station. These graphs show the relative year-round expectancy of different levels of streamflow for a specific stream location based on a statistical analysis of the historical streamflow record for that location.

Planning team members representing private, state, federal, and tribal agencies show the available fish habitat for spawning and rearing at various instream flow, levels. Socioeconomic aspects and municipal, irrigation, and other out-of-stream uses of water are also considered by the team.

Finally, planning team members make recommendations to the Department of Ecology on the minimum flow levels needed to protect fish, wildlife, water quality, scenic and aesthetic values, navigation, and environmental factors. These recommendations are reviewed by DOE decision makers and, if accepted, are presented to the public and the state Ecological Commission in draft form for review and comment. The recommendations are in the form of a draft program report and the proposed administrative rules. In addition to the minimum flows, the draft regulation includes sections which adopt past administrative stream closures and low flow limitations, define appropriate new closures, and define management procedures and relationships. Following a 60-day comment period and public hearings, the department incorporates comments and suggestions and seeks additional input and communication with interested parties. The department attempts to respond to all substantive comments and questions in writing. Finally, the final proposed rules are considered for adoption by the Director or Deputy Director of the department in a public adoption proceeding. As the decision maker, he may adopt the rules as submitted, change them, or direct the department to study the matter further.

II. NISQUALLY RIVER BASIN ENVIRONMENTAL SETTING

Location and Area Description

The Nisqually River Basin is located in the western part of Washington State near the terminus of southern Puget Sound. The basin encompasses all of Water Resources Inventory Area 11 and is located within Pierce, Thurston, and Lewis counties. Approximately 60 percent of this basin is within southern Pierce County, 30 percent in northern Lewis County, and about 11.0 percent in Thurston County. [1] The basin drains an area of over 720 square miles. The Nisqually River, the principal river of the basin, flows for a distance of over 80 miles from the glaciers of Mt. Rainier into southern Puget Sound.

Principal tributaries within the Nisqually River Basin include the Little Nisqually River, Mineral Creek, Mashel River, Muck Creek, Ohop Creek, and Tanwax Creek in addition to the Nisqually River main stem.

Life Zones

Naturalists commonly divide the natural communities of plants and animals into a number of various types. These types are indicated by dominant plants and animal species and the physical environment of the area under study. These major community types are referred to as "life zones." The Nisqually River Basin contains the Arctic-Alpine, Hudsonian, Canadian, and the Transition Life zones (Figure 1, pg. 5). [2]

Major natural influences in the various "life zones" include climate, soils, geology, plant productivity, temporal patterns, species richness, and vulnerability to disturbance. Because the Nisqually River Basin Instream Resource Protection Program's focus is on instream resources, particularly fish and wildlife, it is important to understand the habitat requirements for fish and wildlife species whose preservation can be assured by the proper safeguarding and stewardship of their water and riparian-related ecosystems.

Arctic-Alpine Zone

The eastern region of the Nisqually River Basin is dominated by Mt. Rainier and the adjoining Cascade Mountain Range. This region includes the Arctic-Alpine Zone with elevations ranging from over 14,400 feet-at the summit of Mt. Rainier down to about the 6,500-foot elevation line. Hydrologically, this zone plays an important part in that it provides important spring and summer snowmelt flows to the Nisqually River. This zone has a very harsh arctic climate with heavy snows occurring nine months of the year. (The glaciers of Mt. Rainier are a direct result of more snow falling than melts in an average year.) Animal and plant species have only a brief three-month period in which to reproduce and grow in this zone in many cases. Although trees do not exist, dwarf shrubs and heathers are found in connection with other herbaceous plants. The habitat within the Arctic Life Zone is especially fragile, and the shallow soils are easily disturbed. Stream courses are generally open and ice free only during the summer months, as are the many high lakes. The storage capacity of the glaciers on Mt. Rainier plays a significant role in providing the water resources for instream resource needs during the spring and summer months. Streams are characterized by numerous cascades and falls, with heavy concentrations of boulders and cobbles. Gradient is usually very steep and runoff is rapid. The geologic impact of recent and existing glaciers is prevalent throughout this zone as is the postvolcanic influence of Mt. Rainier. [2]

Hudsonian Zone

Beginning at an approximate elevation of 6,500 feet and extending down to 5,000 feet, the Hudsonian Life Zone is encountered within the Nisqually River Basin. Dominant trees within the Hudsonian Zone include conifers and shrubs. Wet, bog-like meadows dot the upper drainages.

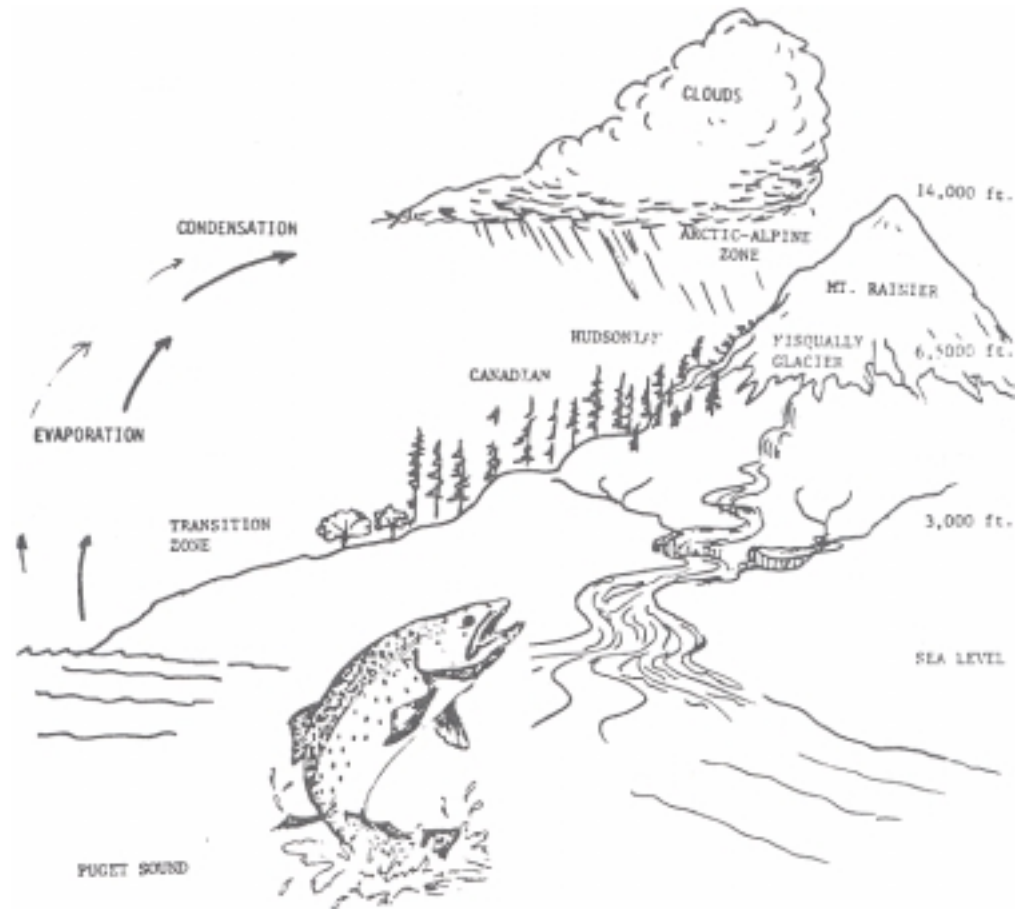


FIGURE 1
Nisqually River Basin Life Zones

These meadow lands possess an abundance of flowers, grasses, and sedges. The headwaters of many of the basin streams begin within the numerous springs in these highland meadows. Bird, insect, and animal life is usually relatively abundant during the summer months, while resident populations of trout are found in many of the high lakes and streams. Forest productivity, due to shallow soils and harsh climate conditions, is limited. Erosion from natural and man-caused factors can be severe. Stream channels are fixed or braided with boulders, cobbles, and gravel dominating. Gradient is steep. Few human habitations exist within this zone, although some year-round human recreational activity is present within the Mt. Rainier National Park. Past glacial activity is evident in the higher mountain valleys. [2]

Canadian Zone

Commencing at about the 5,000-foot level and moving down to about the 3,000-foot elevation, considerable changes in vegetative characteristics occur within the Nisqually Basin. Substantial stands of commercially valuable conifer forest grow in relative abundance. Douglas fir, cedar, hemlock, and spruce dominate the mountain areas, while maple, alder, cottonwood, and willow are found along the stream courses. Bird, animal, and fish life is fairly abundant. Deer, elk, and black bear are present throughout this region. Resident trout inhabit the streams and the lakes produce good populations of fish. Stream and river channels are braided containing boulder, cobble, gravel, and some sand. Glacial cobble and till are evident in the Nisqually River Valley as a result of the Vashon Glaciation 13-20,000 years ago. Gradient varies from 25 feet per mile to :5 feet per mile. Human activity in the form of logging and road construction is very evident within this life zone within the Nisqually Basin. [2]

Humid Transition Zone

The "humid transition" zone covers the elevations from sea level at Puget Sound upward to about the 3,000-foot level in the Nisqually River Basin. Highly valuable forests of Douglas fir, western red cedar, and western hemlock are present within this life zone. Shrub and browse plant species are common also. Riparian vegetation is highly important to fish and wildlife within this zone and includes alder, cottonwood, maple, and willow. Winters are mild and wet; however, the spring and summer growing seasons are relatively lengthy. Rainfall varies from 30-80 inches per year. Bird, animal, and fish life is usually abundant, especially in areas of nonclimax vegetation. Anadromous fishery production is higher here than in other life zones. Human activity is present with logging., farming, and recreation dominating. Small communities and transportation routes are scattered throughout, including Eatonville, DuPont, Elbe, Roy, and Yelm. Streams and rivers have both resident and migratory fish species. Numerous streams, lakes, and beaver ponds dot this region. Streams include the Nisqually River, Mashel River, Tanwax Creek, Ohop Creek, Muck Creek, and McAllister Creek. Many of these streams are inhabited by sea-run trout, salmon, and steelhead during various periods of the year. Practically all of the humid transition region has been heavily impacted by the Vashon glaciation period (the last occurrence 20,000± years ago). Heavy deposits of cobbles, gravel, and till are evident along most of the stream courses. Soils are generally shallow except alluvial deposits in the lower valleys. Lowland lakes are numerous and very heavily used for most recreational activities. Stream channels are braided, sinuous, or branched. Stream gradients are shallow.

Also located within the Nisqually River Basin is the unique life zone known as the "Humid Transition Prairies." These "natural" prairies are found near Roy, Yelm, and the lower Mashel River. Natural prairies attracted early pioneer families and were considered excellent livestock raising areas. Native Americans also used these prairies for horse grazing and root gathering. Such unusual (for Western Washington) plant species as the Ponderosa Pine and bunch grasses are found near and within these unique biotic areas. Weir, Chambers, and Nisqually prairies all possess shallow soils. Due to the droughty soil conditions and summer droughts and low streamflows, streams passing through these areas are commonly intermittent during the midsummer periods. (Muck Creek and Yelm Creek are prime examples.)

Climate

The Nisqually River Basin lies within the winter range of the mean Pacific storm tract. Accordingly, abundant precipitation and mild temperatures are normal from mid-October through April. With the building of the Eastern Pacific anticyclone along the West Coast in late spring, the storm track is displaced northward and summers are usually very dry. [18]

Terrain determines the distribution of precipitation throughout the basin. The lower elevations lie within the "shadow" of the coastal mountains, while orographic lifting of the prevailing southwesterly winds results in a dramatic increase of precipitation at high elevations. Consequently, an individual storm that produces one inch of rain at Yelm may yield a snowfall of four feet with an equivalent of 5 inches of rain on the Nisqually Glacier. Furthermore, the melting of that snow may be delayed for several months while the rainwater enters Puget Sound within a few hours. [18]

Departures from the "normal" are common. The winter pattern of recurrent storms is interrupted by more or less persistent regimes of high pressure with accompanying dry, cold weather. A long-wave trough may become stationary along the coast and cause a prolonged period of warm southerly winds. At such times, the heavy rains at high elevations erode the snowpack, resulting in excessive runoff and flooding. Such events may occur any time from late fall to early spring, a potential which makes forecasting extended water supply uncertain and unreliable. [18]

Some low-lying areas of the lower reach of the Nisqually River are subject to late spring and early fall frosts. [23]

Precipitation may average 140 inches per annum (October-September) at the Nisqually Glacier, and less than 40 at Yelm. Actual totals, however, may vary from 90 inches to 170 inches at the glacier, and from 25 inches to 50 inches at Yelm.

Below 2,000 feet elevation, precipitation generally falls as rain and the occasional snows soon melt.[18]

Population, Land Use, and Economic Development

The Nisqually River Basin is characterized by a comparatively low density of settlement. Future trends and forecasts indicate that approximately 31,000± persons may live in WRIA 11 (Water Resource Inventory Area) by the year 2000. The present population is estimated to be about 20,000.[1] Concentrated population centers are scarce with small agricultural trade centers being the rule. Eatonville, Elbe, Yelm, Roy, and a portion of Ft. Lewis are located within the basin. Heaviest growth is expected to occur in the lower, northern sectors of the basin. The Nisqually Valley, Yelm, Lake St. Clair, and DuPont regions may all experience population increases in future years due to economic growth within and outside the basin. The Yelm subregion is presently growing at an annual growth rate of 10 percent according to Thurston County estimates. [3]

Another area of scattered growth is the region east of Roy and west of Eatonville. Typical construction consists of single-family homes and mobile homes serviced by septic tanks and local individual domestic water sources. Thurston County Regional Planners estimate an annual growth rate of 3 percent for the entire Thurston County portion of the Nisqually River Basin. [3]

Economic development within the basin centers around the forest product industry with major landholdings by Weyerhaeuser Company, St. Regis Company, Washington State, and the U.S. Forest Service. Although much of the harvested timber is processed outside of the basin, the forest products constitute an important regional and state renewable resource. Approximately 380,000 acres of basin lands are in forest production.[1] Small- and medium-scale agricultural holdings that include livestock, poultry, some truck farming, and fur farming are located throughout the Humid Transition Zone. An exception to these small-scale operations is the Wilcox Farm located near Harts Lake, where dairy cattle and chickens are raised in large numbers and constitute an important source of jobs in the local area.

The Nisqually Indian Tribal fishery provides a small economic base for less than two dozen families during good fishing seasons. Commercial harvests have been averaging about 20,000 chum salmon per year. The Nisqually Tribal steelhead harvest averages about 3,000 fish per year. [4]

The service section generates economic yields in the form of the many small businesses scattered throughout the region.

The hydroelectric energy producers, Tacoma Public Utilities Light Division, and Centralia City Light, possess important facilities at the Alder, LaGrande, and Yelm power stations. Approximately 10 percent of Tacoma's hydroelectric needs are generated from the Nisqually projects. The Centralia project serves about 6,000 persons in Centralia. [12][13]

Hydroelectric Project License Proceedings

The Federal Energy Regulatory Commission is presently reviewing the status of the Nisqually River flow regime at the request of the Nisqually Indian Tribe. The purpose of the review is to determine instream flows needed to protect fishery resources. Flow in the river is controlled to an extent by operation of storage in Alder reservoir. Centralia City Light has been diverting up to 800 cfs for many years and the Nisqually Tribe believes that this diversion adversely affects the fishery resources in the bypass reach of the Nisqually River. Although to date the Department of Ecology has chosen not to seek intervenor status in the FERC proceedings, the Department of Fisheries (WDF) and the Department of Game (WDG) are representing the interest of fish and wildlife resources in the proceedings.

Since December 1980, the Alder, LaGrande, and Centralia hydroelectric projects have been operating under an interim flow regime as required by Federal Energy Regulatory Commission (FERC). The interim order provides that the flows in the section of the river between the Yelm project diversion dam and powerhouse (bypass reach) shall at all times equal or exceed:

December 16 - May 31	600 cfs
June 1 - July 31	500 cfs
August 1 - September 30	370 cfs
October 1 - December 15	550 cfs

Deviations from these flows are permitted under certain conditions. It should be recognized that this agreement is effective for an interim period (December 16, 1980 - December 15, 1982) and that the final minimum flows ordered by the FERC could be substantially different.

Other members of a committee designated by FERC to attempt to resolve the instream flow issues include the Puyallup Tribe, Nisqually Tribe, Centralia City Light, and Tacoma Public Utilities Division.

The Nisqually basin provides essential habitat for a regionally important Indian and non-Indian commercial and sport salmon and steelhead fishery. A tribal fish hatchery is located on the Nisqually Indian Reservation. A second hatchery is under construction by the Washington Department of Fisheries on McAllister Creek.

Related Land and Water Resource Plans and Activities

Other related land and water resource planning includes the following:

Comprehensive Plan, Thurston County, 1969.

Nisqually River Basin Water Quality Management Plan, Department of Ecology, 1974.

Pierce County Land Use and Population Projection Present, 1990, and 2020.

Glacier to The Sea, League of Women Voters, 1974.

Pierce County Generalized Comprehensive Plan, 1962.

Water Needs Survey of the Nisqually Indian Tribe and Reservation, 1979.

Utilities Dept. Annual Report, 1979, City of Olympia.

A Comprehensive Water Supply Study Plan for Pierce County and Vicinity, 1969.

Preliminary Regional Concept Plan, Thurston Regional Planning, 1971

Comprehensive Sewerage Plan for Pierce County, Washington, 1969.

Thurston County Preliminary Regional Concept Plan, 1971.

Nisqually Comprehensive Plan, 1974.

Preliminary Assessment for the Greater Olympia Area, March 10, 1980, DSHS.

The Nisqually River Basin Instream Resources Protection Program and proposed Chapter 173-511 WAC has been coordinated with local, county, state, and federal governments and the public during the development and public review phases of the program.

III. WATER RESOURCES

Surface Water

The Nisqually River Basin drains an area of 720 square miles. The principal river within Water Resource Inventory Area (WRIA) 11 is the Nisqually River. This river has a length of approximately 80 miles and originates high on the glaciers of Mt. Rainier and terminates at its estuary in South Puget Sound. For descriptive purposes five distinct reaches of the main stem Nisqually River are identified as follows (Figure 2, Pg. 11).

The upper headwaters reach extends from the Nisqually Glacier on Mt. Rainier downstream to the La Grande Dam at river mile (RM) 42.5. The upper reach of the Nisqually River flows westerly through Mt. Rainier National Park where the National Park Service has developed a small Towhead hydro site and municipal water supply in the vicinity of Longmire (the hydro site is not presently functioning). [1] Alder and La Grande dams, located at RM 42 and 44, provide an important regional source of hydroelectric power. The average flow for the Nisqually River in this reach measured at river gage 12-0825-00 near National was 785 cfs (cubic feet per second) from 1931 to 1960. The communities of Longmire, Ashford, Mineral, National, and Elbe are located within the upper reach.

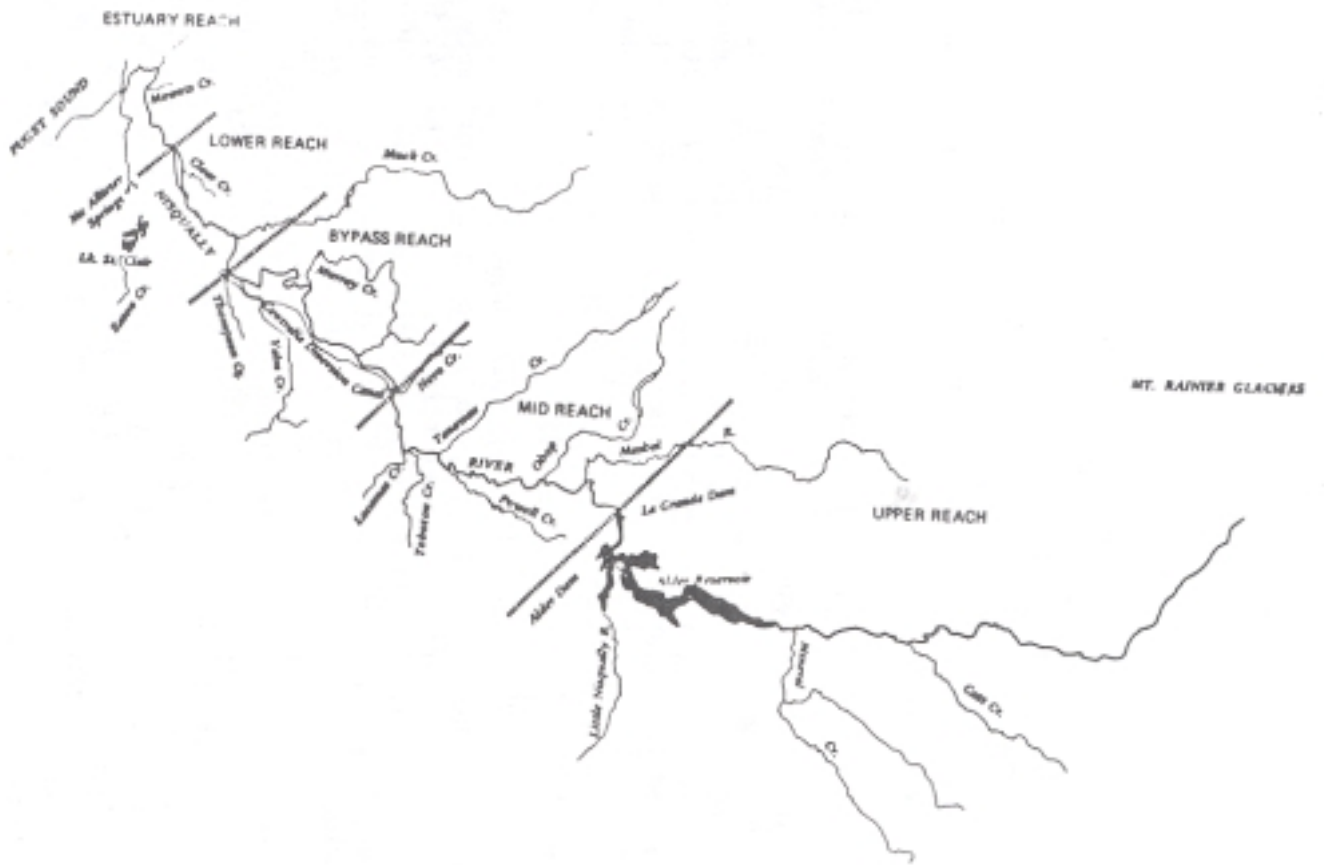


FIGURE 2
Nisqually River Basin

Principal tributaries include Mineral Creek, East Creek, Big Creek, Catt Creek, and the Little Nisqually River.

The mid reach of the Nisqually River extends from LaGrande Dam downstream to the Centralia City Light diversion canal at river mile 26.2. This reach flows through sparsely settled forested regions. Important tributaries within this section include the Mashel River, Ohop Creek, and Tanwax Creek. Average flows for this reach are about 1,800 cfs (cubic feet per second). [1] The flows within the mid reach are controlled to a great degree by releases from Alder and LaGrande dams.

The bypass reach extends from the Centralia canal diversion dam to the Centralia City Light power plant outflow. This canal diverts up to 800 cfs of water from the Nisqually River for a distance of about 14 miles before returning the flows to the river at the Centralia City Light powerhouse near Thompson Creek. Important tributaries include Horn Creek, Murray, and Yelm creeks. Horn Creek experiences pollution by agricultural water quality problems, while Murray Creek experiences very low summer flows. This reach has many small farms located along both flanks of the river. The important Wilcox Farm Corporation is located near this reach and near Harts Lake. Principal communities include Yelm and McKenna. Low flows in the river drop down to an average of 300 cfs during August and September at McKenna Gage No. 12-0895-00 located at river mile 21.8 (see Figure 3, Pg. 13). [7] Fluctuations in summertime flows were common in past years due to the hydroelectric operations at Alder and La Grande. Both salmon and steelhead use this reach for spawning, passage, and rearing. The McKenna sector was observed to have spawning redd counts as high as 123 redds (steelhead nests) per mile during May 1980. [4]

The lower reach covers the region from the Centralia City Light Power Plant outflow near the mouth of Thompson Creek to the influence of the mean high tide in the vicinity of river mile 4.3. (See Figure 4, Pg. 14.) The lower Nisqually River reach includes such important tributaries as Muck Creek, Thompson Creek, Indian Creek, and Clear Creek. The Nisqually Indian Tribal salmon hatchery is located within this reach and along the small tributary known as Indian Creek. Clear Creek, located on the eastside of the Nisqually River, is the site of the recent Department of the Army salmon spawning rehabilitation project. [8] Both the Ft. Lewis Military Reservation and the Nisqually Indian Reservation are located within the lower reach. Small suburban communities are scattered throughout, including Nisqually Village, the new Nisqually Indian Tribal headquarters, and Cuyamuca Village. This reach is heavily utilized for sports fishing and tribal commercial fishing. Low summer flows drop down to an average of 850 cfs from July-September. The mean annual flow is approximately 1,800 cfs.

