IV. Core Elements

➢ HABITAT

Habitat is Key

ENSURING ADEQUATE WATER IN STREAMS FOR FISH

I. Current Situation: *Where are we now?*

Background

Instream flows are defined as the amount of water needed in streams and rivers for aquatic life, water quality and other instream values that occur in them. Instream flows are necessary to ensure that sufficient amounts of water are available for fish to survive and reproduce, for boats to navigate, and people to swim and enjoy. The focus of this strategy is only on the water needs of fish. Sufficient flows for fish generally will also suffice for water quality, and aesthetic purposes. Recreational boating needs may in some cases and in some seasons require more water than is needed by salmonids.

Insuring adequate quantities of cool, clean water during seasonal low flow periods is a key habitat requirement for sustainable fish production in streams. Among the many factors contributing to the poor status of many wild fish stocks is the lack of stream flow to sustain healthy production levels during the low flow periods. Human activities have resulted in some streams being appropriated to dry streambed conditions during the low flow period in the summer. See Chapter II. Background: Setting the Context.

State law made no provision to protect instream flows prior to the middle of the 20th century. Thus, nearly 100 years of water rights development in the state occurred without regard to the effects of dewatering streams on fish and other instream values. It was not until 1949 that first legislative action was taken to recognize the importance of flows to fish.

The Department of Ecology has made a concerted effort to condition certain water rights with flow requirements since 1949, and to establish instream flows from 1976 through 1986 by rule in 19 watersheds. That is only about 30 percent of the state's watersheds. Approximately 350 lakes and streams in our state are currently closed to further withdrawals of water, and low flow provisions have been applied to individual water right permits on approximately 250 other streams.

Most major water development in the state occurred, however, before instream flows were established. Consequently instream flows that have been established by rule since the mid-

1970s are junior to most existing diversionary water rights. Most of them are frequently not met (e.g. on average, instream flows in the Cedar River are not met 81 days/year and the number is increasing). In addition, in only five watersheds where instream flows have been set has there been any effort made to regulate conditioned water uses to the flows. In some cases, too few new rights have been issued after the flows were set to justify the considerable expense of setting up a regulatory program. In other cases, Ecology has lacked the resources to establish a regulatory system.

From 1986 through 1997, the establishment of instream flow protection rules was put on hold due to an ongoing policy debate on how to provide additional water for fish and for growth/development given limited water availability being experienced in many areas of the State. Numerous attempts were made by state executive and legislative leaders to break the policy deadlock for over a decade, but without lasting success. A 1993 state Supreme Court ruling provided some guidance on this issue. In Jefferson County PUD v. Ecology, the State Supreme Court upheld Ecology's use of flows as high as the "optimum" flow for fish to condition a proposed hydropower diversion on the Dosewallips River. This did not resolve the politics concerning the appropriate level of instream flows to protect fish, but it did resolve the legal issue. Subsequent state level court decisions have ruled that ground water development may not be allowed if it impairs existing surface water rights, including instream flows adopted by rule.

Although establishment of instream flow requirements were frozen for over a decade, important information was being collected during that time. Ecology, WDFW, Tribes, local governments and other state and federal agencies have collected and published extensive studies, data and information on instream flow needs; water availability; level and location of population growth and development; condition, status, health and causes for decline of wild salmon stocks; and priority areas where flows are problems for fish.

Regardless, **no new instream flow requirements** have been established in the past 14 years while the state's population has grown by 30%. Based on the Department of Fish and Wildlife's analysis many fish stocks are in rapid decline due in part to the lack of adequate flows for fish. There is urgency to set, protect and restore instream flows. Flow management is one the more well-established state authorities that can be brought to bear on the myriad causes of poor fish stock health.

Assessment of adequacy of instream flows

The State Salmon Recovery Office categorized 32 of the state's 62 water resources inventory areas for health of salmon and steelhead stocks, water availability, and risk to stocks from future population growth. (See report on "Summary of Instream Flow Conditions by WRIAs" contained in Appendix B.) The following map is of these watersheds. The five categories are as follows:

- *Overappropriated basins*. Category I includes sixteen WRIAs in which more water has been allocated through water rights, claims and exempt withdrawals in all or significant parts of the watershed than is naturally available for at least part of the year when instream flow needs are also accounted for, and in which one or more fish stocks are listed under the ESA or are proposed for listing. Some of the basins have instream flows set by rules but they are frequently not met.