The estuary and tidal reach is located northwest of the Old 99 highway bridge and includes the important chum salmon producing Mounts Creek tributary. (Mounts Creek is also referred to locally as Red Salmon Creek.) The estuary reach includes the tidal estuaries of the Nisqually River and the Nisqually National Wildlife Refuge. Both sports and commercial fishing is popular within this reach. The estuary reach hosts both marine and freshwater fish and plays

GAGE NO. 12-0895-00

R. M. 21.8

OCT. 1965 - SEPT. 1968

MAY 1977 - SEPT. 1979

Figure 3

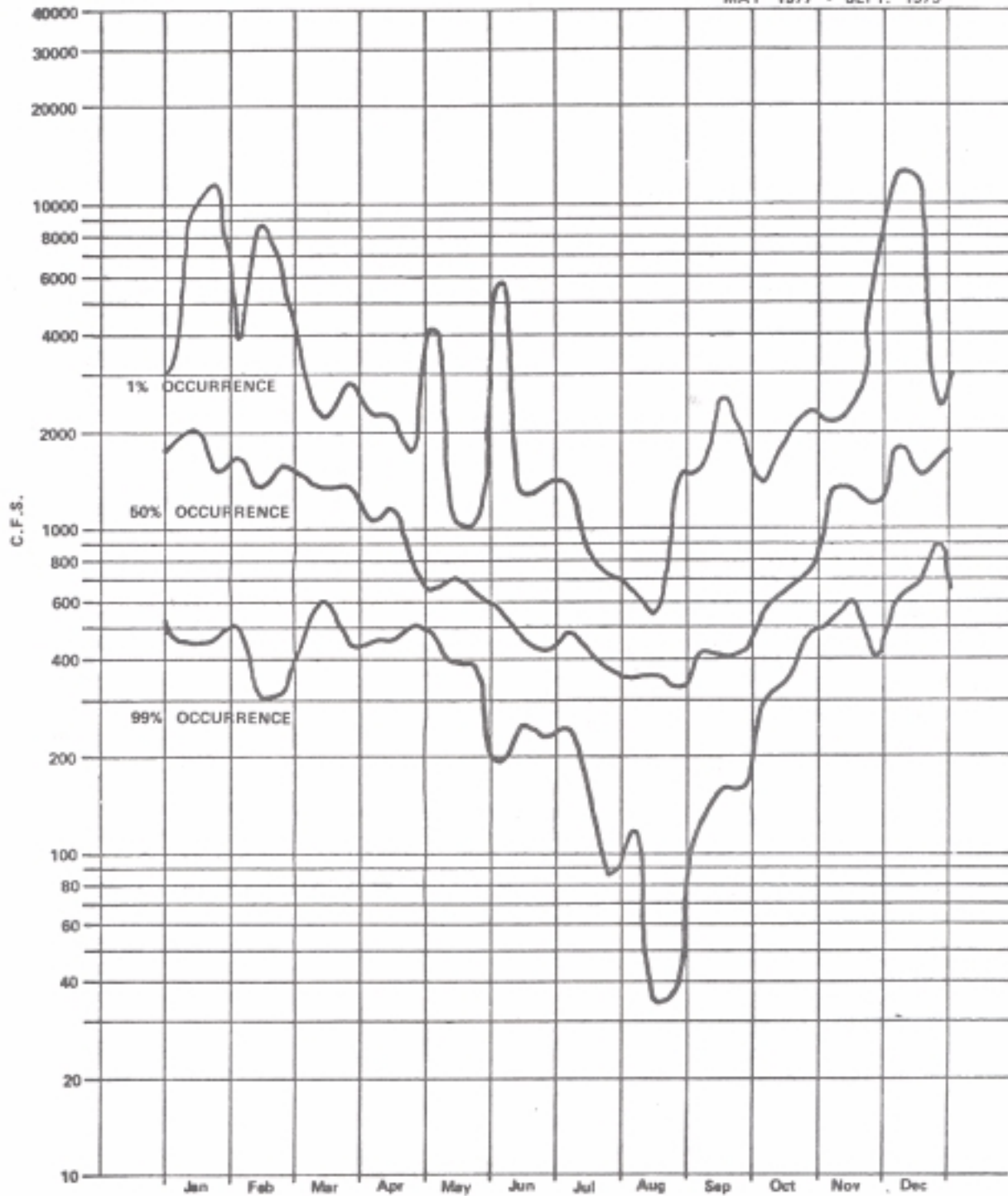


Figure 3
NISQUALLY RIVER AT MCKENNA

CORRELATED FROM GAGE +12-0884-00
(NISQUALLY RIVER NR. MCKENNA)

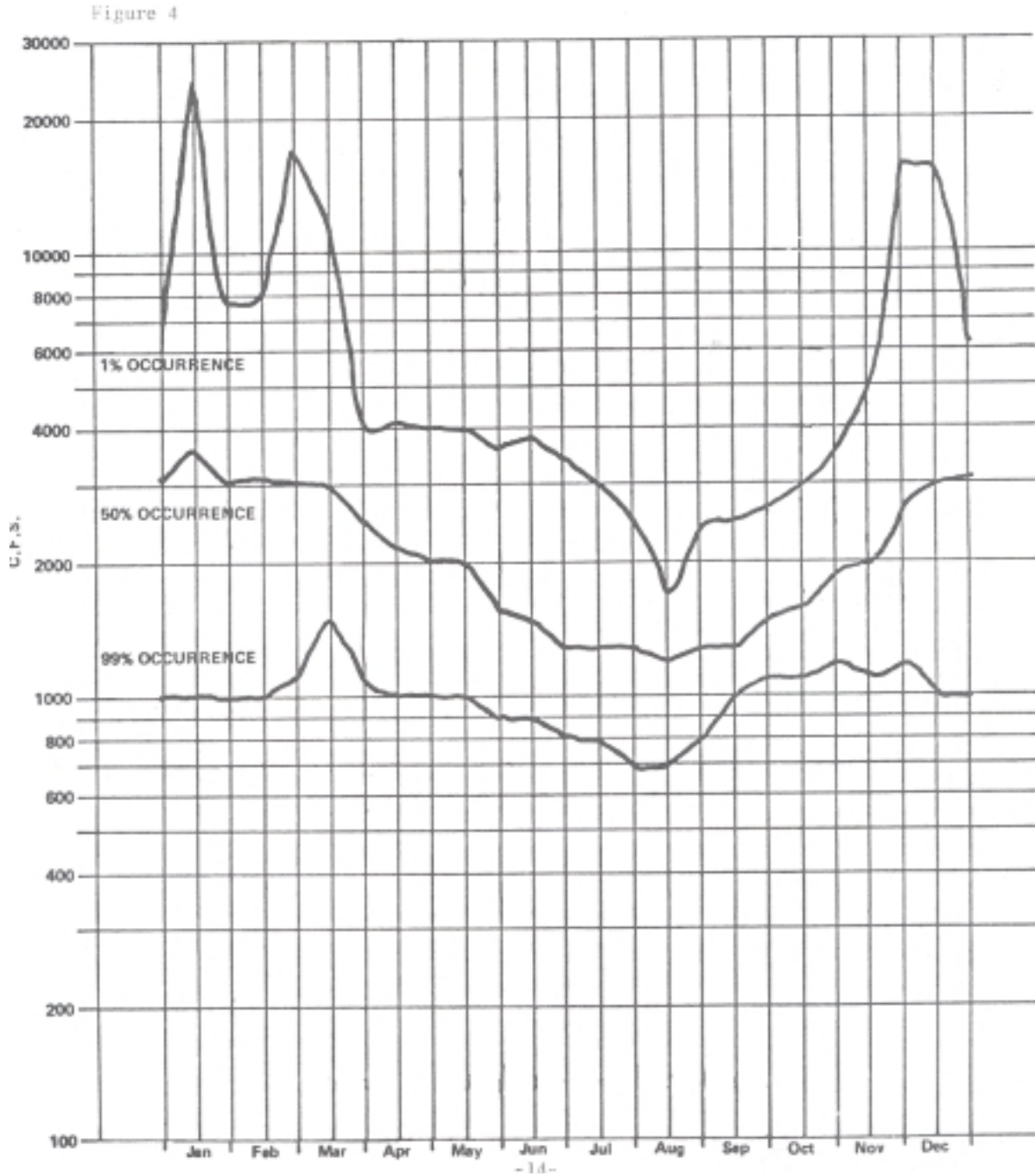


FIGURE 4
Nisqually River Above B.N.R.R. Bridge

an important part in the rearing and smolting phases of salmon, steelhead, and cutthroat trout. Commercial populations of oysters and clams are also located within the tidal areas. The well-known Bragget Farm is also located on the east flank of the river. Bird watching and waterfowl hunting are important recreational activities within this section of the basin. [9]

Located adjacent to the lower Nisqually River is the independent drainage of McAllister Creek. McAllister Creek flows a relatively short distance from McAllister Springs to its mouth at the Nisqually Delta near Luhr Beach. (This stream is influenced by tidal conditions up to the vicinity of McAllister Springs.) McAllister Springs furnishes the City of Olympia with its municipal water supplies. Up to 18 MGD (27.85 cfs) has been pumped from this surface water resource. An average of 6 MGD (9.28 cfs) was consumed by Olympia, Tanglewilde, and Thompson Place during May of 1980. Existing water rights on McAllister Springs amount to about 50 cfs. Average discharge over a 13-year period amounts to only 23 cfs. [10][7] The new Department of Fisheries fish hatchery is under construction on McAllister Creek. This facility will utilize both surface and ground waters. An application for a water right permit for up to 30 cfs has been received. [16]

Lakes

Principal natural lakes within the Nisqually Basin include Mineral Lake, Tanwax Lake, Nisqually Lake, Ohop Lake, Harts Lake, Clear Lake, Lake St. Clair, and Silver Lake. Alder Lake is formed by Alder Dam. All of the basin's larger lakes are heavily used for recreation, and summer home development is extensive. Lake St. Clair is reported to be experiencing water quality problems from agricultural irrigation runoff entering the ground water system. The out-of-lake consumptive use of water remains unknown. Numerous smaller lakes and beaver ponds within the basin provide excellent trout, bass, crappie, perch, and bluegill fishing for basin residents. Nisqually Lake has been heavily contaminated from artillery firing from the Fort Lewis reservation and can no longer be considered safe for public recreational use. This lake has recently been closed to public access for safety reasons. Many other smaller lakes within the basin are in advanced stages of eutrophication. In addition to fishing, many of the basin's lakes provide habitat for migratory waterfowl. Duck hunting is a popular fall sport on all the larger lakes. Wintering bald eagles also find the basin's lakes attractive and sightings are common on Silver, Rapjohn, Tanwax, and Ohop lakes. Alder Reservoir has an osprey nest site that is used by ospreys each year as does Fiander Lake.

Runoff

Runoff is estimated to average 120 inches per year (10 acre-feet/acre) from the upper reaches of the river. This diminishes to about 15 inches in the lowlands. The mean annual discharge for the period 1931-1960 at National (River Mile 57.8) is 785 cfs or 536,000 acre-feet. [1]

Two distinct peak runoff periods normally occur within the Nisqually River. The first is influenced by winter storms while a second, arriving in May and June, is the result of snowmelt from the snow fields and glaciers of Mt. Rainier. Low flow periods usually occur in August and September with glacial snowmelt continuing to contribute to flows throughout the low flow period. See Figures 5 and 6, pg. 17.

Flows within the Nisqually River begin to increase in October from a low summer average flow of about 300 cfs at River Mile 21 near McKenna up to winter flows commonly exceeding 2,000 cfs. [7]

Flooding

Flood characteristics of the Nisqually River show that this river has a long history of flooding with a peak recorded flows reaching 30,700 cfs on December 4, 1975 at USGS Gage 12-088400 near McKenna. Flood waters have presented a serious problem within the lower and estuary reaches of the river. During 1976, the National Wildlife Refuge dike was breached, and severe saltwater flooding occurred within the wildlife refuge. Property damage has also occurred in the vicinity of Franks landing and Nisqually Village in the lower and estuary reaches. [4]

Flood zone protection is of utmost importance to Pierce County planners within the Nisqually River Basin. Emphasis is on curtailing floodplain development for suburban or recreation home construction. [11] Pierce County believes that increased floodplain construction would require extensive diking, channelization, and storage construction that is costprohibitive both in the short- and long-term. [11]

Impoundment and Diversions

The Nisqually River Basin's largest man-made impoundment is Alder reservoir with a storage capacity of 232,000 acre-feet. La Grande reservoir, also located within the upper reach of the Nisqually River, has a storage capacity of 2,700 acre-feet. The principal purpose of these reservoirs is hydroelectric power generation. During recent years, Tacoma City Light has released water during the low flow period for fishery enhancement purposes. [12]

A significant diversion of water takes place at the head of the Centralia City Light canal about 11 miles downstream from La Grande dam where the canal diverts a maximum of 800 cfs. In recent years, during the low flow period, this flow has been reduced to around 600 cfs to help protect the fisheries located within the bypass reach of the Nisqually River. [13] Irrigation diversions within the Nisqually River Basin are estimated to be 2,000 acre-feet per year but due to the trend in reduction of irrigated agriculture, this figure may diminish in future years. The City of Olympia diverts water from McAllister Springs, the source of McAllister Creek.

Many of the basin's lakes are utilized for domestic use including garden irrigation and lawn watering. Lake St. Clair is presently experiencing heavy domestic out-of-lake consumption of water during the summer months. [14]

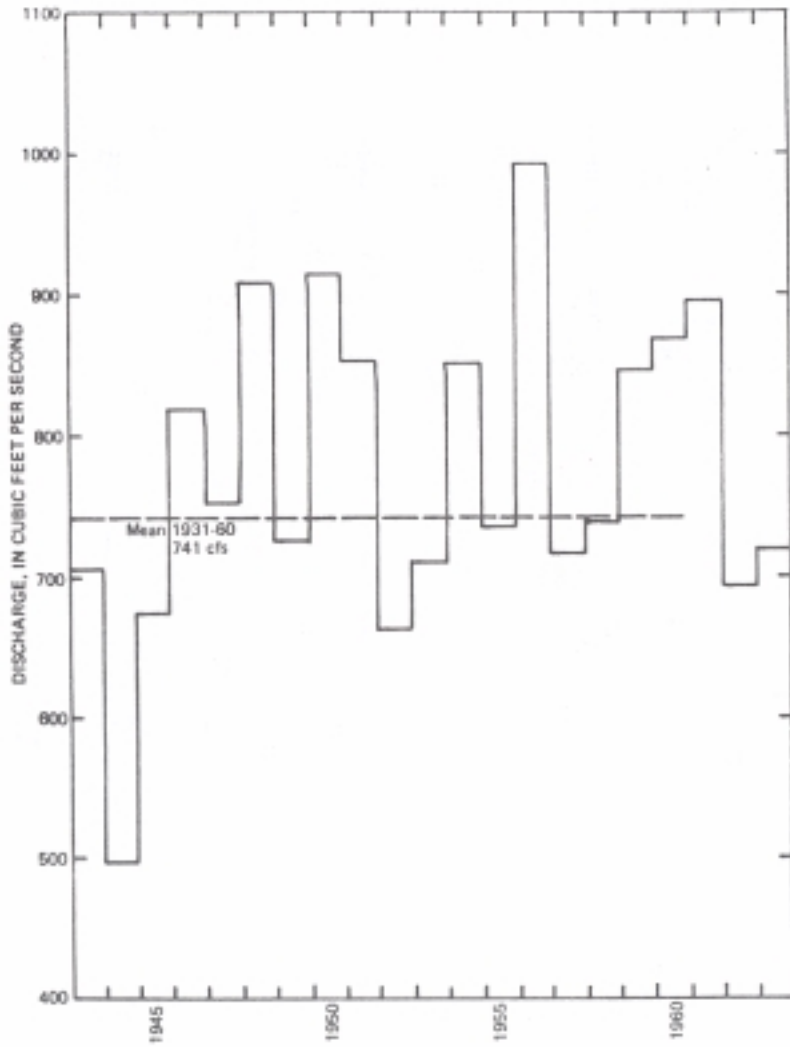


FIGURE 5
Annual Discharges
Nisqually River Near National

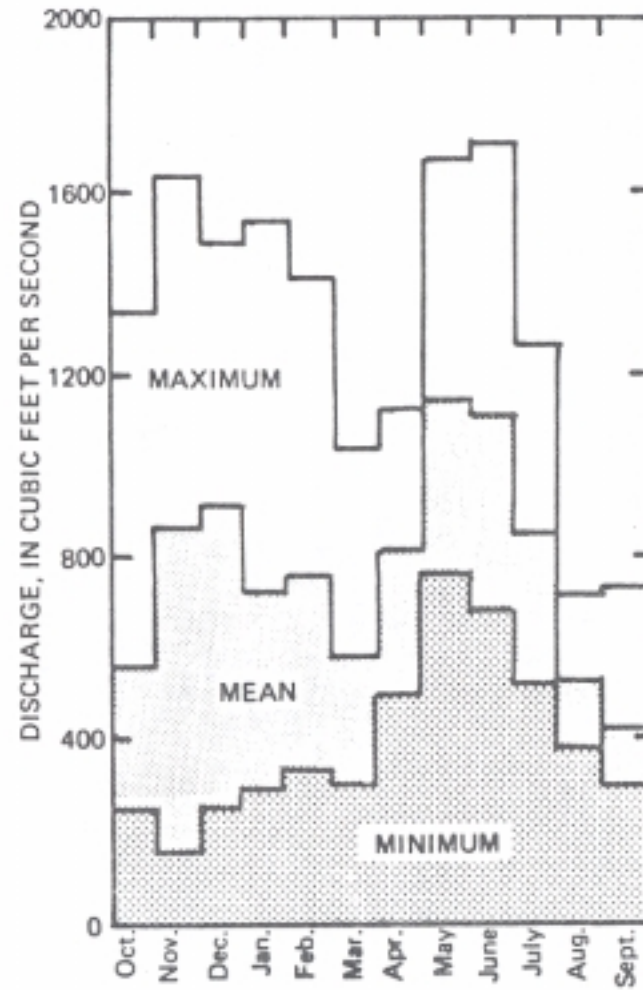


FIGURE 6
Maximum, Mean and Minimum Monthly Discharges,
Nisqually River Near National 1931-60.

The City of Eatonville has four "Ranney type" wells located within the channel of the Mashel River that are heavily dependent on the surface flows from this stream.

Ground Water

The lowland regions of the Nisqually River Basin lie generally to west and north of La Grande. They contain aquifers varying in depth from .10 to 1,000 feet. Most developed ground water is taken from a depth of less than 100 feet. Recharge within the lowland region is thought to be entirely from infiltration and precipitation. Estimates are that this recharge reaches 200,000 acre-feet per year. Discharge of aquifers is probably into the Nisqually River. [1] Ground water quality is generally good but some areas are experiencing high iron content. The city of Yelm depends upon ground water resources for municipal needs. Best yields come from deep aquifers beneath the Nisqually floodplain. [1] One well, located along Medicine Creek in the Nisqually Valley, is known to yield up to 1,000 gallons per minute; while 1 Km to the north, a new well located on the Nisqually Wildlife Refuge yields only 40 gallons per minute. The upland region located east of La Grande, supports aquifers of potentially high yielding wells. Recharge is from precipitation. [1]

IV. WATER QUALITY

Water quality within the Nisqually River Basin is adversely influenced by both man-caused and natural factors. The Nisqually River upstream from Alder Dam to its headwaters has been designated as Class AA water, while all other water segments are Class A. [15]

Four water quality monitoring stations are maintained along the Nisqually River. Water quality within the basin is characterized by occasional high summer concentrations of bacterial coliform counts. High winter coliform counts also occur above Alder Dam.

Nutrient concentrations, especially nitrates, increase as one progresses downstream. Water temperatures and dissolved oxygen content are of good quality throughout the year. Mean temperatures are 13°C during summer and 4°C in winter. [15]

Turbidity is a problem during flood periods and during glacial snowmelt periods with an average of 20 JTU (Jackson Turbidity Units) during flood periods. Flows of glacial snowmelt are very common within the Nisqually River during the warm summer months. National Park Services personnel report high turbidity problems in their municipal water supplies caused by the recent volcanic ashfall from Mt. St. Helens. [6] A severe slope failure located in a recent clearcut four miles upstream from Eatonville on the Mashel River is expected to become a serious siltation problem within the next few years.

Nisqually tribal biologists report water pollution commonly occurs in the outlet ditch from Harts Lake. This pollution has been attributed to agriculture wastes but has not yet been substantiated.

The pH levels occasionally exceed Class A standards in the vicinity of Nisqually. A maximum pH of 9.6 SUs was recorded in 1973.

Industrial discharge within the Nisqually River Basin is presently limited to the Wilcox Farm where all discharge is into a series of diked ponds.

Municipal wastewater treatment facilities within the Nisqually River Basin include Eatonville, Paradise Lodge, Tahoma Woods, Longmire, and the McKenna Nursing Home. During past years, the community of Elbe was known to have discharged raw sewage directly into the Nisqually River. [15]

Nonpoint sources of pollution within the Nisqually Basin include agriculture, farm animals, soil erosion, poor forest practices, and storm runoff. [15]

Sensitive water quality areas within the Nisqually River Basin include water resources being used for municipal and domestic purposes, such as McAllister Springs, the estuary, and all fish propagation reaches.

V. INSTREAM RESOURCE USE

Fisheries Resources

The Nisqually River basin is host to a number of commercially important fish species including salmon and steelhead. Sports fish include trout, steelhead, and whitefish.

The principal game fish of the Nisqually River are steelhead (*Salmo gairdneri*) and cutthroat trout (*S. clarki*) (Table 1, Pg. 20). These fish spawn in flowing water equal to or greater than one foot per second over gravel during winter and spring (February through June). Once fish have spawned, incubating eggs require continued flow of oxygen-bearing water through the gravel. Incubation is generally completed by the first of July, although some spawning continues into July. Following emergence of fry from the gravel, they rear for two years in the stream before smolting and migrating to sea in the spring (April-May). After two years at sea, the large (up to 35 pounds for steelhead, and 6 pounds for cutthroat) adults return to spawn in their native streams. They may enter the streams at almost any season, but peak migrations of steelhead occur in winter and summer, while the peak of the cutthroat migration is in the late summer and fall. In certain places, flows can restrict passage of adults. [9]

Upstream from the two reservoirs, LaGrande and Alder, fish are resident rather than anadromous due to the blockage of the river by Alder Dam. For resident fish, Tennant's (1975) Montana method is appropriate for setting instream flows. The instream flow obtained with the Montana method for the upper reach is approximately 450 cfs from November 15 to May 1, 650 cfs from May 15 to June 15, and dropping to 300 cfs on October 15. In addition to rainbow, cutthroat, and Dolly Varden trout, this area is important for kokanee (*Oncorhynchus nerka*) spawning. Flows in the upper Nisqually are important to allow reliable operation of the two dams, including release of minimum flows in the anadromous zone as discussed above. [9]

The Nisqually River was the 15th best producing stream for sport-caught steelhead in Washington in 1978-79. State fish hatchery production costs to produce a comparable catch of steelhead would be about \$12,000 annually. The costs of constructing a new steelhead hatchery are well over \$1 million according to the Department of Game. [9]

TABLE 1.
Timing of salmon and searun trout fresh-water life phases in Nisqually Basin

Species	Fresh-water Life Phase	Month												
		J	F	M	A	M	J	J	A	S	O	N	D	
Summer-Fall chinook	Upstream migration													
	Spawning													
	Intragravel develop.													
	Juvenile rearing													
	Juv. out migration													
Coho	Upstream migration													
	Spawning													
	Intragravel develop.													
	Juvenile rearing													
	Juv. out migration													
Pink	Upstream migration													
	Spawning													
	Intragravel develop.													
	Juvenile rearing													
	Juv. out migration													
Chum	Upstream migration													
	Spawning													
	Intragravel develop.													
	Juvenile rearing													
	Juv. out migration													
Summer steelhead	Upstream migration													
	Spawning													
	Intragravel develop.													
	Juvenile rearing ^{1/}													
	Juv. out migration													
Winter steelhead	Upstream migration													
	Spawning													
	Intragravel develop.													
	Juvenile rearing ^{1/}													
	Juv. out migration													
Searun cutthroat	Upstream migration													
	Spawning													
	Intragravel develop.													
	Juvenile rearing ^{1/}													
	Juv. out migration													

^{1/} Normally extends over a two-year period.

McAllister Creek is an independent drainage in the northwest corner of the Nisqually basin. McAllister Creek is an unusual, perhaps unique, freshwater ecosystem in Western Washington. It supports a great diversity and abundance of wildlife, both above and below the water surface. A portion of the flow is already diverted and the remaining flow is relatively small compared to the size of the channel. Additional diversion could alter the salinity balance, causing a change in aquatic and terrestrial communities. Department of Game biologists believe that any additional withdrawal of water from the springs would further reduce spawning habitat. Limited spawning habitat and disease are probably the limiting factor for salmonid production in McAllister Creek. A new Department of Fisheries fish hatchery is presently under construction on McAllister Creek. Both chum and Chinook salmon will be produced for the Indian commercial harvest and for Puget Sound sports fishermen.