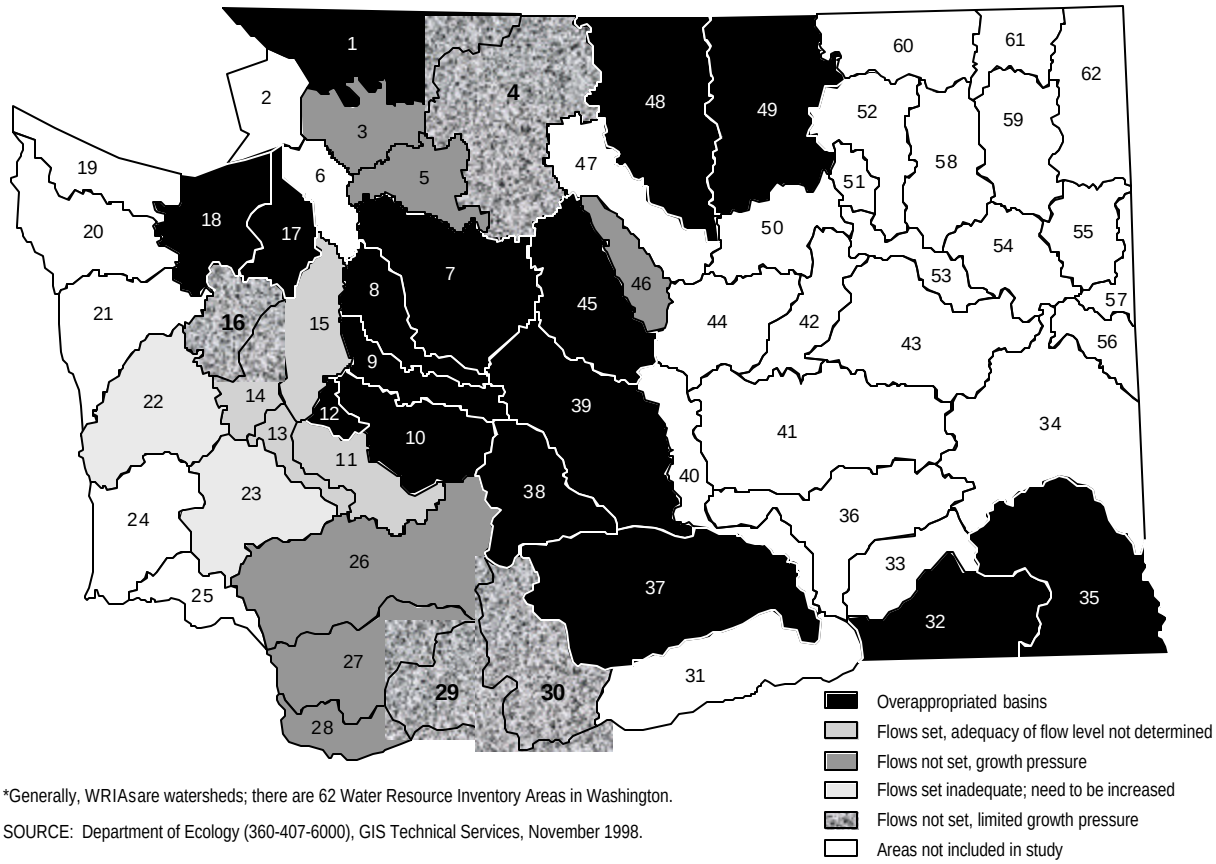
- *Basins with existing flows that are inadequate and need to be increased*. Category II includes two WRIAs in which instream flows have been established but appear to be inadequate according to subsequent studies. They do not have fish stocks either listed or proposed for ESA listing but are believed to have the potential to be listed.

- *Basins where adequacy of existing flows have not been determined*. Category III includes four WRIAs with instream flows established but in which no subsequent review or study has been completed to determine adequacy and in which listings have occurred or have been proposed.

- *Basins with no instream flow requirements set and which are experiencing growth pressure*. Category IV includes six WRIAs where instream flows have not been set and where there is or will likely be significant development pressure. These basins are in relatively good condition, but could deteriorate unless instream flows are established and maintained.

- *Basins with no instream flow requirements set and with limited growth.* Category V includes four WRIAs where instream flows have not been set and where development pressure remains limited now and/or in the foreseeable future. These are generally low priority basins for receiving immediate attention.

Map 3. Summary of Instream Flow Conditions by WRIA



*Generally, WRIAsare watersheds; there are 62 Water Resource Inventory Areas in Washington.

SOURCE: Department of Ecology (360-407-6000), GIS Technical Services, November 1998.