Also located within the Nisqually delta and estuary is Mounts Creek. This stream is situated along the eastern side of the valley and is locally well known for its good populations of chum salmon and migratory sea-run cutthroat trout. Mounts Creek has very high chum salmon spawning densities according to tribal biologists. [4]

During normal years, good migrations of chinook, chum, and coho salmon move into the lower reach of the Nisqually River (Table 1, Pg. 20). Chinook salmon normally enter the Nisqually River from July to October. Salmon spawning takes place in the main stem, several side sloughs, Clear Creek, Muck Creek, and Yelm Creek. Clear Creek has recently been rehabilitated by the U.S. Army. Approximately \$200,000 of Sikes Act funds were spent in clearing the stream channel and depositing new spawning gravels. Clear Creek has been determined by the U.S. Fish and Wildlife Service (USFWS) as a stream of high potential for the development of fish hatchery. Chum salmon normally do not enter the Nisqually until December. Spawning coho are present from October until December while chinook may enter in July and August. Juvenile coho are present throughout the entire year due to their one- to two-year instream rearing life cycle. During every second year, pink salmon also are spawning within the Nisqually. [16][4]

Steelhead, cutthroat trout, and whitefish are present within this reach during the entire year. Winter run steelhead commonly spawn within the lower reach of the Nisqually in April, May, and June and rear during the entire year. The entire lower reach also provides important transportation waters for all species of fish. [4] Chum salmon harvest in the lower reach of the Nisqually amount to approximately 24,000 fish during 1980-1981 according to Nisqually Tribal biologist.

An important Nisqually Tribal fish hatchery is located at the headwaters of Indian Creek. Approximately 815,000 chinook salmon a year are produced here. In addition, 1.5 million chum salmon are produced at the Tribal hatchery. [4]

Limiting factors, with respect to fisheries production within the lower reach, include occasional severe winter flooding and low summer flow fluctuations. Flows within this reach are heavily influenced by releases from Alder Dam. Logjams are known to block salmon migrations in the smaller tributaries and side channels. Spawning gravel disturbance has in past years been caused by military tracked vehicles below the mouth of Thompson Creek. [16]

Habitat needs include the maintenance of adequate water quantity and quality to insure the protection of fish and wildlife resources. Stream bank protection may be warranted in some areas to prevent erosion problems. Logjam removal is also needed within the smaller tributaries. Glacial siltation has been known to degrade spawning gravels in previous years.

Muck Creek is a tributary of high fishery importance within the lower reach of the Nisqually River. Muck Creek flows into the Nisqually River at RM 10.6. It has been estimated that as much as 40 percent of the Nisqually River Basin's chum salmon productivity comes from this intermittent stream. [4] Principal limiting factors include natural low summer flows and siltation of spawning gravels. Poaching is also a serious problem. Muck Creek is the site of recent U.S. Army, USFWS, and Nisqually Tribal fish counting and tagging operations. Coho, steelhead, and cutthroat also use this stream. Chum salmon spawning populations were approximately 7,000 in 1978 and 5,000 in 1979. [8] During the winter of 1980-81, approximately 6,500 chum salmon and 200 steelhead trout were counted at the fish trap located near the confluence of Much Creek and the Nisqually River. Limiting factors with respect to salmon production appear to be low intermittent stream flows. Flows vary from over 700 cfs to zero at the gage located near Roy. Muck Creek flows in an westerly direction for approximately 20 miles and has a drainage area of about 92 square miles. This stream is presently closed to out-of-stream consumptive use. Chambers Lake, a man-made impoundment, is located within Muck Creek at RM 8. This lake is a popular sport fishing and recreational area. Recreational use of Muck Creek and Chambers Lake is very high with picnicking, .fishing, boating, and waterfowl hunting being popular. The Department of Army, USFWS, and the Nisqually Tribe have developed several salmon enhancement projects on this stream in recent years. Muck Creek and its tributary streams have been recommended for closure to out-of-stream consumptive use by the Nisqually Tribe, Department of Fisheries, and Department of Game.

The bypass reach of the Nisqually River includes the sector from the outfall of the Centralia City Light hydroelectric plant at RM 12.5 up to the head of the diversion canal at RM 26.5. Important tributaries include Yelm Creek, Murray Creek, and Horn Creek.

Chinook, coho, pink, chum, some sockeye salmon, and steelhead trout, cutthroat trout, and whitefish spawn within this reach. All heavily use this section of the Nisqually River. During the spring of 1980 steelhead redd counts reached 120 per mile within this reach. Due to the diversion of 720± cfs within the Centralia City Light Canal, the channel of the bypass reach of the Nisqually River has been artificially reduced from its pre-project capacity. [16]*

Limiting factors include flooding, low flow conditions, and occasional water pollution problems. Natural low flows occur in all the tributaries during the summer months. Due to its high use by salmon and steelhead, this reach has been recommended for closure to future water appropriations by the departments of Fisheries and Game. A minimum flow of 400 cfs is recommended during the time period May-June 15 and 375 cfs is needed from July 16 through September. The Game and Fisheries departments have recommended that Yelm, Murray, and Horn Creek be closed to further out-of-stream consumptive use.

*720± cfs is diverted from the bypass reach.

Yelm Creek joins the Nisqually River at RM 13.1. This stream has a drainage of about 20 square miles. Only the lower .3 miles of the stream is known to produce coho and chum salmon. Yelm Creek is closed to out-of-stream consumptive use. The stream's limiting factors appear to be low summer flows. Steelhead and cutthroat trout also use this stream. Yelm Creek flows across some of the more intensely developed agricultural land in the Nisqually Basin. [16]

Murray Creek reaches the Nisqually River at RM 19.1 and is about 12 miles in length. This stream drains an area of about 20 square miles. Migrations of chum and coho salmon enter Murray Creek in the fall. Low summer flows (1 cfs) compounded by agricultural pollution may be limiting factors in this stream with respect to fishery production. [4] This stream has been recommended for closure to out-of-stream consumptive use. A small series of lakes and beaver ponds provides important waterfowl habitat in this drainage. [17] The lower .3 miles of Murray Creek is considered to have excellent potential for stream rehabilitation for steelhead spawning and rearing. [17-9]

Horn Creek flows into the Nisqually at RM 25.5. This stream drains an agricultural area of about 15 square miles and has a length of about 5.5 miles. Both chum and coho salmon are known to use this stream. Limiting factors include agricultural water pollution and low flows. [14][4] The stream is presently closed to out-of-stream consumptive use. Horn Creek contributes very little surface water to the bypass reach of the Nisqually during the low flow summer period.

The bypass reach of the Nisqually River has been recommended for closure to out-of-stream consumptive use during the summer low flow period in order to alleviate the impacts of the man-made out-of-stream hydroelectric diversion of up to 720± cfs of water. [9][4]

The mid reach of the Nisqually River includes the section from the diversion of the Centralia Diversion ditch to the tail race of La Grande Dam at RM 42.5. Important tributaries include Lackamas Creek (RM 28), Tanwax Creek (RM 30), Toboton Creek, Powell Creek (RM 31), Ohop Creek (RM 37), and the Mashel River (RM 39.5).

Chinook, coho, chum, pink, and sockeye salmon all use this reach of the river while steelhead, cutthroat, and whitefish are also present.

Limiting factors include low summer flows, water temperatures and logjams within the tributaries. Poaching has also been listed by WDF as a problem within the Mashel River. [16][4]

Tanwax Creek joins the Nisqually River at RM 30.8 and drains an area of about 20 square miles. This stream has a length of 11.2 miles from its mouth to its source at Tanwax Lake. Coho, steelhead, and cutthroat are present. Limiting factors include low summer flows, stream blockage, and siltation. Low summer base flows drop down to 1.5 cfs during August, September, and October. This stream experiences a moderate amount of agricultural irrigation withdrawal.

Ohop Creek flows into the Nisqually River at RM 37.5 and has a drainage area of about 43 square miles. Ohop Creek flows through Ohop Lake. This stream has pink and coho salmon. Steelhead and cutthroat trout and pink, chum, chinook, and coho salmon are also present. Substantial agricultural irrigation occurs along Ohop Creek and the Ohop Valley. [17][14]

The Mashel River, one of the principal tributaries of the Nisqually River joins the main stem at RM 39.6 and has a drainage area of 83 square miles. Pink, chum, coho, and chinook salmon all utilize this stream. Steelhead and cutthroat trout are also found in good numbers within the Mashel and its tributaries. A minimum flow of 15 cfs was established on this stream in 1946. The Town of Eatonville's municipal water supply comes from several shallow Ranney wells within the main stem of the Mashel. A low head hydroelectric project is planned for the Little Mashel River. Low summer base flows commonly reach down to 10 cfs during July, August, and September. This stream has been recommended for closure to out-of-stream consumptive use by the Department of Game and Department of Fisheries and the Nisqually Tribe. [16][9] See Table 2, Pg. 25 for stream closure recommendations.

TABLE 2
Nisqually River Basin Planning Team
Stream Closure Recommendations

Stream	Department of Fisheries*		Department of Game		Nisqually Indian Tribe	
	Closure	Minimum Flow	Closure	Minimum Flow	Closure	Minimum Flow
Nisqually River (Estuary Reach)						
McAllister Creek	x		x		x	
Mounts Creek	x		x		x	
Nisqually River (Lower Reach)						
Muck (Creek and all tributaries)	x		x		x	
Clear Creek	x		x		x	
Thompson Creek						
Nisqually River (Bypass Reach)						
Yelm Creek	x		x		x	
Murray Creek			x		x	
Brighton Creek					x	
Horn Creek	x				x	
Harts Lake Outlet					x	
Nisqually River (Mid Reach)						
Tanwax Creek	x		x		x	
Lackamas Creek			x		x	
Toboton Creek			x		x	
Powell Creek			x			
Ohop Creek and all tributaries	x		x		x	
Mashell River and all tributaries	x		x		x	
Harts Lake and outlet					x	
Nisqually River (Upper Reach)						
Little Nisqually River		x		x		
East Creek						
Mineral Creek						
Tahoma						
Kautz						
Catt Creek						

*No formal stream closure recommendations provided as of August 11, 1980.

Wildlife Resources

The Nisqually River Basin is relatively rich in wildlife resources. This region is inhabited by a great variety of birds, mammals, and fishes. Of special interest to the Instream Resources Protection Program are those species that are highly dependent on stream flows, lake levels, and the associated riparian habitat. Species found within the basin that are of high economic and recreational value to the people of Washington State include trout, steelhead, water birds and waterfowl, upland game birds, song birds, raptors (birds of prey), and big game animals. [9]

Several wildlife species are heavily dependent on the maintenance of adequate numbers of fish for their livelihood. Good examples are the threatened northern bald eagle and the osprey. Both of these species are present within the Nisqually River Basin and a brief discussion is presented to alert the reader to the need for maintaining adequate resting and rearing river and lake habitat.

Two nesting pairs of bald eagles (four adult birds) are known to nest along the lower reach of the Nisqually River and at Anderson Island.* These "local" nesting bald eagles seem to be somewhat tolerant of human disturbance according to local observers. Biologists have observed wintering bald eagles in greater abundance during the fall and winter salmon spawning period. Up to 24 were counted feeding on spawned-out salmon on Muck Creek in 1978. The resident eagles may be heavily dependent on the late spring migration of steelhead trout. Many of the basin's lakes also provide feeding habitat for eagles and ospreys with sightings on Silver, Rapjohn, and Tanwax lakes occurring in winter months. [17]

Ospreys are known to nest within the Nisqually River Basin at Alder Dam and at Fiander Lake. These birds are almost totally dependent on fish for food. The Audubon Society considers the osprey to be even rarer in Washington State than the bald eagle. [18]

Other threatened or rare species found within the basin include the spotted owl and the peregrine falcon. Falcons are sighted in the Nisqually River estuary during winter months while the spotted owls favor the old growth timber areas associated with riparian habitat near Eatonville, Longmire, and the Mt. Rainier National Park.

Great Blue Heron rookeries are found near the Nisqually delta and are dependent on riparian habitat for survival. These herons appear to be highly dependent on the Nisqually Delta estuary as a food resource during the nesting season. Up to 25 nests have been counted at this location. The site is presently protected from logging disturbances by the U.S. Army.

*Anderson Island is located immediately north of the Nisqually Reach.

The Nisqually estuary is considered to be "internationally important to migratory birds." The Nisqually estuary serves as habitat for 165 species of waterfowl and other birds. It has been registered as a National Natural Landmark by the United States Department of Interior. The Nisqually Delta is one of the more important waterfowl hunting areas in Puget Sound. Hunter success ratios in the delta were higher than other areas of the state during 1979. *[9] McAllister Creek forms an integral part of the Nisqually Delta and is located along its western flank. A very rare sedge (Carex interrupta) occurs in the Nisqually Delta and McAllister Creek. The sedge has a narrow range of requirements and could be affected by changes in the water regime. [9]

An important mineral spring is located on the eastern flank of the estuary that is important to migrating band-tailed pigeons. Heavy hunting pressure occurs here during the first week in September each year.

Mounts Creek, located on the eastern flank of the Nisqually estuary, provides an important waterfowl feeding and resting area along its lower estuary. Several commercial duck clubs are located along its banks. The Tacoma Gun Club has recently been purchased by the USFWS and is no longer open for hunting. The upper Mounts Creek area has a high potential for suburban development.

Fall waterfowl populations in the Nisqually River estuary commonly exceed 20,000 waterfowl during October. Principle species include baldpate (American widgeon), pintail, teal, mallard, and coots.

Wood ducks nest and rear within many of the basin's streams and ponds. The local nesting population on Ft. Lewis was increased by 200 percent by the recent Department of Army wood duck nest box program. Wood ducks are heavily dependent on riparian zones and adequate lake and pond levels for their survival during the nesting and rearing season. Nisqually and Chambers lakes are popular wood duck concentration points in early Fall.

It is estimated that 8,500 ducks are produced in the Nisqually Basin each year.

Good populations of black-tailed deer, elk, and black bear are also present within the Nisqually River Basin. Both elk and bear are known to favor riparian habitat during the warm summer months. Black bears are well known for their taste for spawning salmon and steelhead trout.

Other wildlife species of special concern which occur in the Nisqually Basin include the western grey squirrel (Sciurus griseus), fisher (Martes pennanti), wolverine (Gulo gulo), grey wolf (Canis lupus), Cascade red fox (Vulpes vulpes cascadenis), and spotted owl (Strix occidentalis). A large number of rare plants occur in the Nisqually Basin, according to the Washington Natural Heritage Program. [9]

*Opening day hunter bag surveys taken in October 1979.

Fur bearing mammals occurring within the riparian areas of the Nisqually River Basin include beaver, muskrat, mink, river otter, and raccoon. All of these species depend to a great extent upon riparian habitat for their survival. Beaver are especially important in that the ponds created by these animals provide valuable fish and waterfowl habitat.

Recreation, Scenic, and Aesthetic Uses of Water

Recreation values within the Nisqually River Basin are very high due to its natural environmental attributes. Principal attractions include the Mt. Rainier National Park, the rivers, streams, and lakes, and the estuary and wildlife refuge.

Mt. Rainier National Park is considered to be a recreation area of national significance. Thousands of visitors spend their vacations hiking, fishing, and camping within this unique natural area. Winter sports are also popular in the vicinity of Paradise Lodge and Longmire. [6]

Wildlife, including elk, deer, mountain goat, and bear, plus high summer bird populations are big attractions to park visitors each summer. Fishing, although somewhat restricted, also provides many hours of recreation enjoyment.

Paramount of all park attractions, however, are the magnificent scenic and aesthetic qualities of the park. During clear weather, the various views of Mt. Rainier and its numerous glaciers and peaks are paralleled in the Pacific Northwest. Mt. Rainier may be the most photographed mountain in North America, according to some local photographers. The National Park Service continues to stress nonconsumptive recreational use of this unique park area in order to provide a high quality of outdoor recreational experience to the thousands of park visitors in future years.

Moving westward from Mt. Rainier National Park, the recreationalist has a choice of numerous lakes and streams to fish, boat, and camp. In recent years, Northwest Trek, a wildlife park, has been developed near Eatonville. Mineral Lake and Alder Reservoir also attract fishermen and boaters each summer. Both the main stem of the Nisqually River and the Mashel River offer many hours of recreational opportunities for trout and steelhead fishing. The mid and lower reach of the Nisqually River are very popular for drift boat, canoeing, and jet boat steelhead fishing. Approximately 35 miles of the Nisqually River are considered suitable for canoeing, kayaking, and boating. Scenic and aesthetic qualities of the Nisqually River contribute to the basin's overall attractiveness.

The numerous lowland lakes offer good recreational opportunities for warm water and trout fishing. Favorite lakes include Silver, Tanwax, Ohop, Harts, Clear, Mineral, and St. Clair. Many of these lakes are being rapidly developed for summer home recreational use. Several Department of Game-managed public fishing and hunting access areas are located within this sector also.

The Nisqually River Delta and Nisqually Wildlife Refuge offer good opportunities for nonconsumptive wildlife viewing. Wintering waterfowl populations attract many bird watchers to the National Wildlife Refuge each winter. Waterfowl hunting in the nearby delta estuary is also popular during fall and winter. Trails in the area have recently been upgraded to facilitate hikers and sightseers. [20]

The basin is rich in historical and archeological resources. The early Hudson Bay Post of Fort Nisqually is located at DuPont and it dates from the late 1830s. Early homesteads and archaeological sites are also found throughout the basin. McAllister Creek is the site of the signing of the Medicine Creek Treaty in 1854 between Governor Stevens and the Puyallup, Nisqually, and Squaxin Island tribes. Much of the mid and lower Nisqually River is considered an area of cultural significance to the nearby Nisqually Indian Tribe. [17] The Nisqually Tribe is heavily dependent on water resources for its economic livelihood.

Future additional water-related recreational opportunities will depend to a large degree upon acquisition of additional lakeside, streamside, and saltwater sites. Public access remains a problem in some areas due to vandalism, trespass, and littering. Good landowner and recreationist relationships are essential for future public use of private lands within the Nisqually River Basin. The future demand for recreational water use will continue to grow at a rapid rate due to the basin's close proximity to the Puget Sound metropolitan area. [21]

VI. OTHER WATER USES AND RELATED ASPECTS

Hydroelectric

Tacoma Department of Public Utilities' Nisqually hydroelectric project, located on the Nisqually River, consists of two dams, each with its own associated powerhouse and reservoir. LaGrande Dam is located at river mile 42.4. Alder Dam is located approximately 1.5 miles upstream at river mile 44.2, and diverts water to a powerhouse located at river mile 40.8. The river is normally totally dewatered between the dam and the powerhouse. [12]

LaGrande project was completed in 1912 and included four 4,000 kilowatt (KW) horizontal units which were later rewound, increasing the capacity to 6,000 KW per unit. In 1945 a 40,000 KW vertical unit was added. LaGrande Dam is of the concrete gravity type and is 500 feet long and 217 feet high with the normal full reservoir elevation at 935 feet above mean sea level. The surface area of the reservoir is 45 acres with the gross content of 2,700 acre-feet and the usable storage of 1,000 acre-feet with 25 feet of reservoir draft. [12]

The Alder project was completed in 1945 and the dam is 330 feet high with a crest length of 1,000 feet. The powerhouse has two 25,000 KW vertical generating units. Alder Reservoir has a surface area of 3,065 acres and gross storage of 231,900 acre-feet and a usable storage of 179,660 acre-feet with a drawdown of 93 feet. The full reservoir elevation is 1,207 feet above mean sea level. [12] Tacoma City records indicate the annual average flow from the projects to be 1,436 cfs with the maximum flow of 27,100 cfs occurring December 4, 1975.

At the present time, Tacoma City Light is in the process of selecting a consultant to evaluate the economics of (1) upgrading the turbines of the four small units at LaGrande; (2) replacing the four units with single larger unit. [12]

In 1928, the City of Centralia initiated construction of its hydroelectric facility on 'the Nisqually River and completed the project in October of 1930. The chief physical items in the facility were (a) a diversion dam located at river mile 26.2 and intake works on the Nisqually River approximately six miles southeast of the town of Yelm; (b) an unlined canal which extends in a general northwesterly direction a distance of approximately nine miles along the south side of the Nisqually River; (c) a forebay, penstock, and powerhouse located adjacent to the river at river mile 12.7 on the south bank approximately three miles northwest of Yelm; (d) and a transmission line extending in a general southeasterly direction, a distance of approximately 27 miles from the powerhouse to Centralia. [13]

At that time, the generating equipment consisted of two reaction type vertical turbines - each 3,100 hp, 514 rpm manufactured by the Pelton Water Wheel Company driving two Westinghouse 2,400 volt, 60 cycle, 3 phase generators each of 2,500 KW capability at 80 percent power factor. [13]

During this period (1930-1955) water flow in the canal required for full 5,000 KW production was approximately 350 cfs.

In 1955, the City of Centralia completed expansion of its existing hydroelectric facilities to augment the city's present power supply. [13]

This final expansion of the hydroelectric facility increased the demonstrated capability of the three units to 10,400 KW at 720 cfs. [8]

In 1975, the city contracted through General Electric to rewind numbers 1 and 2 machines thus insuring full output of the Yelm plant. Due to the fact that: this is a run of the river facility and has no storage for water, the full resources of this plant have been utilized. No further upgrading of power output can be expected from the plant. Centralia is concerned for the protection of the side flow of the Mashel, Tanwax, Ohop, and any other stream below Tacoma City Light's LaGrande and Alder dams. [13]

Centralia City Light, for the past two years and at the present time, is taking part in an ongoing river flow and fish study on the Nisqually River with the Department of Fisheries and Game Department, the Nisqually Indian Tribe, Tacoma City Light, and the Federal Energy Regulatory Commission. [13]

The potential for future development of small low-head hydro projects is recognized on the Little Mashel River. The City of Eatonville is presently conducting a feasibility study of one such project located on the Little Mashel River. [3] This project is located at a natural 60-foot waterfall about 1.5 miles from the confluence of the Mashel and Little Mashel rivers. It is anticipated that this project could produce up to 1.5 MW of electricity during eight months of the year. [22]

Municipal and Industrial

Municipal and industrial water use is dominated by the City of Olympia's, McAllister Springs which is located near the headwaters of McAllister Creek. This important surface water resource services approximately 36,000 people located in Olympia, Tanglewilde, and Thompson Place. The maximum capacity of this facility is presently 18 million gallons per day although the average use is 6 MGD. The Olympia service area is projected to serve 70,000 persons by the year 2000. With improved transmission, the maximum production could be increased to 30 MGD. [1] Other municipal water supply systems located within the Nisqually Basin include wells supporting Yelm, Nisqually Valley, Lacey, and Eatonville. Industrial use of water remains very low within the basin.

Water rights are estimated to cover in excess of 800 individual water systems, however, adequate surface and ground water resources are thought to be available within the basin. [1] Annual recharge has been estimated to be around 200,000 acre-feet.

Total water requirements are expected to exceed 88 million gallons per day by the year 2020. Ground water is expected to supply 35 percent of the projected water needs. [1]

Irrigation

The Nisqually River Basin, although not blessed with an abundance of good agricultural soils, presently has approximately 23,500 acres of potentially irrigable lands. Something less than 6,000 acres are currently under irrigation. [1]

The water supply for present and potential irrigation is obtained mainly from wells. An abundant supply of ground water is known to exist throughout many areas of the lowlands within the Nisqually River Basin. Principal areas of ground water irrigation use include the vicinity of Yelm and also near Harts Lake and the adjacent Wilcox Farm. Heavy irrigation use also occurs within the Ohop, Tanwax, and Horn creek tributaries. [17] Portions of the lower Nisqually Valley are also heavily irrigated.

Existing water rights for irrigation amount to about 32 cfs for 3,400 acres in the Nisqually River Basin (1966). Gross withdrawal of ground water resources has been estimated at 4,500 acre-feet annually. [1] Most irrigation within the Nisqually Basin is in support of livestock operations. Approximately 75 percent of the irrigated cropland is in forage crops. [23] Numerous horticulture crops including sweet corn, snap beans, and strawberries are also grown in addition to tree seedlings, nursery stock, and Christmas trees. [1] Irrigated agriculture conducted in support of livestock farming may increase slightly over the next 20 years if market conditions remain strong; however, no large-scale increase is projected. (Areas of greatest potential include the South Prairie near Yelm.) [1]

Farming includes only about 6,500 acres and much of this is in non irrigated pasture lands. The development of agricultural lands is restricted by the limited availability of suitable soils. Market conditions have generally riot favored small-scale subsistence agriculture in recent decades. [5]

The last agriculture census for Thurston County lists the gross market value of agriculture products at \$1,000,000. About 2,532 people are employed full-time in agriculture and another 1,500 are employed in the forest products industry. (1977)

VII. ALTERNATIVES

Many alternative courses of action were considered with respect to the Nisqually River Basin Instream Resources Protection Program. Some of the options considered for the Instream Resources Protection Program included the following:

- A. No action; Defer Nisqually River Basin Instream Resources Protection Program until a later date.
- B. Establish a total closure of the entire basin to out-of-stream consumptive use until more data is available.
- C. Establish a minimum flow and/or closures according to the data presented by the planning team and the FERC Nisqually River Basin Committee.
- D. Defer preparation of the Nisqually Program until a final minimum flow decision has been established by the courts.
- E. Develop a Nisqually River Basin Plan.
- F. Establish a closure to further consumptive use on the bypass and mid reaches of the Nisqually River. Impose a minimum flow on the lower reach during the entire year.
- G. Withdraw certain sections of the Nisqually River from further consumptive appropriation pending development of adequate data to reach a final conclusion on instream flows.

The option chosen that accomplished the objectives and purpose of the overall instream program in a timely manner was course of action "F." This option establishes minimum flows and closures in order to insure that the protection of the instream resources are maintained.

The advantages of this option include the timely development of minimum stream flows and closures to insure the protection of the instream resources.

The "no action" option was seriously considered but it was recognized that the instream resources within the Nisqually River Basin are in need of protection in the near future and that any delays could be detrimental to the instream resources. The advantage of this option includes avoidance of potential controversy.

Option "B – Total Closure" was not considered necessary due to the adequate amount of data pertaining to the fish and water resources of the Nisqually River. This river has been the subject of detailed studies by Nisqually Indian tribal biologist, USFWS, U.S. Corps of Engineers,

Department of Game, Department of Fisheries, and Tacoma Department of Public Utilities, Centralia City Light, and the Department of Ecology.

Course of Action "E – Nisqually River Basin Plan was considered but not accepted due to the longer completion time required for the basin plan (up to five years). This option does involve a more comprehensive water resource allocation program than exists with the Instream Resources Protection Program. The Basin Plan would involve making an estimate of all water required for instream and out-of-stream consumptive use and additionally a program to allocate the beneficial uses of water.

VIII. Present Administrative Status of Streams and Streams and Lakes, WRIA 11.

Stream	Tributary to	Action	Dates
Easton Creek SE¼NW¼ Sec 6, T17N, R1E	Lake St. Clair	Closure	12/1/53
Harts Lake and outlet streams SW¼SE¼ Sec 1, T16N, R2E	Nisqually River	Low Flow (0.5 cfs bypass)	10/7/44
Horn Creek SW¼NE¼ Sec 1, T16N, R2E	Nisqually River	Closure	7/22/74
Lackamas Creek SE¼SE¼ Sec 13, T16N, R2E	Nisqually River	Low Flow (0.5 cfs bypass)	2/5/73
Little Mashel Creek SE¼NW¼ Sec 22, T16N, R4E	Mashel River	Low Flow (15.0 cfs bypass)	11/15/49
Mashel River NE¼SW¼ Sec 29, T16N, R4E	Nisqually River	Low Flow (15.0 cfs bypass)	11/19/46
Midway Creek NE¼NE¼ Sec 25, T16N, R4E	Little Mashel River	Closure	4/28/64
Muck Creek SW¼SW¼ Sec 36, T18N, R1E	Nisqually River	Closure (No Domestic)	5/26/48
Ohop Creek SW¼NE¼ Sec 25, T16N, R3E	Nisqually River	Closure	2/15/52
Ohop Lake NE¼SE¼ Sec 10, T16N, R1E	Ohop Creek	Lake Level (523 ft MSL)	3/25/66
Thompson Creek SE¼NE¼ Sec 11, T17N, R1E	Nisqually River	Low Flow (1.0 cfs bypass)	4/16/57
Toboton Creek SW¼SW¼ Sec 19, T16N, R3E	Nisqually River	Not to exceed (½ normal flow)	1/19/48
Unnamed ditch NE¼NW¼ Sec 12, T17N, R2E	Murray Creek	(½ low flow bypass)	4/5/51
Unnamed Stream SW¼NW¼ Sec 11, T15N, R4E	Alder Lake (Nisqually River)	Closure	4/28/64
Unnamed Stream SW¼SE¼ Sec 17, T17N, R2E	Centralia Canal (Nisqually River)	Low Flow (0.75 cfs bypass)	11/19/51
Unnamed Stream SE¼SE¼ Sec 27, T17N, R2E	Nisqually River	Low Flow (0.50 cfs bypass)	12/6/50
Yelm Creek SW¼SW¼ Sec 12, T17N, R1E	Nisqually River	Closure	8/7/51

IX. PROPOSED ADMINISTRATIVE STATUS

The department, based on information available proposes to establish minimum flows on the Nisqually River and new closures on the Mashel River, McAllister Creek, Mounts Creek, (Red Salmon Creek) Clear Creek, and Tanwax Creek, Lake St. Clair, Toboton Creek, Lackamas Creek, Murry Creek, bypass reach, and mid reach of the Nisqually River in order to insure that the instream resources are protected. See Figures 7 and 7, Pages 37 and 38.

The Department of Ecology concludes that a network of four control stations will provide adequate control over future diversions from the remaining open surface water resources within the basin.

Control Station	Gage No.	River Mile	Stream Management Reach
Nisqually River	New gage	4.3	From influence of mean annual high tide at low base flow levels to the outlet of the Centralia City Light Power Plant.
Nisqually River	12-0895-00	21.8	From outlet of the Centralia City Light Power Plant at river mile 12.6 to Centralia City Light Power Canal diversion at river mile 26.2, including all tributaries.
Nisqually River	12-0884-00	32.6	From the Centralia City Light Power canal diversion at river mile 26.2 to gage 12-0865-00 near the La Grande Power Plant, including all tributaries except the Mashel River.
Nisqually River	12-0825-00	57.8	From gage 12-0865-00 near the La Grande Power Plant to the headwaters including all tributaries.
Mashel River	12-0870-00	3.25	From mouth upstream to the headwaters including all tributaries.

Ground water resources will be managed in such a way as to protect the streams proposed for closure and minimum flows.

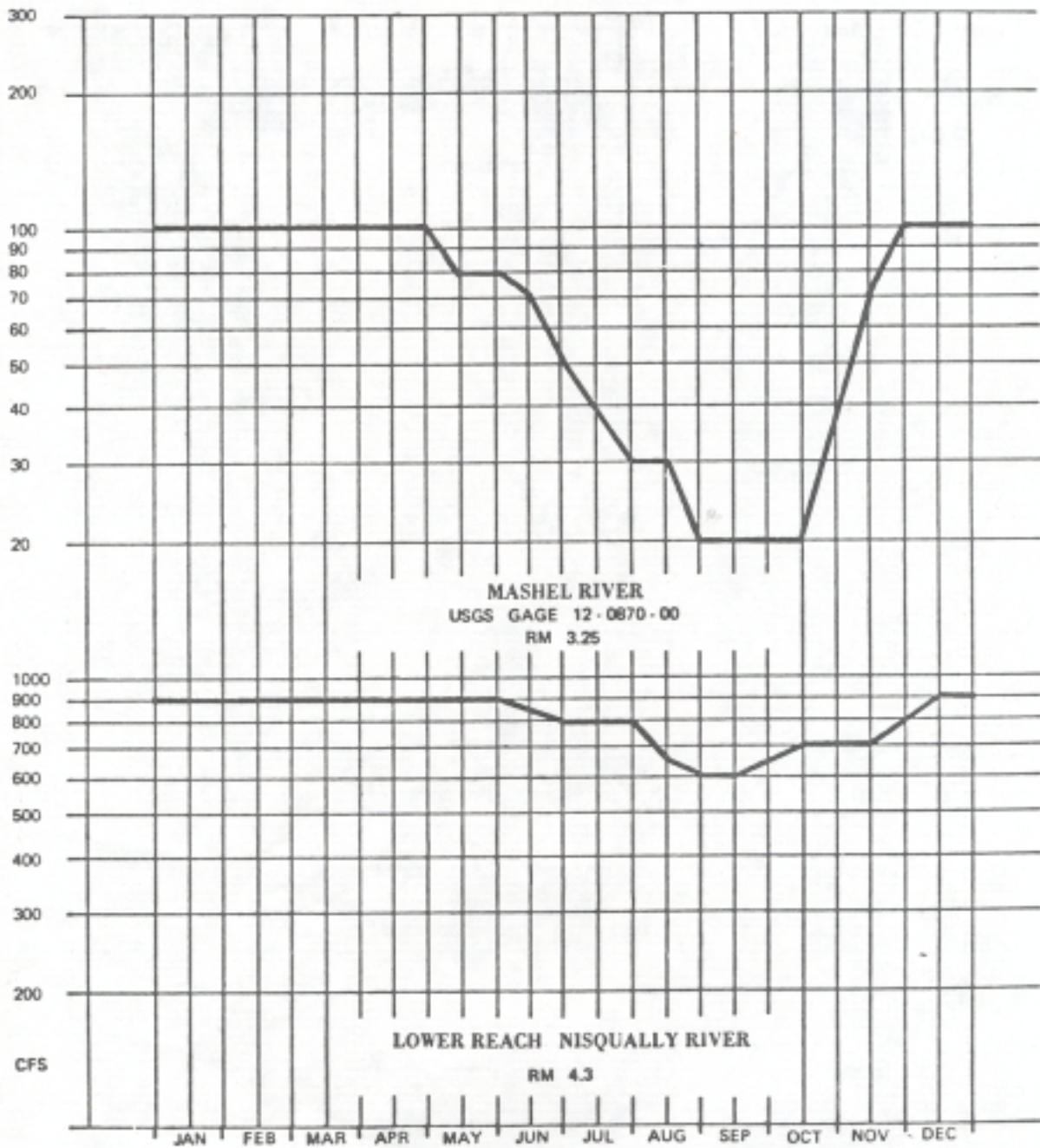


FIGURE 7. Instream Flow Hydrograph

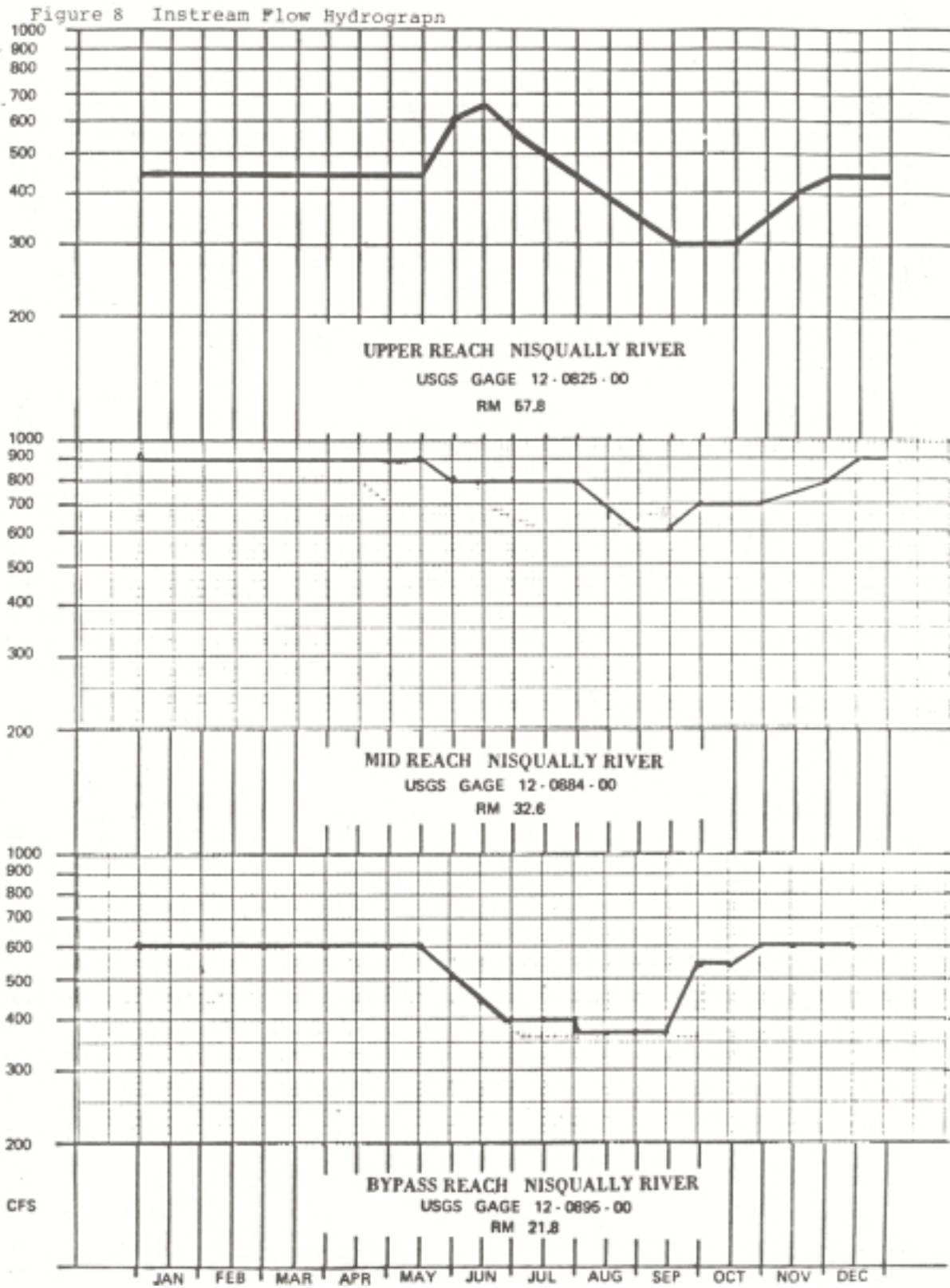


FIGURE 8. Instream Flow Hydrograph

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APPENDIX A

CHAPTER 173-511 WAC

ADOPTED
January 27, 1981

**Chapter 173-511 WAC
INSTREAM RESOURCES PROTECTION PROGRAM – –
NISQUALLY RIVER BASIN, WATER RESOURCE
INVENTORY AREA (WRIA) 11**

<p>WAC 173-511-010 173-511-020 173-511-030 173-511-040 173-511-050 173-511-060 173-511-070 173-511-080 173-511-090 173-511-100</p>	<p>General provision. Purpose. Establishment of instream flows. Surface water source limitations to further consumptive appropriations. Ground water. Lakes. Exemptions. Future rights. Enforcement Regulation review.</p>	<p>1971), chapter 90.22 RCW (Minimum Water Flows and Levels), and in accordance with chapter 173-500 WAC (Water Resources Management Program). [Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-04-028 (Order DE 80-42), § 173-511-010, filed 2/2/81.]</p>
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WAC 173-511-010 General provision.
These rules apply to waters within the Nisqually River Basin, WRIA 11, as defined in WAC 173-500-040. This chapter is promulgated pursuant to chapter 90.54 RCW (Water Resources Act of

WAC 173-511-020 Purpose. The purpose of this chapter is to retain perennial rivers, streams, and lakes in the Nisqually River Basin with instream flows and levels necessary to provide protection for wildlife, fish, scenic, aesthetic, environmental quality. [Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-04-028 (Order DE 80-42), § 173-511-020, filed 2/2/81.]

WAC 173-511-030 Establishment of instream flows. (1) Stream management units and associated control stations are established as follows:

Stream Management Unit Information

Control Station No. Stream Management Unit Name	Control Station Location, River Mile and Section, Township and Range	Affected Steam Reach
New gage Nisqually River	4.3 9, 18N, 1E	From influence of mean annual high tide at low base flow levels to the outlet of the Centralia City Light Power Plant
12-0895-00 Nisqually River	21.8 28, 17N, 2E	From outlet of the Centralia City Light Power Plant at river mile 12.6 to Centralia City Light Power Canal diversion at river mile 26.2, including all tributaries.
12-0884-00 Nisqually River	32.6 21, 16N, 3E	From the Centralia City Light Power canal diversion at river mile 26.2 to gage 12-0865-00 near the La Grande Power Plant, including all tributaries except the Mashel River.
12-0825-00 Nisqually River	57.8 29, 15N, 6E	From gage 12-0865-00 near the La Grande Power Plant to the headwaters including all tributaries.
12-0870-00 Mashel River	3.25 11, 16N, 4E	From mouth upstream to the headwaters including all tributaries.

173-511-030 Instream Resources Protection Program -- Nisqually River Basin, Water Resource Inventory Area (WRIA) 11

(2) Instream flows established for the stream management unit described in WAC 173-511-030(1) are as follows:

Instream Flows in the Nisqually River Basin
(in cubic feet per second)

Month	Day	Lower Reach of the Nisqually River, USGS Gage		Bypass Reach of the Nisqually River, USGS Gage		Mid Reach of the Nisqually River, USGS Gage	
		12-*	RM 4.3	12-0895-00	RM 21.8	12-0884-00	RM 32.6
January	1		900		600		900
	15		900		600		900
February	1		900		600		900
	15		900		600		900
March	1		900		600		900
	15		900		600		900
April	1		900		600		900
	15		900		600		900
May	1		900		600		900
	15		900		600		900
June	1		900	500	(closed)	800	(closed)
	15		850	450	(closed)	800	(closed)
July	1		800	400	(closed)	800	(closed)
	15		800	400	(closed)	800	(closed)
August	1		800	370	(closed)	800	(closed)
	15		800	370	(closed)	650	(closed)
September	1		600	370	(closed)	600	(closed)
	15		600	370	(closed)	600	(closed)
October	1		700	550	(closed)	700	(closed)
	15		700	550	(closed)	700	(closed)
November	1		700	600		700	
	15		700	600		700	
December	1		800	600		800	
	15		900	600		900	

*New gage to be established

Month	Day	Upper Reach of the Nisqually River USGS Gage		Mashel River USGS Gage	
		12-0825-00	RM 57.8	12-0870-00	RM 3.25
January	1		450		100
	15		450		100
February	1		450		100
	15		450		100
March	1		450		100
	15		450		100
April	1		450		100
	15		450		100
May	1		450		100
	15		450		80
June	1		600	80	(closed)
	15		650	70	(closed)
July	1		550	50	(closed)
	15		500	40	(closed)
August	1		450	30	(closed)
	15		400	30	(closed)
September	1		350	20	(closed)
	15		300	20	(closed)
October	1		300	20	(closed)
	15		300	20	(closed)
November	1		350	40	
	15		400	70	
December	1		450	100	
	15		450	100	

**Instream Resources Protection Program -- Nisqually River Basin, Water Resource Inventory Area (WRIA)
11 173-511-030**

(3) Instream flow hydrographs, as represented in the document entitled "Nisqually River Basin Instream Resource Protection Program," shall be used for identification of instream flows on those days not specifically identified in WAC 173-511-030(2). [Statutory Authority: Chapters 90.22 and 90.54 RCW 81-04-028 (Order DE 80-42). § 173-511-030, filed 2/2/81.]

WAC 173-511-040 Surface water source limitations to further consumptive appropriations.
(1) The department has determined that (a) certain streams exhibit low summer flows or have a potential for going dry thereby inhibiting anadromous fish passage during critical life stages, and (b) historic flow regimes and current uses of certain other streams indicate that no water is available for additional appropriation. Based upon these determinations the following streams and lakes are closed to further appropriation for the periods indicated:

New Surface Water Closures

<u>Stream of Lake</u> Section, Township, and Range of Mouth or Outlet	Tributary to	Period of Closure
Mashel River NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 29, T16N, R4E and all tributaries	Nisqually River	June 1 – Oct. 31
Red Salmon Creek (Mounts Creek) NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec 33, T19N, R1E and all tributaries	Nisqually River	April 1 – Oct. 31
Clear Creek NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec 21, T18N, R1E and all tributaries	Nisqually River	April 1 – Oct. 31
Tanwax Creek NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec 20, T16N, R3E and all tributaries	Nisqually River	April 1 – Oct. 31
McAllister Creek (except Medicine Creek) NW $\frac{1}{4}$ N $\frac{1}{4}$ Sec 6, T18N, R1E and all tributaries	Puget Sound	all year
Lake Saint Clair SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec 6, T17N, R1E		all year
Toboton Creek (above Hopson Road) SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 19, T16N, R3E and all tributaries	Nisqually River	April 1 – Nov. 30
Lackamas Creek SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec 13, T16N, R2E and all tributaries	Nisqually River	April 1 – Nov. 30
Murry Creek NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec 16, T17N, R2E	Nisqually River	April 1 – Nov. 30
Bypass Reach Nisqually River NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 11, T17N, R1E and all tributaries	Puget Sound	June 1 – Oct. 31
Mid Reach Nisqually River SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec 1, T16N, R2E	Puget Sound	June 1 – Oct. 31

173-511-030 Instream Resources Protection Program – Nisqually River Basin, Water Resource Inventory Area (WRIA) 11

(2) The following stream and lake low flows and closures are adopted confirming surface water source limitations previously established administratively under the authority of chapter 90.03 RCW and RCW 75.20.050.

Existing Surface Water Source Limitations
Current Administrative Status of Streams and Lakes
Nisqually Basin, WRIA 11

Stream	Tributary to	Action	Dates
Easton Creek SE¼NW¼ Sec 6 T17N, R1E	Lake St. Clair	Closure	12/1/53
Harts Lake and outlet streams SW¼SE¼ Sec 1, T16N, R2E	Nisqually River	Low Flow (0.5 cfs bypass)	10/7/44
Horn Creek SW¼NE¼ Sec 1, T16N, RWE	Nisqually River	Closure	7/22/74
Muck Creek and all tributaries SW¼SW¼ Sec 36, T18N, R1E	Nisqually River	Closure	5/26/48
Ohop Creek and all tributaries SW¼NE¼ Sec 25, T16N, R1E	Nisqually River	Closure	2/15/52
Ohop Lake NE¼SE¼ Sec 10, T16N, R1E	Ohop Creek	Lake Level (523 ft)	3/25/66
Thompson Creek and all tributaries SE¼NE¼ Sec 11, T17N, R1E	Nisqually River	Low Flow (1.0 cfs bypass)	11/19/51
Unnamed Stream and all tributaries SW¼NW¼ Sec 11, T15N, R4E	Alder Lake (Nisqually River)	Closure	4/28/64
Unnamed Stream and all tributaries SW¼SE¼ Sec 17, T17N, R2E	Centralia Canal (Nisqually River)	Low Flow (0.75 cfs bypass)	11/19/51
Unnamed Stream and all tributaries SE¼SE¼ Sec 27, T17N, R2E	Nisqually River	Low Flow (0.50 cfs bypass)	12/6/50
Yelm Creek and all tributaries SW¼SW¼ Sec 12, T17N, R1E	Nisqually River	Closure	8/7/51

[Statutory Authority: Chapters 90.22 and 90.54 RCW 81-04-028 (Order DE 80-42, § 173-511-040, filed 2/2/81.)]

WAC 173-511-050 Ground water.

Future ground withdrawal proposals will not be affected by this chapter unless it is verified that such withdrawal would clearly have an adverse impact upon the surface water system contrary to the intent and objectives of this chapter. [Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-04-028 (Order DE 80-42), § 173-511-050, filed 2/2/81.]

WAC 173-511-060 Lakes. In future permitting actions relating to withdrawal of lake waters, lakes and ponds shall be retained substantially in their natural condition. Withdrawals of water which would conflict therewith shall be authorized only in situations where it is clear that overriding considerations of the public interest will be served. [Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-04-028 (Order DE 80-42), § 173-511-060, filed 2/2/81.]

WAC 173-511-070 Exemptions.

(1) Nothing in this chapter shall affect existing water rights, riparian, appropriative, or otherwise existing on the effective date of this chapter, nor shall it affect existing rights relating to the operation of any navigation, hydroelectric or water storage reservoir or related facilities.

(2) If, upon detailed analysis, appropriate and environmentally sound proposed storage facilities are found to be compatible with this chapter, such facilities may be approved.

(3) Domestic use for a single residence shall be exempt from the provisions of this chapter; provided that, if the cumulative effects of numerous single domestic diversions and/or withdrawals would seriously affect the quantity of water available for instream uses, then only domestic in-house use shall be exempt if no alternative source is available.

(4) Stock-watering use, except that related to feedlots, shall be exempt from the provisions established in this chapter.

(5) Future rights for nonconsumptive uses may be granted. [Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-04-028 (Order DE 80-42), § 173-511-070, filed 2/2/81.]

WAC 173-511-080 Future rights. No rights to divert or store public surface waters of the Nisqually River Basin, WRIA 11, shall conflict with the purpose of this chapter as stated in WAC 173-511-020. [Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-04-028 (Order DE 80-42), § 173-511-080, filed 2/2/81.]

WAC 173-511-090 Enforcement. In enforcement of this chapter, the department of ecology may impose such sanctions as appropriate under authorities vested in it, including but not limited to the issuance of regulatory orders under RCW 43.27A.190 and civil penalties under RCW 43.83B.335. [Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-04-028 (Order DE 80-42), § 173-511-090, filed 2/2/81.]

WAC 173-511-100 Regulation review. The rules in this chapter shall be reviewed by the department of ecology at least once in every four years. In addition, the department may review this regulation whenever requested by private, public, state, and federal agencies. [Statutory Authority: Chapters 90.22 and 90.54 RCW. 81-04-028 (Order DE 80-42), § 173-511-100, filed 2/2/81.]

APPENDIX B

GLOSSARY

GLOSSARY

ACRE-FOOT: A unit for measuring the volume of water or sediment. It is equal to the amount of water needed to cover one acre of land with water one foot deep. This is 43,560 cubic feet, or 325,851 gallons.

ALLOCATION: The process of legally dedicating specific amounts of the water resource for application to beneficial uses by means of water rights.

AMBIENT: The natural conditions (or environment) at a given place or time.