1 Nooksack	17 Quilcene-Snow	33 Lower Snake	49 Okanogan
2 San Juan	18 Elwah-Dungeness	34 Palouse	50 Foster
3 Lower Skagit-Samish	19 Lyre-Hoko	35 Middle Snake	51 Nespelem
4 Upper Skagit	20 Soleduck-Hoh	36 Esquatzel Coulee	52 Sanpoil
5 Stillaguamish	21 Queets-Quinault	37 Lower Yakima	53 Lower Lake Roosevelt
6 Island	22 Lower Chehalis	38 Naches	54 Lower Spokane
7 Snohomish	23 Upper Chehalis	39 Upper Yakima	55 Little Spokane
8 Cedar-Sammamish	24 Willapa	40 Alkali-Squilchuck	56 Hangman
9 Duwamish-Green	25 Grays-Elokoman	41 Lower Crab	57 Middle Spokane
10 Puyallup-White	26 Cowlitz	42 Grand Coulee	58 Middle Lake Roosevelt
11 Nisqually	27 Lewis	43 Upper Crab-Wilson	59 Colville
12 Chambers-Clover	28 Salmon-Washougal	44 Moses Coulee	60 Kettle
13 Deschutes	29 Wind-White Salmon	45 Wenatchee	61 Upper Lake Roosevelt
14 Kennedy-Goldsborough	30 Klickitat	46 Entiat	62 Pend Oreille
15 Kitsap	31 Rock-Glade	47 Chelan	
16 Skokomish-Dosewallips	32 Walla Walla	48 Methow	

Current Applicable Policies and Programs

1. Statutory Foundation of the Instream Flow Program

Much debate has occurred over many years regarding the meaning of key statutory terms (highlighted below). Case law in recent years has determined that Ecology has considerable discretion in determining the level of instream flow to protect upon considering the character and value of the stream and its instream resources. The following four statutes form the basis of Ecology's instream flow program:

- The state Fisheries Code (*RCW 75.20.050*) in 1949 was the first state law recognizing the need to protect a flow instream to **adequately support** fish. This provision has been used to deny or condition water rights since 1949.

- A more systematic approach was set forth in the 1967 Minimum Water Flows and Levels Act (*Chapter 90.22 RCW*). It permits Ecology to establish **minimum flows** or levels on streams and lakes by regulation for the purpose of **protecting** fish, game, birds, and other wildlife, recreational or aesthetic values or water quality.

- The Water Resources Act of 1971 (*Chapter 90.54 RCW*) requires Ecology to establish and protect **base flows** to **protect and preserve** a variety of instream beneficial uses, such as fish, wildlife, navigation, recreation, aesthetics and other environmental values.

- The Water Code (*Chapter 90.03 RCW*) was amended in 1979 to clarify that minimum or base flows adopted by rule are appropriations of water (i.e. water rights) with priority dates as of the effective date of the rule under which they are established. The code also requires that Ecology condition any subsequently issued water rights with the flows adopted by rule. This means that when the flows are not being met, conditioned water rights must cease to divert or withdraw water. Finally, the water code authorizes Ecology to deny a water right application if it would impair any other existing water right or if it would be detrimental to the public interest. This authority provides the basis for Ecology to close streams to further consumptive appropriation.

- Legislation passed in 1997 and 1998 authorizes locally based planning groups to develop watershed management plans that must establish a water budget for the watershed and may, at the option of the group, address instream flows as well as water quality and fish and wildlife habitat (Watershed Planning Act *Chapter 90.82 RCW*). If addressed, instream flows must be set within four years after receiving a Phase 2 watershed assessment grant. When the planning committee reaches agreement on minimum instream flows for streams where they currently do not exist, Ecology adopts a rule to implement the decision. If the planning committee decides instream flows should be established, but cannot reach a decision within four years after beginning its watershed assessment, then Ecology may set the flows in consultation with "affected tribes." Any instream flows and other water allocations proposed by a planning group would generally have to undergo rule-making by

Ecology to be implemented. Under the law a planning group cannot obligate a state agency to implement a portion of the plan for which the agency has responsibility without the consent of the agency. This means that Ecology must first agree with the instream flow levels for them to become a part of the plan.

- The state may acquire "trust water rights" under two statutes passed in 1989 (*Chapter 90.38 RCW*) and 1991 (*Chapter 90.42 RCW*). Trust water rights can be acquired by purchase, lease, gift or conservation of water. They are rights held by the state for various purposes that may include instream flow augmentation.

- Several statutes prohibit the waste of water. The 1993 Grimes v. Ecology decision of the State Supreme Court provided useful guidance regarding beneficial use and waste of water. In essence water users have an obligation to use water in a reasonably efficient, non-wasteful manner and efficiency requirements may become more strict over time as available technology improves, local standards advance, and competition for limited water becomes more intense.