ANADROMOUS FISH: Fish that spend a part of their lives in the sea but ascend rivers at more or less regular intervals to spawn. Examples: Salmon, some trout, shad, and striped bass.

AQUIFER: An underground bed or stratum of earth, gravel, or porous stone which contains water. A geological rock formation, bed, or zone that may be referred to as a water-bearing bed.

BASE FLOW: As defined in the Water Resources Act of 1971 (Ch. 90.54 RCW), base flows are the flows administratively established "necessary to provide for the preservation of wildlife, fish, scenic, aesthetic and other environmental values, and navigational values."

BIOCHEMICAL OXYGEN DEMAND (BOD): The amount of oxygen required to decompose a given amount of organic compounds to simple, stable substances within a specified time at a specified temperature. BOD serves as a guide to indicate the degree of organic pollution in water.

CLOSURE: Administrative measure to keep water resources from further appropriation for consumptive uses. Generally, domestic household use and normal stock watering are exempted from closure when there is no practicable alternate source of supply.

COLIFORM: Any of a number of organisms common to the intestinal tract of man and animals, used as an indicator of water pollution.

CONFLUENCE: A place where two or more streams meet; the point where a tributary joins the main stream; a fork.

CONSUMPTIVE USE: The amount of water used in such a way that it is no longer directly available. Includes water discharged into the air during industrial uses, or given off by plants as they grow (transpiration), or water which is retained in the plant tissues, or any use of water which prevents it from being directly available.

CONSUMPTIVE USE REQUIREMENT (crop): The amount of consumptive use for irrigation each year for a particular type of crop. Measured in acre-feet or feet per acre.

CONTROL STATION: Any streamflow measurement site at which a regulatory base flow has been established.

CUBIC FEET PER SECOND (cfs): A unit of measure for the rate of discharge of water. One cubic foot per second is the rate of flow of a stream where one square foot is flowing at one foot per second. It is equal to 448.8 gallons per minute.

DISCHARGE: In simplest form, discharge simply means outflow. The term can describe the flow of water from a faucet or from a drainage basin covering hundreds of square miles.

DISSOLVED OXYGEN: Amount of oxygen dissolved in water; reductions below saturation can be damaging to fish and fish eggs.

DISSOLVED SOLIDS: The total amount of dissolved material, organic and inorganic, contained in water or wastes. Excessive dissolved solids can make water unsuitable for industrial uses and/or unpalatable for drinking.

DIVERSION: The physical act of removing water from a stream or other body of surface water.

DRAINAGE AREA: The area of land drained by a stream, measured in the horizontal plane. It is the area which is enclosed by a drainage divide.

DRAINAGE BASIN: A part of the surface of the earth that is occupied by a drainage system consisting of a surface stream or a permanent body of water together with all tributary streams and bodies of impounded water (lakes, ponds, reservoirs, etc.).

EFFLUENT: A discharge or emission of a liquid or gas, usually waste material.

EMISSION: A discharge of pollutants into the atmosphere, usually as a result of burning or the operation of internal combustion engines.

ENDANGERED SPECIES: Any species which, as determined by the Fish and Wildlife Service, is in danger of extinction throughout all or a significant portion of its range other than a species of the class Insecta determined to constitute a pest whose protection would present an overwhelming and overriding risk to man.

ESCAPEMENT: Adult fish that "escape" fishing gear to migrate upstream to spawning grounds.

ESTUARY: Shallow coastal water, usually associated with the mouth of a river, including adjoining bays, lagoons, shallow sounds, and marshes where tidal effects are evident and fresh water and sea water mix.

FINGERLINGS: Fish whose size ranges from approximately one to three inches.

FLOOD: Any relatively high streamflow or an overflow that comes from a river or body of water and which causes or threatens damage.

FLOOD PLAIN: Lowland bordering a river, subject to flooding when stream overflows.

FRY: Young fish from the time of hatching to approximately one inch in size.

GAGING STATION: A particular location on a stream, canal, lake, or reservoir where systematic measurements are made on the quantity of water flow.

GROUND WATER: Water in the ground lying in the zone of saturation.

Natural recharge includes water added by rainfall, flowing through pores or small openings in the soil into the water table.

HABITAT: The natural abode of a plant or animal, including all biotic, climatic, and soil conditions, or other environmental influences affecting life.

HEAVY METALS: A group which includes all metallic elements with atomic numbers greater than 20, the most familiar of which are chromium, manganese, iron, cobalt, nickel, copper and zinc but also include arsenic, selenium, silver, cadmium, tin, antimony, mercury, and lead, among others.

HOLDOVERS: Fish that take up residence in reservoirs rather than completing migration to the sea; may complete migration the following year.

HYDRAULIC CONTINUITY: A cause and effect relationship between water under the ground with water standing or flowing on the surface.

HYDROGRAPH: A graph showing varying streamflow (or stream discharge) with respect to time during a year as determined at a specific cross-sectional location in the stream.

HYDROLOGIC CYCLE: The continual exchange of moisture between the earth and the atmosphere, consisting of evaporation, condensation, precipitation (rain or snow), stream runoff, absorption into the soil, and evaporation in repeating cycles.

IMPOUNDMENT: A body of water formed by confining and storing the water.

INSTREAM VALUE: The attitude of society towards the instream use of water for aesthetic, fish and wildlife, recreation, hydroelectric, and general environmental purposes.

NONCONSUMPTIVE USE: Use of water in a manner which does not consume the resource. Fishery, aesthetic, and hydropower uses are examples of nonconsumptive use.

PUBLIC INTEREST: The sense of local, county, or state values at a given point: in time.

PUBLIC WATERS: All waters not previously appropriated.

REARING AREA: The place where juvenile fish live. It must meet certain environmental requirements for food supply, cover, and temperature.

REDD: The spawning ground or rest of various fish.

RESERVATION: An approved priority claim to water for a future beneficial use.

RIPARIAN: Pertaining to the banks of streams, lakes, or tidewater.

RIVER BASIN: The total area drained by a river and its tributaries; watershed; drainage basin.

RUN: A group of fish that ascend a river to spawn.

RUNOFF: That part of precipitation which appears in surface streams. This is the streamflow before it is affected by artificial diversion, reservoirs, or other man-made changes in or on stream channels.

SALMONOID: Fish belonging to the family salmonidae, including salmon, trout, char, and allied freshwater and anadromous fishes.

SMOLT: An anadromous fish that is physiologically ready to undergo the transition from fresh to salt water; age varies depending on species and environmental conditions.

SMOLTIFICATION: The biological process whereby an anadromous fish becomes capable of undergoing the transition from fresh to salt water.

SPAWNING: The laying of eggs, especially by fish.

SPILLWAY: The channel or passageway around or over the dam through which excess water is spilled around the turbines.

STORAGE: Water naturally or artificially impounded in surface or underground reservoirs.

STORAGE RESERVOIR: A reservoir in which storage is held over from the annual high-water season to the following low-water season. Storage reservoirs which refill at the end of each annual high-water season are "annual storage" reservoirs. Those which cannot refill all usable power storage by the end of each annual high-water season are "cyclic storage" reservoirs.

STREAMFLOW: The discharge or water flow that occurs in a natural channel. The word discharge can be applied to a canal, but streamflow describes only the discharge in a surface stream course. Streamflow applies to discharge whether or not it is affected by diversion or reservoirs.

WATERSHED: The area from which water drains to a single point. In a natural basin, the area contributing flow to a given place on a stream.

APPENDIX C
PUBLIC COMMENTS

BLACK HILLS AUDUBON SOCIETY

P. O. Box 2524
Olympia, WA 98507

January 26, 1980



STATE OF
Washington
Dixy Lee Ray
Governor

DEPARTMENT OF GAME

600 North Capitol Way, GJ-11 Olympia, Washington 98504 206/753-5700

October 29, 1980

Mr. Robert Kavanaugh
Department of Ecology
St. Martins College
Lacey, Washington 98504

Dear Mr. Kavanaugh:

The Department of Game would like to see several revisions in the draft Nisqually River Basin Instream Resources Protection Program which you distributed on October 23.

We believe that draft flows for the bypass reach are inadequate for steelhead emergence between June 15 and July 15. After several years of studying the bypass reach, experienced fish biologists have determined that the minimum flow in the bypass reach should be 500 cfs through the end of July. Emergence is a critical phase in the life history of steelhead. The channel configuration in the bypass makes emergence flow a critical flow.

As stated in my report on instream resources of the Nisqually River basin, flaws are currently major limiting factors for salmonid production in Powell Creek, Murray Creek, Toboton Creek, and Lackamas Creek. The Department of Game recommends closure of these streams to further consumptive appropriation of water. Specific instream flow recommendations for these streams are as follow as

	Spawning (1 Dec - 30 Jun)	Rearing (15 Jul - 15 Nov)
Powell Creek	40 cfs	10 cfs
Murray Creek	12 cfs	2 cfs
Toboton Creek	37 cfs	8 cfs
Lackamas Creek	28 cfs	6 cfs
unnamed stream	3 cfs	0.5 cfs

Existing surface water limitations for Toboton Creek and the unnamed ditch tributary to Murray Creek are inadequately defined as "1/2 low flow bypass." This limitation is vague and unenforceable. Minimum flows for these streams are recommended above.

The need for closure of Murray Creek and its unnamed tributary ditch was obvious when I visited Murray Creek on October 28. Murray Creek between Roy and McKenna is indicated on the U.S.G.S. topographic map as being a permanent rather than an intermittent stream, yet its channel was dry. There can be no clearer case of flow being a limiting factor for fish production.

Glen H. Fiedler
Acting Assistant Director
Office of Water Programs
Department of Ecology
Olympia, WA 98504

Dear Mr. Fiedler:

From its inception in 1973, Black Hills Audubon Society actively supported the comprehensive conservation plan for the Nisqually River known as "Glacier to the Sea". The chapter continues its keen interest in preserving this remarkable river basin as a living ecosystem and valuable natural resource. We are therefore pleased that the Department is taking this step toward protection of the basin's instream resources.

As recognized by the proposed now code, the waters in some tributary streams are already over-allocated. In addition, some established uses of the water resources have impaired the basin's vitality, caused environmental degradation, or seriously conflicted with competing uses. For these reasons, comprehensive assessment, planning and regulation are not only desirable, but necessary.

Black Hills Audubon Society approves the provisions of WAC 173-511 as proposed, and urges its adoption. In doing so we also commend Mr. Robert Kavanaugh who has throughout the entire process kept us fully informed and provided every opportunity for our participation.

Sincerely yours,
Jack Davis
Jack Davis, Conservation Chairman

Mr. Robert Kavanaugh
October 29, 1980
Page Two

South Bound Fly Fishers
P. O. Box 2792
Olympia, WA 98507
November 30, 1980

I sampled Toboton Creek on October 28 and found that juvenile coho salmon about 8 cm long were very abundant in this stream. I observed but was unable to capture a larger (20± cm) cutthroat trout. I was unable to sample a section of the stream that appeared to be good steelhead habitat. Passage of adult salmonids would clearly be restricted by low flows; the observed flow of 3-5 cfs would probably block or restrict passage. The observed flow appeared to be less than the recommended flow, which implies that rearing flow is now a limiting factor for salmonid production.

Lackamas Creek, adjacent to Toboton Creek, has excellent gravel but its flow was less than 1 cfs. It had very few fish, but in a wet year it could be very productive. Closure would allow this stream to produce quite a few fish in wet years. Without closure there will be no good years in Lackamas Creek.

Powell Creek has a number of beaver ponds and several channels in its lower reach. It can remain a very productive stream with excellent habitat for both fish and wildlife provided that adequate flows are retained. I believe that these suggested changes would be consistent with the purpose of the program.

Sincerely,
THE DEPARTMENT OF GAME



Hal A. Beecher, Ph.D.
Habitat Management Division

HAB:cv

Mr. Robert Kavanaugh
Department of Ecology PV-11
Olympia, WA 98505

Dear Bob:

With respect to the proposed administrative rules for the Nisqually River Basin Instream Resources Protection Program, I would like to make the following comments on behalf of the South Sound Fly Fishers. The South Sound Fly Fishers is an organization of around 40 people primarily from the Olympia area dedicated to the betterment of sport fishing. The Nisqually River is one river with which we are especially concerned.

First, I would like to state that we applaud the Department of Ecology for finally implementing the instream resources protection program. The fact that it is being done and that minimum flows are being set to protect the fishery resources far outweighs any small differences we may have over at what level those minimum flows are set. I cannot emphasize enough our support for the program and how generally pleased we are with the proposed Nisqually River regulations.

Nevertheless, we support, for the most part, the Department of Game's recommendations for instream flows on the Nisqually River (as contained in "Report on Instream Resources of the Nisqually River Basin (WRIA 11) with Recommendations for Instream Flows" by Hal A. Beecher, Habitat Management Division, Washington Game Department, undated). There are some differences between their recommendations and Ecology's proposed regulations. Below I reiterate Game's recommendations that we support.

1. The instream flows for the lower reach of the Nisqually River should be:

December 1 to July 31 -- 1,000 cfs;
August 1 to November 30 -- 600 cfs.

We do not agree with the Game Department's recommendations for flows at the old Pacific Highway bridge (up to 2,700 cfs during January 15 to February 15). Also, we do not subscribe to the idea that the more water the better. We believe that there is an optimal rate of water flow (that is well below flood waters) that will maximize fish production.

2. The instream flows for the bypass reach of the Nisqually River should be:

December 1 to July 31 -- 700 cfs;
August 1 to November 30 -- 370 cfs.

At least the minimum flows should not be set lower than those required by the "FERC Agreement". It is my understanding these are:

December 16 to May 31 -- 600 cfs;
June 1 to July 31 -- 500 cfs;
August 1 to September 30 -- 370 cfs;
October 1 to December 15 -- 550 cfs.

The June-July differences between our recommendations and Ecology's proposed regulations are perhaps the most critical of all our differences.

3. The instream flows for the mid reach of the Nisqually River should be:

December 1 to July 31 -- 1,000 cfs;
August 1 to November 30 -- 600 cfs.

It should be kept in mind that the flows through this section will have to provide for both the instream flows of the bypass reach and Centralia's diversion.

4. The instream flow for the upper reach of the Nisqually River should be:

November 15 to May 1 -- 450 cfs;
May 15 to June 15 -- 650 cfs;
October 15 -- 300 cfs.

5. The Mashel River should be closed for the entire year and the recommended instream flows are;

December 1 to July 1 -- 200 cfs;
July 15 to November 15 -- 64 cfs.

6. In addition, instream flows should be set for Powell Creek, Murray Creek, Toboton Creek and Lackamas Creek. Also, these creeks should be closed to further out-of-stream consumption.

I would like to state a portion of RCW 90.22.010 which reads in part that the Department of Ecology "... shall, when requested by the department of fisheries or the game commission to protect fish, game, or other wildlife resources, establish such minimum flows or levels as are required to protect the resource..."

7. The actions being suggested on Toboton Creek and Unnamed Ditch (that flows into Murray Creek) are not clear. Their low flows should either be quantified or the creek and ditch should be closed (or both).

In addition to these specific recommendations, further research needs to be conducted on the lakes within the river basin. Perhaps this can be addressed in the five year review.

I hope the above comments are of use to you and that they will be considered when adopting the rules for the instream resources protection program. I believe, for the most part, that any differences between our recommendations and Ecology's proposed regulations are only minor.

Again, we believe the most important thing is that an instream resources protection program is being implemented in the first place.

I would like to commend you for the fine job of preparing the background material for the proposed program. I regret that I will not be able to attend the public hearing on Wednesday, December 3 as I have another engagement.

Sincerely,

Gary Benson, treasurer

c.c. Dennis Osier, president
Hal Beecher, Department of Game
Bob Gerke, Department of Fisheries

Town of Eatonville
Incorporated October 28, 1908
Eatonville, Washington 98328

December 2, 1990

Washington State
Dept. of Ecology
Mail Stop PV-11
Olympia, WA 98504

RE: Nisqually River Basin Instream Resources Protection Program (Draft Version)

Dear Sir:

Please accept my thanks for the opportunity to address this proposed program and administrative rules prior to its enactment. As an individual and also a city official, I want the water I drink and the air I breathe to be as clean and pure as is possible. I believe this proposed program is a major step towards guaranteeing these priorities. However, I must admit that the finality of this proposed approach and what I fear are oversights, scares me very much.

There can be no denial that man and his environment must co-exist. Without an adequate environment mankind will inevitably cease to exist, but I also find it difficult to agree with those who would eliminate mankind in their absoluteness to protect the environment. We have no choice but to create a compatible existence with our environment. We must wherever possible prevent further pollution and we must slowly but surely eliminate the existing sources of pollution.

In the four years, prior to my taking over the Town of Eatonville Light Dept., I was City Commissioner of the Water and Sewer Dept. In that period of time the Town tried to improve its water and sewer systems. We built and put into operation a sewage treatment facility, eliminating all effluent entering the Mashell River. Our discharge water is of better quality than that of the river itself. I'm sorry to say, that our efforts to rehabilitate the water system and improve its capacity can only be termed a dismal failure, insufficient planning, insufficient funds, and poor judgement resulted in nothing more than a patch on an already overly patched system.

As noted in this proposed program, Eatonville receives its water from shallow wells adjacent to the aquifer. The aquifer is highly unstable and its water table is controlled by streamflow to the Mashell River.

Dec. 2, 1990
Dept. of Ecology
Page 2

At times of low streamflow our wells have insufficient water to meet domestic needs and we have to draw water directly from the Mashell River. This situation has existed for years and without a major change will only become worse with each passing year. This proposed program would curtail, if not delay, Eatonville river water during the time when it's most needed. We have to have the right to withdraw water from the river between June and October. I must plead with you to make some exclusion in this part of the proposed program.

There are things the town could do to alleviate this situation but they all cost money. Money the town doesn't have. Our water dept. has a debt hanging over it now that is one and one-half times its annual revenue and that debt is slowly creeping upward with each passing month. There are several plans under different degrees of study at the moment to solve this problem, but I'm afraid that these, with any chance of success, will involve use of river water. The one I'm personally involved with is also affected by other parts of this proposed program, which I'd like to digress to for a moment.

This proposal deals with the use of water for the purpose of hydroelectric generation, a non-consumption use. Of all existing and proposed methods of power generation, hydroelectric ranks as one of the most pollution free. In addition it uses a removable resource. The development of new electrical energy sources to meet our existing and future need is of equal importance as the necessity to protect our water quantity and quality. There are almost no places left for the development of major hydroelectric facilities but here in Washington we have numerous locations on streams and rivers which are potential sites for environmentally acceptable low-head hydro-electric facilities. In my opinion this proposed program fails to provide adequate reasonable guidelines for the development where possible low-head hydroelectric generation is available. After reading and re-reading this proposed program I can only find one central theme, everything else is irrelevant,

The single clearly defined and sanctioned theme of this program is FISH. Except for a fleeting mention of animals, birds, flora and people the whole premise is fish and their enhancement. Please don't misunderstand me. Fish are important. Their value as a food product, a source of income, a sense of sport and ecological value is undeniable, but they're of absolutely so more value or importance than any other species, including man.

As Project Manager of the Little Mashell Low-head Hydroelectric facility, I've been more than exposed to the extremist vision of this fish ideology. It reaches a point of total incomprehension. Take as an example my project. The Little Mashell River is a small stream near Eatonville. A tributary of the Big Mashell River. Its drainage basin is roughly 23 square miles with an average annual streamflow of 68 - 80 c.f.s. In summer months that streamflow will drop to less than 2 c.f.s. Located less than a mile upstream from its junction with the Big

Mashell is a series of falls. The upper falls has a vertical drop approaching 60 feet and the streambed below the falls for over half a mile is composed of very large cobbles and completely devoid of gravel beds. Fish do not lay eggs in that cobble area and believe me they don't jump up these falls. That portion of the stream serves only to provide drinking water for wild game and the time when its most needed the streamflow is minimal. However, there are some who will swear the fish migrate up and down this stream. They can't offer any proof of these wild assertions but to them proof is unimportant. What is important, is that no one dares to touch their particular playpen. I don't happen to believe this type of logic is good for mankind or his environment. To generate electric power and at the same time not upset the environment the town proposes to bury a concrete box in the streambed just above the falls. The top of the box would be a steel bar grate set flush with the streambed. From the box a buried 42" diameter penstock would extend downstream a half mile to the tiny powerhouse and tailrace. When streamflow drops below 15 c.f.s., automatic controls would shut down the systems and cease diversion of any water from the stream. At any point above 15 c.f.s. automatic controls would maintain a minimum of 2 c.f.s. bypassing the intake to guarantee water at or above minimal flow in the existing stream. I believe this project is a first class example of how mankind can take benefits from his water source and still leave the environment intact.

This same type thought and comprehensive planning could be used to resolve Eatonville's water problem. It's obvious the aquifer below town is almost useless. It's too shallow and too unstable a material. The town must continue using river water and in ever larger amounts to keep up with growth. The Mashell River is an excellent source of water except for a couple of drawbacks, a high degree of silt and fluctuating streamflow. These could both be overcome by maintaining the water in a reservoir for a short period of time. A reservoir is expensive to build and impossible to pay for under existing rate structure. This problem could be overcome using a different approach. A short distance up river from town, a low dam could be constructed. This dam would create a 5 to 20 acre lake depending on dam height. Such a project would have numerous benefits. Funds created by the sale of Low-head Hydro power could cover the cost and operating expenses. An adequate supply of water for Eatonville would be guaranteed. Damage downstream from winter and spring floods could be lessened through controlled streamflow. A new recreation area for public use would be developed. True, fish migration would be hampered by a dam, but I can't help but believe that we can design ways to overcome that particular problem.

I support you 100% in what this proposed program attempts to do but I feel very strongly that it fails to achieve a balanced coexistence between man and his environment. I would urge you to devote more thought to problems other than just fish.

Sincerely,

Howard Braden
Councilman



STATE OF
Washington
Dixy Lee Ray
Governor

DEPARTMENT OF GAME

NISQUALLY RIVER BASIN IRPP

Jay Hunter, 12-3-80
District Fish Biologist
Wash. Dept. of Game

Good evening, I am Jay Hunter, District Fisheries Biologist for the Department of Game. I am one of Game's regional personnel, involved with water-right reviews and with the actual implementation of these programs through coordination with Ecology's S.W. Region.

I feel that the draft document is well written and covers most of the instream flow protection management needs. However, my personal experience in the actual application of this type of program leads me to believe that a couple of alterations need to be made.

After reviewing the document I find the need to fine tune a couple areas to facilitate regional implementation. I support Jon Gilstrom's closure recommendations on the Nisqually watershed above the powerhouse. Clear Creek, Mounts Creek, exceptions. Appendix A p. 3 WAC 173-511-040 (1) Issuing water rights for most consumptive uses (irrigation) for winter periods creates a large group of illegal users. The only irrigation needs in this basin are during the closure periods. I therefore recommend that language be incorporated to indicate that only water rights for realistic winter diversion projects be issued. This will eliminate a need for field water-masters to monitor these diversions. New Surface Water Closures.p.4 Period of Closure.

(2) p. 4 & 5 Stream and Lake Low Flow and Closures.

Harts Lake and all tributaries	0.5 cfs bypass	
Lackamas Creek and all tributaries	0.5 cfs bypass	close
Thompson Creek and all tributaries	1.0 cfs bypass	
Toboton Creek and all tributaries	1/2 normal flow bypass	close
Unnamed Ditch Trib to Murray Creek	1/2 low flow bypass	close
Unnamed stream trib to Centralia Canal	0.75 cfs bypass	
Unnamed stream trib to Nisqually	0.50 cfs bypass	

These forms of restrictions are not practical for actual regional water-right management. The best example is the Toboton Creek restriction in which it is anybody's guess what quantity of water is defined. The continuing issuing of water rights with flow provisos creates a monitoring dilemma on each stream. These recommendations were made by Fisheries and Game years before we realized the self-destructive results of issuing water rights forever with low flow provisos attached. Oregon's instream flow program bellied-up from abuse of this exact same form of management. We should be able to learn from our sister state's mistakes.

Ecology's S.W. Region does not have a monitoring program to compliment flow proviso management. I have discussed this specific problem with Dick Carter, Gary Hansen, and Walt Bergstrom (of your regional office) who all confirm the inability to properly manage this basin with flow proviso monitoring. It has to be done through limiting allocation permits by establishing a specific cutoff point beyond which no more diversions are allowed. I strongly request that Ecology study those waters listed (with flow provisos) next summer to determine specific allocation quantities available. This basin document should be amended in that respect prior to adoption so that study results may be added as a supplement to the adopted administrative regulations. Hal Beecher will coordinate our flow recommendations.

Without this allocation guideline those listed flow-proviso waters may be dry by the next 5 year review period. WAC 173-511-100 p 7.

The concerns I've discussed are real and essential for both our regional personnel to realistically make this program work. The goal of this document should be to assist and compliment Ecology's regional water-right management program and thereby achieve the protection of instream resources. These problem are not resolved by head office reassurance that regional review has been fully considered and adopted.

Thank you for the opportunity to comment on a couple of needed alterations in an otherwise thorough and well written document. After Hal Beecher, Jon Gilstrom, and I discussed this program we decided to individually speak on our specific interests as they relate to this program.

To: Department of Ecology
From: Elizabeth Tabbott, Natural Resources Chair, League of Women Voters of Washington
Re: Draft Nisqually River Basin Instream Resource Protection Program

Many valid arguments can be made in support of the concept of in-stream protection. Depending on the point of view of the user, a reliable stream flow is important for that particular economic benefit. The League of Women Voters "promotes the wise management of resources, such as water, as a balance between the public interest and the environment beneficial to life". We submit that the health of the river system is the end in itself to any protection program. If the entire river system is considered as a complex, living organism we can appreciate why preserving a reliable flow will keep the system healthy and the many demands in balance. The fish, particularly anadromous fish, are the indicator of the system. Therefore, protecting stream flows to support fish life is of benefit to all users.

Our knowledge of the complexities of river systems, of the complicated relationships between surface water and ground water charges and withdrawals for example, is not yet an exact science. Even the question of optimum stream flows is sometimes debatable. In this coming science we must recognize the strains that man has and continues to impose upon the system. If we are to err in an effort to protect, we must err on the safe side.

Our criticism of the program (see p. 36, Alternatives) would be in its scope. The most important factor influencing stream flows is land use. We need better coordination between land use decisions and assessments such as this one. A total basin study with the complex relationships between land use, water quality and quantity, surface and ground water would have been ideal, We appreciate the time factor. Since a protection program of that scope was not feasible at this time, we would hope that this program will be carefully reviewed by any and all jurisdictions making land use decisions.

We also point out the need for citizen education. For some in the rainy northwest a shortage of clean water seems almost ridiculous. But like everywhere, water quantity is finite and quality is fragile. We must learn to respect these facts. Here in the Northwest over-allocation has resulted in seasonal dry beds that have threatened farming or eliminated annual salmon runs. In some cases, hatcheries have been able to re-establish an artificial run, but at great expense. The irreversible contamination of ground water from such distant land use as dumping of dangerous wastes is a threat we are just beginning to understand. As the public more fully appreciates the demands and dependency we have placed upon our river systems, support for these in-stream protection programs and the necessary closures will increase.

We view this program for the Nisqually and the scheduled rivers to complete the state program as an important first step in a realistic assessment of quantity allocations and an integrated approach to managing both the quality and quantity of our water.

BLACK HILLS AUDUBON SOCIETY

P. O. Box 2524
Olympia, WA 98507

December 3, 1980



STATE OF
Washington
Dixy Lee Ray
Governor

DEPARTMENT OF GAME
600 North Capitol Way, GJ-11 Olympia, Washington 98504 206/753-5700

December 8, 1980

TESTIMONY: Nisqually River Basin Instream Protection Program
Department of Ecology Public Hearing.

– Jack Davis

Black Hills Audubon Society approves the proposed New Sections WAC 173-511-010 through 173-511-100 with the following exception:

173-511-030 (2) - Minimum instream flow on the Bypass Reach of the Nisqually River should be established at 500 Cubic Feet per Second for the period June 15 through September 15.

Basis for this recommendation is evidence supplied by the Washington Department of Game that lower flows would adversely affect emerging steelhead fry by exposing gravel bar spawning beds.

We especially commend the proposal to close McAllister Creek. We regard that stream an integral part of the ecosystem of the Nisqually Delta. Recognizing that the waters of McAllister Creek are already over-allocated is essential.

We are pleased to note the provisions of New Section WAC 173-511-070. The exemptions reassure existing agricultural interests while simultaneously emphasizing the supply limitations of water resources. This section demonstrates that the Department's aim is conservation, not deprivation.

In the West especially, water has traditionally been treated as a commodity. For some time we have recognized that water is, instead, a limited natural resource, far more valuable than was earlier supposed. We are confident that the Department's Instream Resources Protection Program is a positive step toward dispelling obsolete notions about our water resources.

Mr. Henry Yates
Hearings Officer
Department of Ecology PV-11
Olympia, Washington 98504

Dear Mr. Yates:

The Department of Game considers the Nisqually River basin to be an important fish and wildlife resource. Adequate instream flows are vital to fish and wildlife, both directly and indirectly. Adequate instream flows are an important element in the ecological balance of the estuary. We commend the Department of Ecology for its efforts to protect instream resources of the Nisqually River basin, but we urge you to correct several very significant failings in the proposed regulations.

Steelhead Emergence Flows - Bypass Reach

The proposed bypass reach flow for June and July is inadequate, as I have indicated in letters dated October 8, 29, and 31, to Mr. Kavanaugh. We request an instream flow of 500 cfs in the bypass reach throughout June and July. Two major considerations in setting this instream flow are (1) ecological needs of emerging steelhead and (2) protection of existing water rights within the context of the FERC agreement.

Intensive studies by the Fisheries Research Institute of the University of Washington have shown that steelhead fry hatch and emerge from gravel of the bypass reach throughout June and July and into August. Since our request is for a minimum flow, we request 500 cfs only during June and July. The difference between proposed flows and our requested flow accounts for a strip approximately six feet wide along the portion of bypass cross-section where steelhead spawning is concentrated. At the upper bypass study reach, spawning is concentrated near the left bank, where six feet of spawning gravel would be exposed by lowering the flow from our requested flow of 500 cfs to the proposed flow. A similar situation occurs, but on the right bank, at the lower bypass. Desiccation of this strip of gravel where steelhead spawning is concentrated would kill emerging steelhead fry. Protection of 500 cfs in the bypass during steelhead emergence is essential.

Protection of FERC Agreement

Two existing water rights, those of Tacoma City Light and Centralia City Light, are affected by an agreement reached with the departments of Game and Fisheries, and the Nisqually and Puyallup tribes under the auspices of FERC. Protection of these two existing water rights is



Mr. Henry Yates
December 8, 1980
Page Two

therefore in the best interest of all parties in the FERC agreement. The Nisqually River is already over-allocated, as demonstrated by the need for Centralia to voluntarily give up part of its water right in order to make the FERC agreement work. The Nisqually River Basin Instream Resources Protection Program should not affect existing water rights, but if it does not mesh with the FERC agreement it will adversely affect existing rights. The Department of Game urges the Department of Ecology to set instream flows no lower than FERC flows and to close all waters upstream from Centralia's powerhouse. This recommendation includes establishment of 500 cfs as the instream flow throughout June and July. Protection of Centralia's water right plus the instream flow in the bypass reach logically requires an instream flow in the mid reach which is no less than the sum of the bypass instream flow and Centralia's diversion; the needed water will not magically materialize at the Centralia diversion dam. It would be ironic, not to mention contrary to the purposes of the Department of Ecology, if cooperation between fish interests and power interests were to fail because of legal diversions which might take water released by Tacoma for Centralia and bypass flows. Protection of the FERC agreement and affected water rights should allow adequate water in the upper reach to meet Tacoma's operating needs and instream obligations under the FERC agreement.

Stream Closures

We request closure of Powell Creek, Murray Creek, Toboton Creek, Lackamas Creek, and an unnamed ditch tributary to Murray Creek, with instream flows as recommended in my letter of 29 October 1980 to Mr. Kavanaugh. Specific information on these streams was presented in that letter, which is appended to this letter. We support proposed closures.

Enforcement and Operation of Program

Since we support the Nisqually River Basin Instream Resources Protection Program in principle, we want it to be enforced. Without implementation and enforcement, the program will have been wasteful. Now will it be enforced?

Summer closures make the program more vulnerable to violations than do year-round closures. The second exemption in WAC 173-511-070 leaves an opportunity for beneficial use of water in a manner that is consistent with the intent of the program, even in the case of year-round closures.

Restrictions of "1/2 normal flow bypass" and "1/2 low flow bypass" are vague and unenforceable. These instream flows should be quantified.

We urge the Department of Ecology to make these recommended revisions and to adopt the Nisqually River Basin Instream Resources Protection Program including revised administrative rules.

Sincerely,
THE DEPARTMENT OF GAME

Hal A. Beecher, Ph.D.
Habitat Management Division

HAB:lca
cc: Robert Kavanaugh
Jon Gilstrom

BOARD OF COUNTY COMMISSIONERS
PATRICK J. GALLAGHER District 1
JOE STORTINI District 2
JACK BUJACICH, Jr. District 3

15 December 1980

WM R THORNTON
PUBLIC WORKS DIRECTOR
Telephone (206) 593-4600

Mr. Robert Kavanaugh
Nisqually River Basin Program Planner
Mail Stop PV-11
Olympia, WA 98504

RE: Draft Nisqually River Basin Instream Resources Protection Program
(With Proposed Administrative Rules)

Dear Mr. Kavanaugh:

In response to the draft report dated October 1980 and the proposed administrative rules, Chapter 173-511 WAC, Pierce County Public Works Department has no further comment on this project.

Furthermore, we wish to go on record as supporting the presentation of the Nisqually River Instream Resources. However, as we have stated earlier for other project areas, we believe that peak flows should also be considered. Peak flows or flood flows in those river systems are as detrimental to the stream's resource, including people and their property, as are the low flows. The maintenance of adequate channel capacity along developed reaches of a stream should require equal consideration.

Thank you for making this program's review available to us.

Very truly yours,

WM. R. THORNTON
Director

JOHN G. COMIS
Planning Engineer

WRT:JGC:pk

cc: file
Planning Dept.

M/4



Please address correspondence to:
City of Tacoma
Department of Public Utilities
P. O. Box 118691
Tacoma, Washington 98411
Attention:

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES

Mr. G. H. Fiedler
December 18, 1980
Page 2

Mr. G. K. Fiedler
Department of Ecology
Mail Stop PV 11
Olympia, Washington 98504

Dear Mr. Fiedler:

The City of Tacoma, Department of Public Utilities, Light Division submits the following comments on your proposed Nisqually River Basin Instream Resources Protection Program.

Pages 8 & 9. Hydroelectric Project License Proceedings:

Subsequent to the July 1980 draft of the proposed program, the Nisqually River Coordinating Committee (NRCC) has reached a unanimous agreement as to interim minimum flows for the period December 16, 1980 through December 15, 1982. The flow regime as discussed in your proposed draft is, therefore, no longer applicable.

Attached for your information is a copy of the NRCC agreement concerning interim minimum flows which has been submitted to the federal Energy Regulatory Commission (FERC).

It should be recognized that this agreement is effective for an interim period only (December 16, 1980 - December 15, 1982) and that the final minimum flows ordered by the FERC could be substantially different.

In this light, we would strongly encourage the Department of Ecology to publish only those minimum flows ordered by the FERC.

Page 22 second paragraph: The City still believes that there was natural blockage by falls at the LaGrande Reservoir site prior to any dam construction, and that the statement, "fish are resident rather than anadromous due to blockage of the river by Alder Dam" is, therefore, unfounded.

Page 25, first full paragraph: USGS records indicate Horn Creek summer flows of less than 2 cfs, resulting in virtually negligible contributions to the flows in the bypass reach of the Nisqually River.

Page 27, lower illustration: We are uncertain as to the factual basis for this illustration.

Page 34, first paragraph: Contractual obligations and nonpower requirements makes this paragraph invalid and we suggest it be deleted.

Page 36, fifth paragraph: Typo error. The word "wheat" has been misspelled, i.e., "weet."

Appendix A, Page 2: Again our comments regarding publication of minimum flows, as stated above for Pages 8 and 9, are applicable to this section. To the best of our knowledge all interested parties were represented in establishing interim minimum flows along with a modification procedure. See Section 2E, Page 7 of attached agreement.

In conclusion we would like to add:

- (1) The City of Tacoma regulates the downstream river flows for the benefit of all parties, but does not remove any natural flow from the river.
- (2) Any future permits for withdrawal of water from the Nisqually River should be intensely scrutinized and evaluated.

We appreciate the opportunity to comment on this proposed Nisqually River Basin Instream Resources Protection Program and trust that our comments will be given serious consideration.

Yours very truly,

D. J. Caha,
Power Manager
Light Division

Enc.

South Sound Farm Bureau



agriculture



Christmas trees



forestry



poultry



oysters



dairy and beef cattle



worm growing



hay & grains



hogs



small fruits and vegetables

South Sound Farm Bureau

December 28, 1980



agriculture



Christmas trees



forestry



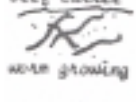
poultry



oysters



dairy and beef cattle



worm growing



hay & grains



hogs



small fruits and vegetables

Mr. Robert Kavanaugh
Washington State Department of Ecology
Olympia, Washington 98504

Dear Mr. Kavanaugh:

This letter is written with reference to the "Nisqually River Basin Instream Resources Protection Program."

After careful study of the proposed new sections for the program, we believe that consideration should be given to the following suggestions, along with consideration of testimony presented at the hearing by the farm people and residents of the Nisqually Valley. Many of those that presented testimony had been residents of their area for numerous years and have a working knowledge of the water uses and resources there.

The proposed changes stress the protection of wildlife, fish, scenic, aesthetic values, water quality, recreation and navigation. They fail to address either the welfare of the agriculture industry nor that of the property owners in the various areas of the Nisqually River basin. We believe that the Department of Ecology has an obligation to consider the welfare of the farm operations and that of property owners. The Constitution of the State of Washington states in Article 21 that "The use of the water of the State for irrigation, mining and manufacturing purposes shall be deemed a public use." We also note that in the 1977 recommendations to the Legislature from the Department of Ecology that one of the fundamentals of the Water Resources act of 1971 is "That adequate and safe supplies of water shall be reserved and protected for human domestic needs".

McAllister CreeK, Sub-Basin: In the proposed changes, McAllister Creek, and its tributaries are recommended for 12 months closure. We believe that this is too restrictive and not necessary. Medicine Creek, which is probably considered a tributary, mainly serves as a drainage ditch for farm use. It does not contain either trout nor salmon. The ducks and geese there are mostly put there by the landowners as pets. The area is included in the adopted county comprehensive plan and agriculture plan and is zoned agriculture-residential. The uses are results of the public hearings and are the will of the people. These have been the two main uses of the area for many years, and they should be given weight-factor consideration in water use importance.

in affiliation with

*Washington State Farm Bureau and the American Farm Bureau Federation
representing tow and one half million farm families*

We believe that the Lake St Clair Area plans should provide for the lake being considered according to water level, not by 12 months closure. The best use of the water should be the dominant factor. The land owners are taxed according to the best use of the property. Agricultural importance should be stressed in water importance as this Lake St Clair area is proving to be an agricultural growth area. At the present time, it supports one half of the State's certified small fruit plant production. There is also extensive commercial tree nursery stock for reforesting in the area.

Nisqually River Basin of Thurston County: The use of water from the Nisqually River and its tributaries should not be restricted to a 12 months closure. New permits should be made available for use of the water that is in excess of the low water levels. By a definite closure, we believe that the door is being closed for further beneficial uses, such as fish farming, agricultural reservoirs, energy producing plants, and frost protection measures. An open minded attitude and better use of excess water can prove beneficial to wild life, fish and recreational uses along with the above named proposals. They could work well together.

The South Sound Farm Bureau is interested in the protection of wild life and fish and would like to work ill cooperation with beneficial programs. However, we believe that this proposal for changes does not take into consideration many factors that should be of prime importance. We believe that the closure is too restrictive and in some areas not necessary.

Thank you for your consideration.

The members of the South Sound Farm Bureau

Jim Wilcox, President,
Rick Nelson, Vice President
Marlyta Deck, Secretary
Bruce Briggs, Legislative Chairman

Marlyta Deck, Secretary

in affiliation with

*Washington State Farm Bureau and the American Farm Bureau Federation
representing tow and one half million farm families*



AFZH-FEEP

DEPARTMENT OF THE ARMY
HEADQUARTERS 9TH INFANTRY AND FORT LEWIS
Fort Lewis, Washington 98433

29 December 1980

State of Washington
Department of Ecology
ATTN: Mr. Kavanaugh
Mail Stop PV - 11
Olympia, WA 98504

Dear Mr. Kavanaugh:

In regard to the Nisqually River Basin Instream Resources Protection Program Draft received, Fort Lewis has no comment concerning any action. The Program will not impair the training mission of this Installation. As we stated in our 22 July 1980 letter, tactical training will continue on the Nisqually River (and Muck Creek). This is essential to the successful completion of simulated armed conflict. Our requirements do not involve any reduction to river volumes.

We hope this information will be noted and assist you in your planning endeavors.

Sincerely,


C. J. ALLAIRE
Colonel, CE
Facilities Engineer



STATE OF
Washington

DEPARTMENT OF FISHERIES
115 General Administration Building, Olympia Washington 98504 206 753-6000

December 29, 1980

Mr. Henry Yates
Hearings Officer
Department of Ecology PV-11
Olympia, Washington 98504

Dear Mr. Yates:

The Department of Fisheries has reviewed the draft Nisqually River Basin Instream Resources Protection Program document and regulations. Generally, the Department of Ecology has done a satisfactory job of developing a plan for preserving the instream resources of the Nisqually River Basin, including the salmon resource. However, the proposed regulations fail to adequately protect several important salmon production areas from further consumptive water use. We urge the Department of Ecology to revise the regulations to reflect improved levels of protection for the following areas.

Nisqually River Mid Reach Instream Flows

In November 1980, the FERC Nisqually River Coordinating Committee (Tacoma City Light, Centralia City Light, Departments of Fisheries and Game, and the Nisqually and Puyallup Indian Tribes), reached agreement on a new two-year interim flow regime for the bypass reach of the Nisqually River. The proposed Nisqually River IRPP regulations for the bypass reach accurately reflect the flow needs of salmon provided for by the agreement. However, the proposed instream flows for the mid reach upstream of Centralia's diversion dam could jeopardize the FERC flow agreement or Centralia's water right. The mid reach flows, although adequate to protect salmon produced in this reach, permit a level of consumptive water use which could result in insufficient flow reaching the Centralia diversion dam. In order to assure that both the bypass reach instream flow (600 cfs from November 1 to May 31) and Centralia's water right (720 cfs or natural inflow to the diversion dam, whichever is less) are provided, consumptive use in the mid reach should be prohibited from November 1 to May 31, except when the flow reaching the diversion dam exceeds 1,320 cfs. Non-consumptive uses (e.g. flow diversions within the mid reach) would not be conditioned to the 1,320 cfs flow, but to the instream flows currently proposed for the mid reach by the Department of Ecology.

Stream Closures

The Department of Fisheries is concerned that the proposed instream flows for the upper reach of the Nisqually River upstream from Alder Reservoir could potentially cause Tacoma City Light problems in meeting the FERC flow requirements for the bypassed reach and Centralia's water right. The current flow agreement is predicated on Tacoma receiving existing levels of inflow to Alder Reservoir. Any water rights issued for significant, consumptive use in the upper reach will result in reduced inflow to Alder Reservoir and make it difficult or impossible for Tacoma to meet FERC ordered flows downstream. We recommend that the upper reach be closed to further consumptive use to prevent this from occurring.

Henry Yates/DOE

-2-

December 29, 1980

The period of closure proposed for Mounts Creek (Red Salmon Creek) and Clear Creek fails to adequately protect the salmon resource. Both are spring-fed streams which can provide excellent habitat for chum and coho salmon. Mounts Creek is an important chum salmon tributary, but it is a small creek which suffers from low flows during the entire year. Superimposition of chum salmon redds is known to occur because spawning habitat is limited by low flow. Additional consumptive water withdrawals will further reduce the area available for spawning. Clear Creek was the scene of a recent spawning gravel rehabilitation project for chum and coho. Increased salmon production is anticipated with existing flows, but additional consumptive water use could offset the benefits of gravel rehabilitation by reducing spawning and rearing habitat. The proposed April 1- October 31 closure period ignores the fact that chum salmon and coho migrate and spawn in these creeks from November through January. We believe that these small creeks need to be fully protected during the spawning season. Also, coho salmon rear in these creeks on a year-round basis. Department biologists have determined that low rearing flow in small creeks such as these is the limiting factor affecting coho production. We urge the Department of Ecology to change the period of closure for these two creeks to "all year."

We recommend that several additional tributaries be added to the list of new surface water closures. These include Murray, Lackamas, Toboton and Powell Creek, the outlet of Harts Lake, and unnamed tributary to the Nisqually River #0057 (see WDF stream catalog). Murray Creek receives annual plants of coho fingerlings and also supports wild coho production in the lower reaches. Lackamas, Toboton and Powell Creek, Harts Lake Outlet and stream #0057 all produce wild coho salmon with actual usage dependent on stream flow. Low flows during the upstream migration and spawning season can block access to adults in certain years and low flows during the rest of the year may limit rearing potential.

Juvenile salmonid studies performed by the Fisheries Research Institute (FRI) indicate that coho fingerlings produced in the mainstem Nisqually River disappear from the mainstem in late September only to reappear as smolts the following spring (Tyler 1980). Tyler theorized that coho fingerlings migrate into small tributary streams to winter-over and complete development to the smolt phase. If his theory is correct, then all Nisqually system coho, both mainstem and tributary spawned, are highly dependent on quality rearing habitat found in small tributaries like Murray, Lackamas, Toboton and Powell Creek and the others.

Several studies conducted in the Northwest tend to support Tyler's theory concerning the importance of small tributaries to wintering coho juveniles. Skeesick (1970) found that juvenile coho rearing in the mainstem Wilson River in Oregon migrated into a small spring-fed tributary in October, November and December to overwinter. The immigrants survived well and exhibited excellent growth resulting in large smolts the following spring. Skeesick concluded that juvenile coho migrate into small tributary streams to escape the high-flow, turbid-water environment prevalent in the mainstem in winter. He also concluded that even if a tributary is too small to support adult spawning, we may need to protect it because of the fall and winter rearing habitat that it offers for juveniles. Bustard and Narver (1975) found that coho in a Vancouver Island stream searched for winter rearing habitat when water temperatures declined to 4°C or less. The young coho selected areas with velocities 0.5 fps or less and shelter consisting of tree roots, logs and other debris; habitat provided by side pools and small tributaries. Very few coho utilized rubble or boulder cover, the predominant cover type on the mainstem. The authors concluded that flooded side pools and small tributaries



Nisqually Indian Tribe
4820 She-Nah-Num Drive S.E.
Olympia, Washington 98504
Phone: 456-5221

December 30, 1980

Mr. John Spencer, Acting Director
Department of Ecology, Mail Stop PV-11
Olympia, Washington 98504

RE: Nisqually River Basin
Instream Resources Protection Program

Dear Mr. Spencer,

Consistent with its historic rights and responsibilities, the Nisqually Indian Tribe is involved in a long-term program of increasing the salmon and steelhead production of the Nisqually River drainage. This will provide benefits to all fishery interests in the state. The cornerstone of this program is the protection and rehabilitation of fish habitat within the drainage. We expect the Instream Resources Protection Program (I.R.P.P.) of Department of Ecology (D.O.E.) to play an important role here and we have reviewed and evaluated your I.R.P.P. with this in mind.

We have made our review with the knowledge that the Nisqually Indian Tribe, as a signatory party of the Treaty of Medicine Creek of 1854, has a treaty right to one-half of each run of fish produced on the Nisqually River. This includes an environmental right that encompasses instream flows of sufficient quantity and quality to fully sustain the historic fish runs of the Nisqually River. United States v. Washington - Phase II (W.D. Wash. Slip Opinion - September 24, 1980). The Federal Court has stated:

"At the outset, the Court holds that implicitly incorporated in the treaties' fishing clause is the right to have the fishery habitat protected from man-made despoliation.

The most fundamental prerequisite to exercising the right to take fish is the existence of fish to be taken. In order for salmon and steelhead trout to survive, specific environmental conditions must be present * * * (1) access to and from the sea, (2) an adequate supply of good-quality water, (3) a sufficient amount of suitable gravel for spawning and incubation, (4) an ample of food, (5) sufficient shelter." (Id., at 21)

The Nisqually Tribe reviewed the I.R.P.P. on the basis of detailed knowledge of the drainage accumulated by the Tribe's biologists and other tribal staff. Over the past several years, the Tribe's staff has examined virtually every stream within the basin and have participated in extensive instream research on the mainstem Nisqually River. In addition,

Page 2
December 30, 1980
Nisqually River Basin -- D.O.E.

D.O.E. listings of water right permit holders and claimants have been examined and quantified by sub-basin drainages in an effort to determine what streams within the basin are presently overallocated.

Tribal fisheries personnel also have participated extensively on the interdisciplinary, interagency team formed by D.O.E. for the Nisqually I.R.P.P. We have submitted our recommendations and supporting data to the department in writing and orally. You are referred particularly to our letter to Mr. Eugene Wallace dated August 6, 1980.

We appreciate your efforts to identify measures needed to protect the Nisqually watershed and we are generally supportive of its contents. Specifically, we agree that the proposed closure of Tanwax Creek, McAllister Creek, and the minimum flow regime/partial closure of the Mashel River are needed. These recommendations are well justified by the evidence and we strongly support them. These are productive salmonid streams but need instream flow protection if this production is to be continued and enhanced. In addition, the confirmation of earlier closures on Horn Creek, Muck Creek, Ohop Creek, Yelm Creek, and all their tributaries, is appropriate and we support them. We generally support your direction for the mainstem Nisqually River although we do disagree with some of your recommendations and discussion in significant respects; we discuss these differences in detail below.