- State law provides that a water right is relinquished (forfeited) back to the state if it goes unused for five consecutive years without good cause (such good causes are listed). Common law abandonment is also recognized in Washington State. Under the abandonment doctrine, a water right is forfeited if the user ceases using it and does not intend to restart the use. The user's behavior, e.g. failure to maintain facilities, is prima facie evidence of intent (see Okanogan Wilderness League v. Twisp). Relinquishment and abandonment do not put water back instream but do remove paper water rights from the records that might otherwise be reactivated.

2. Other Legal Mechanisms for Instream Flows

Several federal laws and common law doctrines under federal and state law may prove to be potent tools to identify, protect and restore instream flows. These are Federal and Indian reserved rights, the Federal Clean Water Act, the Federal Power Act, and the Public Trust Doctrine.

- Court rules have affirmed that Federal and Indian reserved water rights were by implication established when the federal government set aside (reserved) certain public lands for specific purposes. This means that each National Forest, National Park, military reservation, wildlife refuge, Indian reservation, etc. has an associated water right for the reservation's primary purposes. Some of these purposes require offstream use while others require that water be retained instream within streams on the land reservation. These rights have a priority date of the date the reservation was established. Most Indian reserved rights date back to the 1850s when the reservations were established by treaty. For the most part these rights have not been quantified under a general adjudication of water rights. An

exception is in the Yakima basin where an ongoing adjudication has preliminarily quantified such rights for various federal reservations and for the Yakama Indian Nation's reservation.

- Indian treaties in the Pacific Northwest also reserved to the Indian tribes the right to fish in common with the other citizens of the territory (now the states). Courts have interpreted this language to mean that tribes are entitled to half the harvestable salmon and steelhead (of both wild and hatchery origin). The tribes share management status over fish runs with the state. Tribes also asked the courts to find that the state is burdened to protect the environment that supports treaty fisheries. Court cases throughout the Northwest have generally supported this claim, specifically with reference to water flows required to sustain the fish runs encompassed by the treaty fishing right. For example, in the Yakima basin, the Court has confirmed that the Yakama Indian Nation has a treaty secured right to adequate flows in the Yakima River and tributaries to sustain fish. This right has a priority date of time-immemorial (obviously predating non-Indian water uses). The U.S. Bureau of Reclamation has a trust obligation to ensure that these flows are provided in the Yakima basin, even if providing them occurs at the expense of other water needs.

- Court rulings have determined that provisions of the Federal Clean Water Act may affect the use of water under a state issued water right. The U.S. Supreme Court ruled in Jefferson County PUD No. 1 v. Department of Ecology that water rights savings provisions in the Clean Water Act do not limit the scope of water pollution controls that may be imposed on users that have obtained a water right. The decision upheld Ecology's conditioning of a section 401 water quality certification for a proposed hydropower project with instream flows necessary to protect fishery uses of the Dosewallips River designated under the state's water quality standards.

- A case that may provide additional guidance is presently under litigation (Pend Oreille PUD No. 1 v. Department of Ecology – accepted for review by the Washington State Supreme Court). Other possible applications of state (or federal) Clean Water Act authority (such as requiring "best management practices" by water users to reduce the dewatering impairment of designated instream water uses) are untested and would be controversial. These include requiring "best management practices" by water users to reduce the dewatering impairment of designated instream water uses and regulating water uses that contribute to listings of streams on the Clean Water Act 303d list due to inadequate streamflows for preserving designated instream water uses.

- The Federal Power Act regulates development and use of waterways for hydroelectric power production. As indicated in the Clean Water Act discussion immediately preceding, states appear to have relatively strong authority under the CWA to condition the operation of such projects with instream flow requirements. Additionally, state and federal fish and wildlife agencies and tribes may make recommendations to the Federal Energy Regulatory Commission regarding license or relicensing conditions needed to protect fish and wildlife

(including instream flow requirements). FERC must give deference to the expertise of the agencies and must consider the recommendations, but may reject or modify them. For smaller projects seeking approval under license exemption provisions, the agencies' recommended terms and conditions are mandatory on the project. (See also the section of this report on Hydropower.)

- The public trust doctrine is an English common law doctrine that is traced back to Roman law. The doctrine holds that the government cannot alienate public rights in public resources (such as water). The doctrine is best developed with regard to tidelands and the protection of public navigation rights. The California Supreme Court has advanced the application of the doctrine to upland streams in a manner that affects existing state issued water rights. In the leading case on the doctrine, the city of Los Angeles was required to reduce diversions of streams feeding Mono Lake to reverse the decline in the level of the lake. The court ruled that the state has continuing jurisdiction over the water rights and may review and modify them to accommodate the public trust. Several attempts have been made to assert the public trust doctrine to challenge water rights or impose instream flow requirements on older water rights in the State of Washington. So far these attempts have been unsuccessful.

3. Process for Establishing Instream Flows

Ecology is authorized by law to establish instream flow levels by rule and on a case-by-case basis where appropriate. Setting instream flows is a process involving other state and federal agencies, affected tribes, interested parties, and the general public. Setting minimum instream flows under current state law does not affect existing water rights within a watershed basin, nor does it put water back into a stream.

- The process used by Ecology to set an instream flow usually begins with consultation with other natural resource agencies and affected Indian tribes during a scoping process. The agencies and tribes may elect to be involved at every stage of instream flow development, including prioritizing streams to be addressed, assisting in studies, providing data, making recommendations and reviewing proposed rules and draft reports.

- Ecology conducts technical studies on each stream of interest with the target watershed. The Departments of Ecology and Fish and Wildlife often use the Instream Flow Incremental Methodology (IFIM). IFIM is a series of computer models that predict the amount of available habitat as a function of increases or decreases in stream flow. IFIM is a credible but data intensive method. Another method used in Washington is the simpler "toe width" method. Field measurements are taken of the width of a stream channel from the toe of each bank. The measurements are used to predict the flow that would provide the best conditions for fish spawning and rearing. This method was developed using measurements similar to those used in IFIM. The toe-width method is generally used in lower controversy and low budget situations.

- Ecology may be assisted by other agencies and tribes to establish instream flows. The study results are evaluated and recommendations are solicited from the fishery agencies and tribes. Based on these recommendations and discussions and Ecology's own analysis of supporting data, the agency, after extensive public involvement, adopts the recommended or revised instream flow levels into a rule.

- Where instream flows have not be established by rule, Ecology retains the authority to condition a new water right with flow requirements determined on a case by case basis in consultation with the Department of Fish and Wildlife (under the fisheries code provisions). Such case-by case flows usually rely on existing information and the best professional judgment of Fish and Wildlife and Ecology biologists.

- Once established by rule, an instream flow is an appropriation under the law with a priority date as of the effective date of the rule establishing it and must be protected as an existing water right.

4. Protecting Instream Flows

Establishing instream flows by rule is a wasted effort unless follow-up efforts are made to protect those flows from further diminishment. Instream flows are, as stated above, a water right under Washington law that can be protected from diminishment by junior water users, by unauthorized, excessive, or illegally expanded water uses, and by the inappropriate use of exempt ground water withdrawals. Therefore:

- All subsequently established water rights are junior in priority to the instream flow and water right applications pending at the time an instream flow is adopted will, if issued, be conditioned by those instream flows when the water right is granted. When the flow of the stream falls below a specified level, water rights provisioned to those flows must cease diversion until the instream flow is met or exceeded. In addition, water uses can be required to measure and report on water diversion and withdrawals to assure that users are remaining within their authorized quantities.

- A stream may be closed to further consumptive appropriation if it is determined that no water remains available after existing water rights and instream flows are taken into account. When a stream is closed to further consumptive appropriation, no further rights are issued for diversion during the closure period. New rights to take water during the closure period are denied.

- Ecology seeks to relinquish unused water rights when they come to its attention in the course of other work. When Ecology approves a water right change it limits the proposed water use to the quantity that remains unrelinquished and to the minimum necessary to accomplish the stated purpose using efficient means of conveyance and application of water.

Often this returns some water to the system by reducing the amount that can be diverted or withdrawn. Under current law, this water may or may not benefit the stream depending on whether there are unsatisfied junior water rights that can claim and utilize the saved water.

5. Current Instream Flow Activities

Legislative appropriations were made to Ecology in FY 1999 and to provide grants to local groups. Grants were issued to twenty-seven watershed groups to start work on water allocation and instream flows needs. Ecology also received funds to provide technical assistance to watershed planning efforts. Some of these funds were allocated to rebuilding the state's capacity to carry out instream flow studies and to provide information and recommendations to local planning groups regarding instream flow needs. An additional four to five watersheds will be enrolled this biennium.