Despite our general support we feel strongly that additional protection is needed in several instances, particularly on tributary streams. The following changes are essential for fish habitat protection in the Nisqually River basin and we request that you adopt them in your Final I.R.P.P. and in your regulations.

1. Murray Creek - present status: None
- proposed status: Total closure all year
Murray Creek has moderate potential for coho and steelhead spawning, and high potential for rearing of these species. The Washington Department of Fisheries has planted coho fry in this stream in recent years with good success. Flows in this stream are already critically low. This stream can contribute significant numbers of coho salmon to the fishery. With flows already low, this contribution could be totally lost if additional water withdrawals are permitted.
2. Toboton Creek - present status: ½ normal flow bypass
- proposed status: Total closure all year
The fisheries potential of Toboton Creek was recognized in 1948 when a water right application was conditioned requiring the bypass of ½ the normal flow. The spawning and rearing potential of this stream for coho and steelhead are very high. This potential can be met through coho fry plants and natural spawning, but is vulnerable to additional water withdrawal. A minimum flow, rather than a total closure might adequately protect fisheries habitat but would be difficult to enforce. We therefore request a total closure of Toboton Creek.

3. Lackamas Creek - present status: 0.5 cfs bypass
- proposed status: Total closure all year
Lackamas Creek is a small stream, yet it has good production potential, particularly for coho. Recent field investigations by tribal fisheries staff found the stream flow to be 0.38 cfs. Enforcement of the 0.5 cfs bypass is not possible and a total closure should be adopted to protect the instream habitat of this stream.
4. Mounts (Red Salmon) Creek - The dates of the closure on Mounts Creek should be changed from May 1 - October 31 to all year. This stream is utilized for spawning by coho and chum salmon, yet your proposed dates would lift the closure just as the spawning season begins. This would be unacceptable.
5. Harts Lake & outlet streams - present status: 0.5 cfs bypass
- proposed status: Total closure all year
The outlet stream of Harts Lake is tributary to Horn Creek. It's status should be the same as Horn Creek, i.e. total closure. The 0.5 cfs bypass is unenforceable since no stream flow gauge exists on this stream.
6. Muck Creek - Muck Creek is the major spawning stream for chum salmon and is also utilized by coho salmon and steelhead trout. In 1948 water allocation was closed for Muck Creek except for domestic and stock watering purposes. We have determined that since 1948 D.O.E. has accepted permit applications for consumptive use of water in excess of 4 cfs instantaneous flow within this drainage, including irrigation of 170 acres. Furthermore, there are over 50 recorded water claimants (including 120 irrigation acres) for the drainage.

We are convinced that the cumulative effects of numerous single domestic diversions have and will continue to seriously affect the quantity and quality of water available for instream uses on this stream. The high salmonid production and production potential of Muck Creek and the demonstrated failure of past partial closures to halt Muck Creek out-of-stream consumption of water require that exemptions to the closure adopted should be limited as specified in WAC 173-511-070, paragraph (3), and that this change should be noted in the regulation continuing the closure of Muck Creek and tributaries.
7. Upper Drainage Tributaries - As presently written, the Draft I.R.P.P. provides no explicit protection levels for the upper drainage tributaries below National (i.e. Little Nisqually River, East Creek Mineral Creek, and their tributaries). Rather, in discussion of the upper drainage (page 11), proposed flow control points (page 39, 40), and proposed administrative rules (page 2, 3), it is assumed that the Nisqually River gauge at National measures the upper drainage flow. In fact, the mean discharge at National is 741 cfs (page 40) while the mean discharge from the upper drainage (equal to Tacoma's annual average discharge from Alder-LaGrande, page 33) is 1436 cfs. Thus, we conclude that the unprotected streams contribute nearly 50% of the upper drainage discharge.

The Final I.R.P.P. and Administrative Rules should include some specific discussion of and provisions for these tributaries. This is necessary to protect the instream resources of these streams and to provide adequate inflow into Alder Reservoir for meeting the required minimum downstream flows.

As you are aware, the Nisqually Tribe and the state Departments of Fisheries and Game are involved in litigation before the Federal Energy Regulatory Commission concerning minimum flows for the mainstem Nisqually River below the LaGrande powerhouse. At present Centralia's Yelm project, which diverts up to 800 cfs at the dam, is not subject to federal license and regulation. Therefore, the F.E.R.C. proceedings are now in an "interim" phase pending final ruling on whether Centralia is subject to federal regulation. Last November all parties to the proceedings agreed to the following minimum flow regime, to be in effect through December 15, 1982:

Bypass Reach

Dec 16 - May 31:	600 cfs
June 1 - July 31:	500 cfs
Aug 1 - Sept 30:	370 cfs
Oct 1 - Dec 15:	550 cfs

Mid-Reach

The flows specified above, less 120 cfs, plus Centralia's water entitlement (720 cfs or natural flow to Centralia's dam, if lower)

These flows are inadequate to again fully achieve historic levels of fish production for the Nisqually River and represent a compromise from the minimum flows we are seeking from F.E.R.C. For further information please refer to our letter to Mr. Wallace dated August 6, 1980.

Your I.R.P.P. proposed instream flows for the Bypass Reach do not conform to those agreed to by the state, tribal and utility parties to the F.E.R.C. proceedings, and certainly are well below the flow levels which we believe are necessary to fully rehabilitate the River and to fulfill the obligations of the state and Federal governments under the Treaty of Medicine Creek. The flow level for June and July at a minimum, should be 500 cfs; not the 450 or 400 proposed. 500 cfs is necessary, in our judgement, to provide minimum protection for the incubation of steelhead spawned in April and May. Depending on how high the flow was during spawning, lower flows could well result in significant losses of juvenile steelhead.

Evaluation of your proposed closures of McAllister Creek and the Mashel River is made more difficult by your vague and inadequate discussion of municipal water rights on these streams (see pages 14, 16 and 35). You state that Olympia has existing water rights to 50 cfs from McAllister Springs, yet our examination of D.O.E. recorded water rights determined that Olympia holds rights to 35 cfs instantaneous flow from McAllister Springs and an additional

20 cfs instantaneous flow from other points on McAllister Creek. Your discussion (page 35) of Olympia's maximum production states that maximum as 30 mgd, which we calculate as 46.5 cfs instantaneous flow. You should determine and state whether this is the maximum from McAllister Springs only (and, therefore, above established rights) or from all areas along McAllister Creek (and, therefore, below established rights). Perhaps Appendix G, had it been published, would have clarified this confusion. We think your I.R.P.P. should contain a complete discussion of flows and diversion demands, both present and projected, for McAllister Creek.

Similar problems of vagueness and uncertainty arise in your discussion of the Mashel River. The Town of Eatonville pumps water from wells located in the Mashel River. However, there is no discussion of what volume water is withdrawn, whether this withdrawal affects instream flow and if so, what volume of water is withdrawn from the stream. This information certainly should be included in the I.R.P.P. We have examined D.O.E. water right lists and determined that the Tow of Eatonville holds groundwater rights to 610 gal/min. instantaneous flow (which we calculate to be equal to 1.36 cfs). In addition, the Town of Eatonville holds surface water rights to 2.3 cfs instantaneous flow from the Mashel River. You should determine, and state in the I.R.P.P., whether this water is taken from the Mashel at the Ranney well sites or elsewhere; whether the volume diverted varies seasonally; the capacity of the Eatonville municipal water system; whether it has been operated at capacity in recent years, and what proportion of the total need of Eatonville is met by the Ranney wells and/or diversions from the Mashel River. Obviously, we think that a thorough discussion of this issue is needed and we request you include it in your Final I.R.P.P. This deficiency does not alter our support of your instream flow regime for the Mashel River or your decision to close the river from June 1 through October 31; however, we do recommend that the closure be extended through November 30.

Another problem we wish to bring to your attention is your proposed closure of Clear Creek to consumptive water allocation. While we are not opposed to protecting the instream resources of this important spawning stream, you should be aware that this stream lies entirely within the boundary of the Nisqually Indian Reservation (specifically, that portion of the reservation currently part of Fort Lewis). The Nisqually Indian Tribe still retains ownership of all water resources within its reservation boundaries, (as well as rights to off-reservation waters necessary to support the fishery). Therefore, D.O.E. does not have the authority to propose such a closure, or to enforce it.

Finally, there are several errors or omissions in the descriptive sections of your Draft I.R.P.P. which should be corrected in the Final.

1. Nisqually Tribal Fishery - the second full paragraph on page 8 should follow:

The Nisqually Indian Tribal river fishery provides an economic base for approximately 80 percent of the Tribe's families. The Tribe's commercial harvest of chum salmon averages 20,000 per year and its steelhead harvest averages 3,000 fish per year. Tribal chinook and coho annual river harvests have varied greatly, with the chinook

the chinook harvest since 1975 averaging 750 and ranging from 64 to 1782. The coho harvest since 1975 averaged 7090 and ranged from 1010 to 14,066."

2. Irrigation Water Rights - The discussion of irrigation water rights (page 36, third full paragraph) is out-of-date. According to data we have received recently from D.O.E., existing water rights for irrigation amount to about 39 cfs instantaneous flow (4136 acre feet/year) for 3925 acres.
3. Hydroelectric Operations - The description of Tacoma's hydroelectric operation (page 33, 1st paragraph) is incomplete. After 42.4 in the fourth line, the following should be added:
" * * * and diverts water to a powerhouse located at river mile 40.8. The river is normally totally dewatered between the dam and the powerhouse. Alder dam * * *"
4. Calculation of Runoff - In your description of runoff (page 16), you present summer average flows from river mile 21, at McKenna. Since McKenna is within the bypass reach, calculations from the McKenna gauge cannot be used for calculating runoff without adding in Centralia's diversion and accounting for the effect of Tacoma's storage on runoff. To our knowledge, this has not been done to formulate this description.
5. Intermittent Flows - In describing the prairies area of the Nisqually drainage (page 6, bottom paragraph, last sentence), the intermittent flow conditions of various streams are treated as naturally occurring events. What evidence does D.O.E. have that these streams are naturally intermittent? Yelm Creek is listed as a prime example yet to our knowledge Yelm Creek is not an intermittent stream.
6. Gauge at National - The gauge at National is not accurately described (see page 2 of administrative rules).

We trust you will cooperate in making the changes we have requested. With these changes we believe that the I.R.P.P. will be beneficial to fish production on the Nisqually River and we look forward to its final adoption.

Sincerely,



Dorian S. Sanchez
Chairman

DSS/sw



HELEN ENGLE
4011 Alameda Avenue
Tacoma, WA 98466
(206) 564-3112
January 12, 1981

Mr. John Spencer, Acting Director
Department of Ecology
Olympia, WA 98504 PV-11

Dear Mr. Spencer:

I wish to comment on the Nisqually River Basin Instream Resource Protection Program and the proposed administrative rules (WWIRPP Series No. 9, October 1980 DRAFT).

Although I have not participated in the workshops and hearings, I have been following the development of this program with a great deal of interest. I have been very pleased with the Department's process and the professional quality of the staff's work on this draft. The Department or Ecology has given us a clear picture of the resource, in modern water rights awareness; the pressures on it, and the options open to beneficiaries of Nisqually Basin water at every level of interest.

My interests are for wildlife resources, conservation, fisheries, and recreation. Plus the incredibly valuable asset the Nisqually and its tributaries is to the public for study, esthetics, and historical interpretation (inc. natural and human and geologic). The Department's document reflects concern for these values and I support their proposed administrative rules with some small modifications, itemized below.

I especially command the proposal to close McAllister Creek. I protest any further withdrawals from this already over-allocated stream, any further manipulations, and I request that the Department make every effort to keep this short, most valuable, incredible artesian-fed stream in its present state. I am opposed to the Department of Fisheries facility on the stress, and have so indicated to that agency. I am prepared to justify my opposition in a lengthy document at the drop of a hat.

The waters of the Nisqually Basin are taking a more important resource status for wildlife habitat and native fisheries. Close to a high density population area, still an unpolluted, mostly unmanipulated river, the Nisqually should become a benchmark of what western Washington rivers once were. I have long advocated the proposal of Governor Evans' Task Force on the Nisqually Parkway System. This plan, headed up by Dr. Richard Slovin in 1973-74, provides for multi-jurisdictional management of the Nisqually from the glacier to the bay. My support for your recommendations on the Nisqually IRPP is largely because it is compatible with that long-range plan. I would work for that to come to pass.

The modifications of the Draft that I request are those advanced by the Department of Game for the adequate base flows during the summer months. I support the minimum instream flow on the Bypass Reach of the Nisqually be established at 500 cubic feet per second for the period of June 15 to September 15.

I will be most anxious to know of the final adoption rulings on this important Program. Thank you for the opportunity to comment.

Sincerely,

Helen Engle, Immediate Past President, Washington Environmental Council
Member, National Audubon Society Board of Directors, Member, Nongame Advisory
Council to the Washington Game Department.

1821 South Water Street
Olympia, WA 98501
January 14, 1961

Mr. Robert Kavanaugh
Nisqually River Basin Program Planner
Mail Stop PV-11
Olympia, WA 98504

Dear Bob,

I regret that this response may be too late to be included in the comments. However, here are my thoughts about instream flows.

The Nisqually River Basin Instream Resources Protection Program is a step in the right direction. DOE should be commended. Closures of some streams to further consumptive appropriation are constructive steps which will help to preserve the streams and associated riparian habitats. To work, this program must be enforced.

Instream flows should be set as close to natural flows as possible. The full range and fluctuations or flows are important in maintaining the riparian and estuarine ecosystems. Changes in flows act as cues which stimulate many processes in plants and animals of these ecosystems. Adequate flow is needed to maintain the estuary's high productivity and support its wildlife.

I also send a personal thank you for the excellent work you have been doing.

Very sincerely,

Flo Brodie
President Emeritus
Nisqually Delta Association

FB/dl



**Washington
Environmental
Council**

January 15, 1981

Mr. Bob Kavanaugh
Department of Ecology, PV-11
Olympia, Washington 98504

Re: Nisqually River Basin Instream Resources Protection Program

Dear Mr. Kavanaugh

As co-chairmen of the Washington Environmental Council's Fisheries Committee, we submit the following comments on the above program and proposed regulations.

Our goal is to protect the fisheries resources of Washington State, especially the anadromous salmon and steelhead runs. In general, we support the Department of Ecology's Instream Resources Protection Program in that it tends to ensure the maintenance of a healthy fisheries resource.

Our general support extends to the Nisqually River Basin program; our review of the proposed regulations indicates that a positive effect on the fisheries will be a main result. With this supportive attitude in mind, we make the following suggestions for strengthening the program:

1. We support the fisheries management agencies' (Department of Game, Department of Fisheries, Nisqually Indian Tribe) request concerning a minimum flow of 500 c.f.s. in the bypass reach of the Nisqually River. That level is the minimum needed for protection of steelhead trout and salmon and to conform to the agreement reached by all parties to the pending Federal Energy Regulatory Commission litigation concerning that reach.



2. We support the fisheries agencies' request for closures of numerous high water quality tributaries of the Nisqually River. These small streams are critical for the maintenance of coho and steelhead habitat.

DEDICATED TO THE PROMOTION OF CITIZEN LEGISLATIVE

Bob Kavanaugh - Page 2

3. We support your proposal to close McAllister Creek to further consumptive appropriations. This particular closure is important due to the City of Olympia's refusal to agree to minimum flow releases from the springs.

Thank you for the opportunity to comment at this late date. If you have any questions concerning this review or any other activities of the WEC Fisheries Committee, please call either of us at the numbers listed below.

Sincerely,

Toby Thaler
464-5888

Ben Shady
624-6960

cc: Washington Department of Fisheries
Washington Department of Game
Nisqually Indian Tribe



SIERRA CLUB

Cascade Chapter

4534½ University Way, N.E.
Seattle, WA 98105

January 15, 1981

Mr. John Spencer
Acting Director
Department of Ecology
Olympia, WA 98504

Dear Mr. Spencer:

The Sierra Club, Cascade Chapter, would like to comment on the Nisqually River Basin Instream Resources Protection Program Including Proposed Administrative Rules, published October, 1980.

Reviewing the draft report, we were impressed with the quality of the presentation. We believe that such an excellent document will aid the citizens of Washington in understanding the water-related resource issues discussed and in making informed public input. The map, graphics, photographs, and careful rendition of facts and issues made this report a pleasure to read.

The Cascade Chapter commends the Department of Ecology for outlining a plan to retain the waters of the Nisqually River basin with sufficient stream levels to protect wildlife, fish, scenic, aesthetic, environmental values, recreation, navigation, and water quality. We fully support the proposed rules and look forward to seeing their swift implementation. We specifically support the new surface water closures for the Mashel River and McAllister Creek, and for the minimum instream flow on the Bypass Reach of the Nisqually established at 500 cubic feet per second for the period from June 15 to September 15.

We believe that the exemptions provided in proposed WAC 173-511-070 provide adequately for existing agricultural needs while emphasizing the need for wildlife, fish, and environmental use of the Nisqually River basin. In the long run, our society will benefit from these latter non-consumptive uses of water just as it has benefited in the past from increasing use of water for agricultural and commercial uses.

Thank you for your consideration.

Sincerely,
Harold W. Wood, Jr.
Harold W. Wood, Jr.
Conservation Chair

... to explore, enjoy and preserve the nation's forests, waters, wildlife and wilderness.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
2625 Parkmont Lane S.W., Bldg B-3
Olympia, WA 98502

January 20, 1981

Mr. Glen H. Fielder
Acting Assistant Director
Office of Water Programs
Department of Ecology
Olympia, WA 98504

Dear Mr. Fielder:

We have reviewed your Nisqually River Basin Instream Resource Protection Program and would like to request one change in the proposed administrative rules; namely, that you not make reference to specific flows in the Bypass Reach of the Nisqually River. As you know, the major water users on the river and fishery interests have been working for years to resolve instream flow concerns. Their recent FERC negotiations have resulted in flow recommendations different from yours, and field studies now in progress may result in even further flow revisions. Federal and state fish and wildlife agencies fully support your instream program and, in the past, have reached agreement with your department during planning sessions so that we could offer our unqualified support of your regulations at the adoption hearings. Since the Bypass Reach is closed to further appropriations anyway, it would be most unfortunate if, in order to maintain consistency with their FERC negotiating positions, fishery agencies had to go on record as opposing your program. We understand your usual position of wanting to provide minimum flows in addition to closures in case a future adjudication is necessary; but in this case we believe that the resource would be better served by not specifying flows at this time. Clarifying language could be added to the regulation stating that the Department of Ecology will consider specific flows when FERC flows are finalized.

We will appreciate your consideration of our request.

Yours sincerely,

Margaret J. Lohr
do
Chuck A. Dunn
Field Supervisor

January 21, 1981

Hearing Officer, DOE
Olympia, WA 98504

Dear Sir:

I'm writing in regard to the Instream Resources Protection Program for the Nisqually River Basin. And I'm writing in support of the strongest protections for instream use of the water that can be passed. The values to fisheries, to recreation of many varieties, and to keeping South Sound waters high quality cannot easily be quantified in dollar terms. But anyone looking at the system in its present state must realize that the Nisqually is rare in terms of its continuing wildness and its resource potential. Indeed, I believe, like Governor Ray (ex) that the river would easily qualify for Wild and Scenic River status under the new guidelines put forth by Congress. And that that status, or one even more protective, should be sought by the State in the near future.

But for now, the very most protective IRPP should be adopted and implemented. The Weyerhaeuser Export Facility EIS stated that there was plenty of water available for their project. And the public has no good way, other than to study documents such as the IRPPs to see if the facts are correct. So I support not only this particular Nisqually IRPP; but the concept itself because it will help so much in being realistic about planning for use and protection of water resources.

I would like to receive a copy of the Nisqually program so I can study it in detail. Meanwhile I urge the decision-makers to adopt a strong program to protect instream flow levels on the Nisqually.

Sincerely,



3711 West Tilden Street
Seattle, WA 98199
282-8434

P.S. I will be unable to attend the hearing because I will be working that week.

nfk

JOHN G. GELDER
COMMISSIONER OF FINANCE
AND ACCOUNTING

BILL MOELLER
MAYOR
COMMISSIONER OF SAFETY

WILLIAM H. RICKARD
COMMISSIONER OF
PUBLIC WORKS

CITY OF CENTRALIA

STATE OF WASHINGTON

January 22, 1981

Robert E. Kavanaugh
Nisqually River Basin Planner
Department of Ecology Mail Stop PV-11
Olympia, Washington 98504

Re: Statement of City of Centralia Regarding
October 1980 Draft of Nisqually River
Basin In-Stream Resources Protection
Program.

Dear Mr. Kavanaugh:

The City of Centralia has a major long-term interest in the management and protection of the Nisqually River water resource, particularly with respect to operation of the City's Yelm hydroelectric project. We are pleased, therefore, to have this opportunity to offer the following comments and recommendations regarding the subject draft report.

On December 5, 1980, the FERC issued its Fourth Amended Interim Order Designating Flow Regime. The parties to the FERC proceedings are now operating under this new interim order which, among other things, establishes new minimum flows for the bypass reach of the Nisqually River. Therefore, the two paragraphs on the bottom of page 8 and the top of page 9 should be revised accordingly.

In Appendix A at page 2, the minimum flows for the bypass reach should be revised to conform to the FERC December 5, 1980, Interim Order minimum flows. This would require changing the minimum flows for the periods June 15, July 1, and July 15 to 500 cfs, and for the periods November 1, November 15, and December 1 to 600 cfs.

Also in Appendix A at page 2, the minimum flow shown for the mid-reach of the river for November 1 and November 15 is not consistent with Centralia's water-right of the lesser of 720 cfs or the natural flow. The minimum flow for this reach, if it is not closed, should always be at least as much as Centralia's maximum water right.

Robert E Kavanaugh
January 22, 1981
Page Two

BRAGET FARM
18815 MOUNTS RD. S. W.
OLYMPIA, WA 98503
491-5749

January 26, 1981

Overriding all other considerations however, is our recommendation that the entire Nisqually River above the Centralia powerhouse (the bypass and mid-reaches) should be closed at all times. The protracted ongoing proceedings before the FERC among the Indian tribes, the state agencies, and the hydroelectric plant operators are evidence that the water in the Nisqually River in the bypass and mid-reaches is fully appropriated, if not over-appropriated. There is no basis at this time to assume that there is sufficient water in these reaches to permit new allocations. We support the proposal that the in-stream protection program be reviewed at least once each 5 years. If final resolution of the FERC proceeding alters the present situation, new conditions, as may be appropriate, can be adopted for these reaches during any regular program review. For now, however, these reaches should be closed in all months.

Respectfully submitted
CITY OF CENTRALIA LIGHT DEPT.

By 
Harry Taylor, Superintendent

cc: William Rickard
Hal Moser
Frank Frisk
Dr. Roy Nakatani

Mr. John Spencer, Acting Director
Department of Ecology, Mail Stop PV-11
Olympia, Washington 98504

RE. Nisqually River Basin Instream Resources
Protection Program Chapter 173-511 WAC
Adoption Hearing Minimum Flows and
Closures

Dear Mr. Spencer,

I have reviewed the Draft I.R.P.P. and the file letters and comments to date. I wish to make the following changes and comments:

1. The Braget Farm has certain water rights, ie, registered, deeded, appropriated, riparian and other historical rights and uses.
2. The Braget Farm has a system of dikes, drains, culverts sub-tiling, ponds, sloughs, creeks and the Nisqually River. Generally, we own to the middle of the river but on some areas our ownership goes clear across the river and includes the bank and habitat on the other aide.
3. Mounts (Red Salmon) Creek has one branch entirely within the diked areas of the Braget Farm. It is affected by tide water up to the limits afforded by the culverts of I-5 southbound. It is this fork and area that the State will have to compensate Bragets for if damages occur in the reconstruction of the approach bridges to the steel span over the river beginning in the winter of 1981.
4. There have been no quantifications done on this fork to my knowledge. In fact, I know of no quantifications on any forks of this creek that flows through the Braget that have been done within the boundaries of the Farm with our knowledge and consent.
5. Your proposed closure here from May 1-October 31 conflicts with our historic, riparian and appropriated is for irrigation, pumping water for stock watering ponds, duck ponds, and the raising and lowering of water for enhancing the hunting and fishing within the boundaries of the Braget Farm. This farm has been noted for its hunting and fishing way before the Department of Ecology existed. In fact, your department exists today because of the public concern for the farms and duck clubs north of I-5 on the Nisqually.