The Departments of Ecology and Fish and Wildlife recently completed new instream flow studies for the first time in many years. These studies are for streams in southwest Washington in support of watershed planning and steelhead recovery efforts in Grays-Elochoman (25), Cowlitz (26), Lewis (27), Salmon-Washougal (28), and Wind-White Salmon (29) WRIAs. Ecology is a signatory to a memorandum of understanding to develop and adopt instream flows for the Lower Skagit WRIA (5). In addition, Ecology has existing commitments to adopt rules setting instream flows for the Dungeness (18) and Quilcene (17) WRIAs and to assist in implementing flow restoration efforts in the Methow (48) WRIA.

As of December 1998, watershed planning initiating entities have indicated an interest in addressing instream flows in eight of the twenty-seven watersheds (WRIAs), including Nooksack (1), Nisqually (11), Chambers-Clover (12), Deschutes (13), Quilcene-Snow (17), Elwha-Dungeness (18), Entiat (46) and Methow (48). Several watershed areas continue their scoping process and could decide to opt for or against addressing instream flows. *Note: nine out of the 12 basins have instream flows already set by rules. The efforts of the planning units and Ecology will be to modify them by increasing the level and insuring that instream flows are set in all tributaries critical for fish [see map and table for details].*

Instream flows are also of interest in the central Puget Sound/Tri-county discussions, affecting another four WRIAs: Snohomish (7), Cedar-Sammamish (8), Duwamish-Green (9), and Puyallup-White (10). Although these are not areas engaged in planning under chapter 90.82 RCW, they have an active collaborative process underway. Parts of two of the areas, the Cedar River and the Green River are the subject of Habitat Conservation Plan (HCP) development under the federal Endangered Species Act by the city of Seattle and the city of Tacoma respectively. In both cases, instream flows are a major concern.

See report in Appendix B where instream flows have been established and where technical information is available to support the establishment or update of instream flows.

Overview of the Chapter
The overall strategy for instream flows described in this chapter is based on the following key elements:

1. Collaboration between state and local governments, Indian tribes, and water and fish interests to develop locally tailored, basin specific solutions to the problem of instream flows, water allocation and salmon habitat wherever that opportunity exists. This includes watersheds undertaking watershed management under Chapter 90.82 RCW or other watershed or regional efforts that are addressing instream flows and salmon habitat restoration efforts.

2. Prioritization of watersheds for setting, protecting and restoring instream flows based on the health of fish stocks and the risk of diminishment of those stocks. Watershed priorities will determine where effort and resources will be concentrated at any given time.

3. Requirement to implement "baseline actions" in all basins in the state including those with watershed planning efforts. Implementing baseline actions will be initially for the highest priority watersheds and as soon as practicable in all watersheds with stocks listed or potentially listed under the Endangered Species Act.

4. Requirement to implement "immediate actions", until flows are established and protection and restoration actions are implemented, to prevent further decline in instream flows in watersheds with fish stocks that are listed under the Endangered Species Act or that have the potential to be listed, are spelled out.

5. Requirement to implement "default actions" if local collaboration fails to address the establishment, protection and restoration of instream flows in a timely manner.

6. Implementation of monitoring and evaluation measures to track progress toward meeting instream flow protection and restoration goals and objectives.

The chapter describes in details the actions needed to protect and restore instream flows. These actions will be taken either as "immediate actions", "baseline actions", or longer term actions which require time, extensive resources and will be implemented as part of the collaborative process.

II. Goal and Objectives: *Where do we want to be?*

Goal:
Retain or provide adequate amounts of water in streams to protect and restore fish habitat required by wild salmonids.

Objectives:

- Establish instream flows for watersheds that support important fish stocks.

- Protect instream flows from being diminished by new or expanded water uses (legal or ongoing illegal uses) and by changing land uses. This must be done in the larger context of ecosystem protection.

- Restore instream flows by putting water back in streams where flows are diminished by existing uses, illegal or wasteful uses, or by poor land use practices. This must be done in the larger context of ecosystem restoration.

III. Solutions: *What is the route to success?*

Instream flows will be established, protected, and restored, initially in priority watersheds, and eventually in all watersheds that support fish stocks that are listed under the Endangered Species Act or that have the potential to be listed.

1. Process - Collaboration Coupled with Action

Ensuring adequate water for fish requires taking a collaborative, incentive-based approach, taking immediate actions where needed, using strategic enforcement, ongoing monitoring, and implementing default actions when collaboration efforts fall short of expectations.

Locally-based collaborative watershed management efforts will be supported if they address establishing, protecting and/or restoring instream flows within a reasonable time. The solutions to the instream flow problems will be tailored specifically for each watershed. Deference will be given to collaborative watershed management efforts on the establishment, protection and restoration of instream flows, but not if delays risk the extinction of wild salmonids. Therefore the state through it natural resources agencies, especially Ecology and WDFW will:

- Participate actively, as resources allow, in all watershed management planning processes in which the outcome is likely to obligate state government, particularly in basins with endangered, threatened, critical or depressed fish stocks. The state will also engage in ongoing efforts to develop effective watershed management tools (e.g. water conservation and reuse opportunities) for selection and implementation by local collaborative groups.

- In accordance with Chapter 90.82 RCW, provide technical assistance to local planning groups per their request and to the extent that available resources allow. This includes technical assistance with studies and advice regarding instream flow needs and means of protecting and restoring instream flows.

- In those local collaborative efforts that intend to address instream flow setting, protection and restoration, assign representatives with authority to speak on behalf of the state. State representatives will seek to maximize the commitment of the groups to quickly develop instream flow recommendations, including where appropriate interim instream flows, and to identify and implement discretionary actions that will assist in establishing, protecting and restoring instream flows relied upon by endangered, threatened, critical and depressed fish stocks. State representatives will urge that instream flow establishment be undertaken as an early action item and that it generally not await development of the complete plan.

- In consultation with other state agencies, local governments, and Indian tribes, develop, adopt and implement instream resource protection plans using existing authorities in watersheds with endangered, threatened, critical or depressed fish stocks but no current or anticipated watershed management process. This will be accomplished according to the priorities identified later in this chapter. In watersheds with endangered, threatened, critical or depressed fish stocks in which planning groups decide to not address instream flows, Ecology will, in accordance with the priority list discussed below initiate and carry out instream flow establishment outside the watershed planning process.

- Seek agreement with local planning groups and/or government entities on potential actions that need to be taken immediately to start addressing salmon problems. Where no agreement is reached the state will act using existing statutory authorities if necessary to prevent the further decline of weak fish stocks.

- Seek agreement with local planning groups and/or government entities on default actions that will be taken in the event that collaborative efforts fall short of expectations or are incapable of providing timely results.

- Withhold action on pending and new water right applications and use of interim instream flows approved by WDFW if necessary to control water development until permanent instream flows can be established.

- When necessary to prevent any further degradation of flows Ecology will adopt emergency rules to set interim instream flows in rules while the permanent rules undergo the administrative rules process.

- Advocate effective instream flow protection, restoration and monitoring measures, including but not limited to those identified in this chapter of the strategy.

2. Priority for Establishing, Protecting and Restoring Instream Flows

The Governor's Salmon Recovery Office will work with the Salmon Recovery Funding Board (SRFB) to determine priorities for salmon habitat protection and restoration and to determine priority watersheds for expenditure of new funds and efforts. The framework advocated will be based on fish stock status, water availability conditions (described previously), and land cover and human population.

The Departments of Ecology and Fish and Wildlife completed several studies including studies in five WRIAs in the Lower Columbia (WRIAs 25, 26, 27, 28, and 29). (See Appendix B, Summary of Instream Flow Conditions.)

In addition, the Department of Ecology has existing commitments to establish instream flows in the Dungeness (18), Quilcene (17), and Lower Skagit (5) WRIAs; to revise existing instream flows in the Cedar-Sammamish (8) and Green-Duwamish (9) WRIAs; and to assist in flow restoration in the Methow (48) WRIA. The Dungeness, Quilcene, and Methow basins were pilot watershed planning projects authorized and funded by the Legislature in the early 1990s and now in the implementation phase. The Lower Skagit has a cooperative instream flow study underway involving Skagit PUD, Anacortes, Lower Skagit Tribes, and the state.

The Cedar-Sammamish and Green Duwamish have proposed Habitat Conservation Plans (HCPs) developed under federal ESA procedures by (respectively) the cities of Seattle and Tacoma. Due to prior commitments, these watersheds are de-facto priorities for the deployment of Ecology instream flow staff.

The Departments of Ecology and Fish and Wildlife anticipate that additional local watershed planning efforts occurring under Chapter 90.82 RCW may request the assistance of the state in instream flow studies. Those requests will also have to be factored into the priorities for instream flow work. The agencies have now hired staff to carry out new instream flow studies and to finish partially completed studies in priority watersheds.

Currently established instream flows and closures will be reviewed by the Departments of Ecology and Fish and Wildlife for adequacy in all watersheds that support fish stocks that are listed under the Endangered Species Act or that have potential to be listed. Where flows and closures are determined to be inadequate and are being addressed in a collaborative local watershed management effort, the currently established instream flow and closure rules will be reviewed by the Departments of Ecology and Fish and Wildlife. If necessary, they will be amended by the Department of Ecology in accordance with the schedule below. Where no collaborative process is occurring or a planning group determines it will not address instream flows, the flows will be reviewed by the Departments of Ecology and Fish and Wildlife and amended by the Department of Ecology as indicated in the schedule below.