Changes Requested

We ask that you exempt Mounts Creek on the Braget Farm in that area east of the Nisqually River, West of the BN/RR/RW, North of I-5 to the northern boundary of the Braget Farm. This request in no way conflicts with others who request to close the spawning areas in other forks. Other grounds for this request are:

1. No quantitative measurements to prove need for closure.
2. Not an important salmon spawning area in dispute with any agency, group or individual. In fact, the USF&W agency, Fisheries, Game, Pierce County Commissioners, Pierce County Hearing Examiner and the DOE Shoreline Hearing Board granted permits to WASHDOT, as did the Army Corp. of Engineers, to go ahead and construct and fill and change course and change habitat on this fork.
3. Natural changes in flow can affect minimum flows drastically and the Braget Farm cannot be denied future use and still have present value.
4. Vagueness, uncertainty and disagreement among engineers, biologists and other quantifiers, and interpreters.
5. Lack of discussion in Draft about how this program may affect rights and values of riparian owners who may be under the cloud of forced sale or condemnation by gov't. agencies.
6. Lack of discussion in Draft whether Indians can claim title to, control of or rights to water on Federal lands and off-reservation lands (public or private).
7. Nisqually Tribal biologist and ass't. trespassed on portion of slough in issue on Sept. 3, 1980. They stunned the cutthroat and tried to tell me that they were "some kind of unidentifiable sub-species of steelhead." You can see that by calling those cutthroat a species of steelhead, they could pad the allocation numbers several times to the Game Dept. And they use figures from privately managed and owned waters and land. Then, the tribe won't release the information when requested. I suggest fraud.
8. The fact that Mounts Creek has had its name changed recently to honor Indian names rather than the historically mapped and recorded names... ie., Shore Slough, Judson's Slough, Nisqually Farms' Slough, Braget's Slough, etc I suggest conspiracy.

In my opinion this favors Indian rights instead of riparian owner's rights... at least in the minds of those who oppose private property where the desirable natural resources are located on private property.

9. Other legal reasons.
10. This program would be usurping the use and enjoyment of all use of his property granted to Walter O. Braget by the President of the U.S., the U.S Migratory Bird and Conservation Comm., the Governor of the State and the Director of Game.

Comments on Draft

Page 36, fifth paragraph.

"No large scale increase is projected..." This Statement is unfounded and in the future could be the most single important and __atle issue.

Page 36, sixth paragraph.

In the future this could be changed drastically. Non-irrigated pasture lands will be where the irrigation will be employed for the new needs and demands.

Flooding

In the past we have experienced floods in excess of natural flooding due to mismanagement by Tacoma City Light at Alder Dam. Excess damages occurred as a result of their spilling, in panic, at the wrong time to coincide correctly with natural flooding, tide levels, storms and low barometer readings.

Which is More Important?

Any fool can see that you have left out agriculture in this Draft! Agriculture must have equal consideration as do fisheries and recreationists. Since the agricultural lands usually own the riparian habitat and riparian ___ is constant pressure to wrestle these rights away from the private agricultural sector. A healthy and prosperous agriculture using the water in the public interest is equally an indicator of a healthy river system as is fisheries and is economically more valuable and more people depend on the end product.

In general, the Bragets cannot support this program in the Draft I.R.P.P. The program is incomplete, unfounded closures exist, is arbitrary, doesn't properly address agriculture, so therefore it is discriminatory.

Actually, the real danger is what has NOT been said in the Draft and that is why it should not be adopted at this time. In short, your Draft Is JUST NOT GOOD ENOUGH!

However, if you adopt this program on the 27th, we trust and pray that you will make the changes requested.

We hope that you realize that the future of the Braget Farm depends on your decision and that the responsibility rests with your department and its signatories. This farm is in a very unique position in a very unique area and needs very special consideration. Probably no other single farm or family has done more to preserve, protect and enhance the environment, had more public concern about it and its future and had more sacrifice for the family's efforts than the Walter Braget Family.

Very truly yours,
Kenneth A. Braget
Kenneth A. Braget
Manager, Braget Farm
Walter O. Braget - for
Mrs. W. O. Braget with power of attorney
Mr. and Mrs. Walter O. Braget
Owner, Operators, Braget Farm
Marion C. Braget

cc: Hollis Barnett, Atty. At Law

College of Fisheries
Fisheries Research Institute

27 January 1981

Mr. Robert Kavanaugh
Washington State Department of Ecology
St. Martin's College Campus
Olympia, WA 98504

Dear Mr. Kavanaugh:

This is in reference to W.W.I.R.P.P. Series - No. 9 report for Nisqually River Basin instream resources. Per our telephone conversation some time ago, I enclose two reports summarizing our studies of the distribution and abundance of juvenile salmonids in the Nisqually River (Tyler, 1980, FRI-UW-8009; Scott, 1981, FRI-UW-8102). The information of particular significance regarding instream flow needs is summarized on pages 40-41, and concerns the timing of incubation, emergence, abundance, and out-migration in the mainstem Nisqually River. Information on habitat preference is also given. It should be noted (p. 34) that "bank" and "bar" habitats are characterized by differences in water depth, velocity, and substrate as well as slope and cover. Catches for age 0 steelhead peaked at a higher level than those for the other salmonids. Steelhead, chinook, and coho juveniles are present in the river year-round, although presumably most of the juvenile chinook migrate seaward by mid-summer after emergence.

These results differ in some degree with the life stage timings shown in Table 1 of your draft report. For instance, intragravel development of fall chinook and coho apparently extends to June 1, and chum salmon to June 15. Although we did not specifically measure out-migration, probably the period of out-migration of juvenile chinook, coho, pink, and chum begins later than shown in Table 1 of the DOE report. Information on out-migration is being gathered by the Nisqually tribal biologists by means of their inclined plane trap sampling.

Other items that I note in the draft report:

Pages 11, 16. Average flow, 1931-1960, at National is given as 785 cfs on p. 11 and 741 cfs on p. 16.

Page 22, line 4. Steelhead spawning period is more appropriately February through June.

cont'd / . . .

Mr. Kavanaugh

-2-

27 Jan. 1981

Page 22, Lines 6-7. Steelhead incubation extends through July, but spawning is completed in June.

Page 25. I am not aware that chum salmon utilize Tanwax and Ohop creeks and the Mashel River. If they do, it is a rare occasion.

I understand from our phone discussion some time ago that the instream flows proposed by DOE can be modified in the future depending on findings of the Nisqually River Coordination Committee. It would seem logical to me that, for the present two-year period, the interim flow agreement adopted by Judge Grossman for the bypass reach be adopted. It is hoped that, at the end of the two-year period of study, better data will be available to firm up an appropriate instream flow regime for the Nisqually.

I hope you find this information useful and apologize for the lateness of my response to your request.

Sincerely,



Robert L. Burgner
Director

RLB:as
encs 2



Nisqually Indian Tribe
4820 She-Nah-Num Drive S.E.
Olympia, Washington 98503
Phone: 456-5221

January 27, 1981

Mr. Donald Moos, Director
Department of Ecology
State of Washington
Olympia, Washington 98504

Re: Nisqually River Basin Instream
Resources Protection Program

Dear Mr. Moos,

Attached to this letter is a written copy of the testimony presented by the Nisqually Indian Tribe at the public hearing for adoption of regulations to implement the Nisqually River Basin Instream Resources Protection Program. By letter dated December 30, 1980 we commented extensively on the Draft of the I.R.P.P. for the Nisqually River. We trust that you will give our comments and requests for modification of the program and regulations every consideration.

While there are certain aspects of the program that we do not agree with completely, we are generally very supportive of its contents and we compliment the Department of Ecology for its efforts to identify measures needed to protect the instream fisheries habitat of the Nisqually River. Adoption of this program will play an important role in increasing the salmonid production of the Nisqually River drainage and will provide significant benefits to all fishery interests in the state.

We also appreciate the effort taken by your department to include members of our fisheries staff in the program planning and we encourage you to continue the policy of involving tribal technical staff in future I.R.P.P.'s for other drainages.

Sincerely,



George Kalama
Chairman

NISQUALLY RIVER BASIN
INSTREAM RESOURCES PROTECTION PROGRAM

Proposed Administrative Rules

Statement of the

Nisqually Indian Tribe

January 27, 1980

By letters dated August 6, 1980 and December 30, 1980 the Nisqually Indian Tribe has submitted its comments, recommendations, and requests to the Department of Ecology regarding the Instream Resources Protection Program for the Nisqually River Basin. Our testimony today is limited to the proposed- administrative rules distributed by D.O.E. under a cover letter dated January 13, 1981.

We appreciate the effort of D.O.E. to identify measures needed to protect the Nisqually watershed and we are generally supportive of the program and its implementing administrative rules. This protection of instream resources, particularly for small tributary streams, will increase significantly the fish production of the Nisqually drainage to the benefit of all fishery interests in the state. We strongly urge adoption of the proposed administrative rules, with the following changes:

1) UPPER REACH - We request that the upper reach be added to the new surface water closures (Sec. 040, pages 4-5) for the period May 1 to October 31. It is clear from the data that there is no surplus water available for allocation during this period. The total inflow to Alder reservoir is needed to meet downstream minimum flow requirements. Failure to impose such a closure gives the illusion, and it is an illusion, that water is available for appropriation and postpones the inevitable

D.O.E. Proposed Rules

Page Two

closure until D.O.E. is forced to deny a specific water right application. The more responsible action would be to impose the closure now.

This action would also provide explicit protection for the upper reach tributaries (specifically those in Lewis County) that are now ignored in the proposed program and administrative rules. This explicit protection is necessary because the minimum flow levels established for National do not follow the same seasonal pattern as these Lewis County tributaries (see the following remarks).

2) UPPER REACH - GAUGE LOCATION - Sec. 030 (1) establishes the upper reach gauge (control point) at National. This gauge gives an inaccurate and misleading reading of the upper reach runoff, both in volume and in seasonal pattern. The National gauge measures only about 50% of the upper reach discharge, and its measurement varies from less than 40% for November- March to over 80% for July-September. This wide variation is present because the discharge pattern for the mainstem river is influenced by glacial melt whereas the Lewis County tributaries are nonglacial. Therefore, the levels of protection and protection pattern established for National cannot be transposed to these other tributaries. The proper way to monitor upper reach flows would be to calculate Alder reservoir inflow and to use that calculation as the upper reach control point. We recommend that the program and administrative rules be so modified.

3) BYPASS REACH FLOWS - All parties to the FERC proceedings now underway on the Nisqually River have agreed, after long discussion and compromise, to a minimum flow of 500 cfs for the bypass reach for the months of June and July. As we discussed in our earlier letters, we feel strongly that the

D.O.E. program and regulations for June and July should conform to the flows previously agreed to and ordered by FERC (i.e. 500 cfs rather than 450 cfs and 400 cfs respectfully).

4) MUCK CREEK - Section 070 of the proposed administrative rules provides that domestic use shall be exempt from the provisions of the I.R.P.P. administrative rules. However, it also provides that should the "cumulative effects of single domestic diversions seriously affect the quantity of water available for instream uses, then only domestic in-house use shall be exempt if no alternative source is available." As we stated in our earlier letters, such is now the case for Muck Creek and we therefore request that Muck Creek and its tributaries be totally closed, as provided in Sec. 070, and that the administrative rules be modified to reflect this total closure.

5) CLOSURE DATES - For reasons detailed in earlier letters to D.O.E., we request the following changes be made in closure dates for the streams indicated:

Mashel River - change June 1 - October 31
to April 1 - November 30

Tanwax Creek - change April 1 - October 31
to April 1 - November 30

Red Salmon Creek - change April 1 - November 30
to All Year

6) SEC. 100 - REGULATION REVIEW - We recommend that the sixth (6th) word in line three (3) be changed from 'may' to 'shall.' This change will clarify what we understand to be the intension of the section.

These are the only changes we have to present today. We commend D.O.E. on this important resource protection program and, again, we urge its adoption.

NISQUALLY RIVER BASIN INSTREAM RESOURCES PROTECTION
PROGRAM ADOPTION HEARING - 27 JANUARY 1981
GAME DEPARTMENT STATEMENT

HAL A. BEECHER

We have once again reviewed the most recent draft of the Nisqually River Instream Resource Protection Program. We cannot agree to flows which would undermine the FERC agreement and harm the steelhead population. We do not understand the reason for establishing a different flow. Several conflicting interests in the FERC Committee used the best available information to determine that 500 c.f.s. should be the minimum steelhead incubation flow for the bypass reach.

Smooth working of the FERC agreement is necessary to protect native runs of anadromous fishes in the Nisqually River. The Nisqually Instream Resources Protection Program does not provide adequate protection for flows upstream from Centralia's power plant. Inadequate flow protection could cause a breakdown of the agreement and a consequent loss of fish production.

JOHN SPELLMAN
Governor



DONALD MOOS
Director

STATEMENT of the U.S. FISH and WILDLIFE SERVICE
on the proposed NISQUALLY RIVER BASIN INSTREAM
RESOURCE PROTECTION PROGRAM (173-511 WAC)

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 - Olympia Washington 98504 - (206) 753-3800

The U.S. Fish and Wildlife Service endorses the concept of the proposed Nisqually Instream Resource Protection Program, but we believe it is premature to establish specific flows for the bypass reach of the river. Your proposed flows differ from those that have been negotiated in the ongoing FERC proceedings, and even those FERC flows are subject to change pending the outcome of additional field studies. This confusion could be avoided by not making reference to specific flows at this time. If you do adopt the program in its present form, we will join with other fishery agencies in requesting a review of the bypass reach flows as soon as the FERC flows have been finalized.

We continue to support the goals of the instream resource protection program, namely, the preservation and enhancement of publicly-owned instream resources through sound water management.

ORAL TESTIMONY

Given By

KEN BRAGET

At

NISQUALLY RIVER INSTREAM RESOURCES PROTECTION PROGRAM

ADOPTION PROCEEDINGS

JANUARY 27, 1981

Mr. Yates, Mr. Spencer, Mr. Kavanaugh, ladies and gentlemen of the audience. My name is Ken Braget, I am a lifelong resident of the Nisqually River Basin. I am here this morning to represent the interest of the Braget farm.

Before I start, I want to publicly thank Mr. Robert Kavanaugh, to my left here. I wouldn't be standing here had he not informed me of these proceedings. And I want to thank his and the department for all of the fine cooperation that we have received.

Old biblical phrase "All rivers run into the sea yet the sea is not full. Unto the place from whence the rivers come, thither they return again." Now every kid that has gone through junior high school science has had the water cycle taught to him. And the Creator that put this earth together has had it figured out so that as long as the rivers run, they are replenished and run in perpetuity. Another significant thing about that little biblical phrase is that my father, Walter O. Braget testified in a court of condemnation using that phrase so it has a historical value and meaning to me and the Braget Family. Maybe in the near future we will be testifying in another court of condemnation. Now I can tell you the Braget Family has already been through more courts of condemnation than any particular single one family should ever have to put up with. Bragets have also appeared in more hearings and court cases involving the protection enhancement and the preserving of the environment and the habitat down on the Nisqually than any single person in this room, maybe even more than the whole group united. Now, the last time I testified, I said some phrases such as "this is a bureaucratic rip-off of private property rights and the resources that are maintained or contained within the boundaries of private property." Water rights have almost made a complete circle from the time of kings, when the kings owned everything within the boundaries of their kingdom, to now where the water rights and their uses are going to be dictated to all of those but the owners. In other words, the nonriparian nonlandowning population is going to have more say and control than actually those who have deeded riparian appropriative and historical use of the rights. Basically, who do I speak for here today, well besides the interest of the Braget Farm, I think I had better speak up for every land-owning and agricultural-owning person that has land on any of the tributaries off of the Nisqually River. Most of them don't know what's happening, and they are not here to protect their interest and they are going to wake up and they are going to find out that they have been frozen and that in the future they may never get their dreams or their plans or projects or their alternative incomes from their land, but they are asked to pay the higher and better taxes, they are asked to keep on working, producing, well, I have a new concept to propose here today, that those landowners who protect the riparian habitat should also share in the rewards of the natural resources that they have protected and preserved if

there is any reward to be had. Show - who had some concern, and who did the work, and who did foot the bill. Now for the program in general, this whole Nisqually River Basin Instream Resources Protection Program, I cannot endorse it, it is not good enough in my words. I have been told there are time factors, there are power struggles between federal, between state, and of course we all know that power struggle and the control of resources as had come down between phase 1 and phase 2 treaty decisions.

Basically, what the Braget Farm is asking for Mr. Spencer, is an omission from this program, and all your zealous, I am speaking now to the environmentalist groups and the agencies, and all your zealous studies. In seeking out of every tributary and every creek and every flow, you made one glaring omission, and I can't see how you did it. But the Braget Farm has been concerned with and has gone to the highest appeal level of this department in trying to protect a particular branch of Mounds Creek. So it is here, today, that I am specifically asking to be removed from the program entirely, that branch, which is entirely encompassed within the dyking network of the Braget Farm. There has been no testimony to conflict with that and as in my written testimony that Mr. Spencer has, every agency from Pierce County Planning Commission, Pierce County Hearing Examiner, State Department of Ecology, Army Corps of Engineers, U.S. Fish and Wildlife, Department of Game, and Department of Fisheries have given permits to fill, change the habitat and the environment, to the Department of Transportation on that creek. Now if all in what's fair, if the state itself, can dig around and fill and change habitat, and possibly damage the environment or the amenity or the resources some of which are part of a network of the largest diking, ditching, tiling, water resource network made in the history of this state. We have Little Holland down there on the Nisqually and some of these WAC, administrative codes, can take control of and take the resources of, of generations of planning, work, investments and make them all for nothing. What I am saying is, is in a court of condemnation, when a landowner has to prove up the value of his land, I can tell you from my own experience. That after you peel off Shoreline Management Act and then you peel off this administrative program you just about have five cents on the dollar left, now that is why I am here today. We are not enemies against the environment or the habitat, we are the protectors and I stand here, let's see how many of you can compare in a championship of it, or in the stewardmanship of it. Now while you are thinking that over, Mr. Yates is going to ask me to please summarize.

You are quite a bit over the six-minute time limit Mr. Braget. If you could summarize.

I have to come down here and speak off the cuff unprepared because I am busy at home working all the time, and that's why I wanted to thank Mr. Kavanaugh, he made sure that the farmers had a chance to come to town, even though they are omitted from this program. Thank you all.

We will recess this hearing for about 5 minutes and then reconvene. This hearing is officially recessed at 10:40 and it will reconvene approximately at 10:45.

We will now reconvene, it is now 11:06. I would like now to turn this proceeding over to John Spencer, Acting Director for the Department of Ecology. Mr. Spencer will make a decision on this program.

Thank you Henry. I want to thank everyone for being here today, and I also understand that many of you have participated in our previous hearings, and meetings, and subcommittees, and other efforts to try to keep everyone informed in the process of this regulation, so I extend my thank you very much for your efforts and activity. The study of minimum flows, probably more than any other actions this department takes, exemplifies the position that we are in terms of being in between, power and agriculture, power generation, agriculture, being in between fisheries flows and power development, being in between existing historical uses and future development of a resource, etc. So I appreciate both the testimony and its substantive value and also I appreciate it from its historical and also the emotional value that is associated with it. I have remarks to make with respect to the testimony that was given here this morning and I do want to make a few comments for the record so that our actions will be reflected to the future administration of the decisions.

First of all there was a request with respect to the upper basin, that the upper basin be closed to all future uses. We have considered that, and in fact earlier proposals had recommended that the upper basin be closed. We considered it again and still remain convinced that it should not be closed as was requested. One, most future uses in the upper basin will be nonconsumptive; two, we would continue to maintain that the upper basin as being open as for as any storage facilities, because storage facilities in that area, if they are ever proposed or constructed, would be beneficial, both to the maintenance of minimum flows and also to the future development of the basin. We will notify all people who have been participants in this program of any proposal to establish rights in the upper basin, whether they be for consumptive or nonconsumptive uses. Also any future right that might be established in the upper basin would be subject to non-interfering with already established existing rights, senior right holders.

The minimum flows that are established under any regulation of this department do constitute, do establish a priority date as of the date of the adoption of the regulation. Future rights would be subject to the minimum flow. There is quite a bit of testimony with respect to the bypass reach. We have looked at various proposals of closing that reach and not saying anything else with respect to the minimum flows. We have looked at various flows that we feel would be appropriate in that reach and we have looked at the federal Energy Regulatory Commission Interim flows that have been established for that reach. We continue to recommend the establishment of the flow that we have published in our latest document, basically because

we are establishing a minimum flow and we recognize the FERC flows to be flows that are aimed at enhancement and/or production type flows. Our law does not lend itself toward establishment of production or enhancement flows. We will be able to review this regulation at any time that the FERC eventually establishes a flow for that reach of the Nisqually and at the time that they adopt a final or firm flow for that reach. Of course, as far as any instream uses that are regulated by FERC, their regulation would supersede ours but not the types of its uses such as diversionary or uses that would be not subject to FERC regulation.

Closure dates - we discussed the suggestion on the closure dates. We do not feel that those closure dates should be changed. They are established basically to coincide with the time on the average annual basis at the time the flows in the river begin to recede.

With respect to changing the requirement for a review from a discretionary one as it is stated now "may" to a one that's a "shall", we cannot bind ourselves to review and update this regulation at anytime someone requests as that "shall" would establish. We are committed to reviewing it once in any four year time and to consider request to review and update it when they're made but to say that we shall review and update the program whenever anyone requests it would put us in a position of potentially reviewing it and updating it weekly. There would be no certainty in the program if we would adopt that type of a provision.

With respect to Muck Creek - the request to establish uses out of Muck Creek is in-house only. That is discretionary with us, we accept the testimony that was given. We consider that testimony to be relevant and pertinent to our operation. We will establish an administrative procedure that will allow only the in-house use diversion out of Muck Creek as requested.

Mounds Creek. I have read your testimony this morning, Mr. Braget, that was delivered in writing, and I have listened to your testimony here today and I have reviewed the documents that had a record of your testimony in the past and I certainly have a lot of empathy for the situation that your family and your farm has been through with the various government developments in that area. We looked at your request to exempt that part of the stream that's within your farm, here. That's what took us so long and I must say that if it was in my power to say this parcel of land was exempt and that parcel was not exempt I would like to do that, but I do not have the authority. I have to either completely eliminate the program from that entire stream or carry on in some fashion. The precedential nature of, say, eliminating farm by farm would be contrary to the intent of the law. I do want to make some comments though for the record, because I think it is relevant to your situation. First of all, in your letter you have noted various uses that you have made from Mounds Creek and other waters available in that area, with respect to your riparian rights and rights that may have been established prior to establishment of the Water Code in the State of Washington. Those constitute vested rights. You, possibly, and I couldn't tell from your letter, have established rights from Mounds Creek as a matter of appropriation under the Water Code. Taken together, you have established claims to water use down there at the bare minimum, if not established, well founded rights.

I want the records to show that this program does not and cannot interfere with the exercise of your existing rights, whatever those rights may be. Also the record should show that any use that you would want to make from that creek that is of a nonconsumptive nature would be allowed.

Finally, the Nisqually River, of course, has a minimum flow set for it. Nisqually River has a minimum flow. The minimum flow we have set for that part of it is approximately a one in one-hundred-year event type of flow so that diversions from Nisqually for uses on your farm would be within any definition that we have of a firm water supply, you would be able to exercise. So there is water still available clearly from the Nisqually River for uses.

With that then in the record, and having commented on the other points that were made here this morning, I here now adopt the Minimum Flow Instream Resource Program for Nisqually River.

DEPARTMENT OF
OLYMPIA
JAN 20 11 AM '82

Jan 27, '82

Dear Sir,

Please adopt the proposed
Nisqually Instream Resource
Protection Program without
any changes.

Thank you,
D. McFinnigan

cc: Yates
Zeller

APPENDIX D
CONVERSION TABLES

Conversion Tables
(U.S. and Metric)

VOLUME

Unit		Liters	U.S. Gallons	Cubic Feet	Cubic Meters	Acre-Feet
1 Liter	-	1.0	0.2642	0.0353	0.001	0.00000081
1 U.S. Gallon	-	3.785	1.0	0.134	0.0037	0.00000307
1 Cubic Foot (62.4 lbs water)	-	28.317	7.481	1.0	0.0283	0.0000230
1 Cubic Meter	-	1,000	264.2	35.315	1.0	0.0008107
1 Acre-Foot	-	1,233,500	325,851	43,560	1,233.5	1.0

1 U.S. Gallon = 231 cubic inches = 0.83 Imperial Gallons (= 8.3 pounds of water)

1 Liter = 1,000 cubic centimeters = 1.05 quarts (= 1,000 grams of water)

1 Cubic Hectometer = 810.7 acre-feet

RATE OF FLOW

Unit		gpm	cfs	mgd	cu m/sec	maf/yr
1 U.S. Gallon per Minute (gpm)	-	1.0	0.002228	0.001440	0.0000631	0.00000161
1 Cubic Foot per Second (cfs)	-	448.8	1.0	0.6463	0.02832	0.000724
1 Million U.S. Gallons per day (mgd)	-	694.4	1.547	1.0	0.04381	0.00112
1 Cubic Meter per Second (cu m/sec)	-	15,850	35.31	22.82	1.0	0.0256
1 Million Acre-Foot per year (maf/yr)	-	619,960	1,381	892.9	39.1	1.0

1 Liter per second = 15.85 gallons per minute

1 Cubic Foot per Second = 1.98 acre-feet per day = 724 acre-feet per year

Other

1 Acre = 43,560 square feet (209 x 209 feet) = 0.405 hectare

1 Hectare = 10,000 square meters = 0.01 square kilometer = 2.47 acres

1 Kilowatt-hour (KWH) = 0.001 megawatt-hour (MWH) = 3,413 BTU