Instream flows will therefore be **established** or **revised** in all watersheds with fish stocks listed as endangered or threatened under the federal Endangered Species Act or categorized as critical or depressed by the Department of Fish and Wildlife in the Salmon and Stealhead Stock Inventory (SASSI) report. Instream flow rules will be established or revised in the highest priority watersheds first and then in other high priority watersheds, unless opportunity exist to establish instream flow in those basins sooner.

Subject to future refinements, following is a proposed priority list for establishment or revision of instream flows:

Table 4. Priority for Setting or Revising Instream Flows

	WRIA(s)	Comment
Highest Priority		
Lower Skagit	3	MOU to set flows
Cedar Samm.	8	MOU to revise flows-HCP
Dungeness	18	Set target flows-Pilot area
Quilcene-Snow	17	Set target flows-Pilot area
Stillaguamish	5	Set flows
Green-Duw.	9	Revise flows-HCP
Snohomish	7	Set flows in tributaries
Methow	48	MOA with county
High Priority		
Chehalis	22-23	Revise-Planning area
Entiat	46	Set flows -Planning area
Lower Columbia ES	25–29	Set flows- Planning area
Middle Snake	35	Target flows
Walla Walla	32	Target flows
Skokomish-Dosewallips	16	Set flows- Planning area
Upper Skagit	4	Set flows- Planning area

Instream flow **protection and restoration** actions include a variety of regulatory and non-regulatory means discussed later in this report. Action plans for protection and restoration for the highest priority watersheds will be implemented as a high priority.

Subject to future refinement, following is a proposed priority list for protection and restoration (P&R) of instream flows:

Note: *Restoration efforts are already underway in few basins. The dates represent the start-up of implementation of a comprehensive strategy for putting water instream. In some of the basins immediate actions and enforcement against illegal uses will be taken as soon as the summer of 1999 to protect and restore instream flows.*

Table 5. Priority for Protection and Restoration of Instream flows

	WRIA(s)	Comment

Highest Priority			
Methow		48	Restoration started prior to 1998
Dungeness		18	Restoration started prior to 1998
Quilcene		17	Pilot planning area
Cedar-Sammamish		8	Restoration part of HCP
Green-Duwamish		9	Restoration part of HCP
Wenatchee		45	Strategic enforcement
Snohomish		7	Collaborative planning area
Nooksack		1	Planning area-strategic enforcement
High Priority			
Kitsap		15	
Middle Snake		35	
Walla Walla		32	
Okanogan		49	Has good flow monitoring
Puyallup		10	Collaborative planning area
Nisqually		11	Planning area
Deschutes		13	Planning area
Chambers-Clover		12	Planning area
Lower Yakima	37		*
Naches		38	*
Upper Yakima		39	*

- Considerable effort is already underway in the Yakima basin to restore instream flows under federal legislation passed in 1994. The state of Washington is cost-sharing irrigation system improvements with the U.S. Bureau of Reclamation and irrigation districts. State bond funds for this purpose have been ear-marked. Federal legislation established target instream flows and allocates water conservation savings to instream flows and existing irrigation.

3. "Baseline Actions" Applying Statewide, with ESA Areas First

- Baseline actions are intended to apply in all watersheds. They will first be implemented in the highest priority watersheds with endangered, threatened, critical or depressed fish stocks, identified by the Governor's Salmon Recovery Office (see previous section on priorities). Further details on the actions are contained in the sections of this chapter on "specific actions for protecting instream flows" and "specific actions for restoring instream flows". *(Note, dates and level of resources dedicated to this baseline activity will be covered in the implementation volume).*

- The Department of Ecology currently has limited ability to monitor flows and regulate water use when rivers and streams are stressed from low water flows. Accurate information on

water flows in rivers and streams is necessary to effectively manage instream and out-of-stream uses.

- The Department of Ecology will establish an effective stream flow monitoring and instream flow compliance program. New stream gauges will be established where needed for all highest priority watersheds first and then for all other high priority watersheds with endangered, threatened, critical or depressed fish stocks.

- Measuring and reporting of diversions and withdrawals will eventually be required universally. Ecology currently has authority to require measuring and reporting of new surface and ground water uses. Ecology can require measuring and reporting of existing surface water diversions by all persons diverting water from streams listed in the state Salmon and Steelhead Stock Inventory (SASSI) as critical or depressed and from any other stream where the amount diverted exceeds one cubic foot per second.

  Measuring and reporting in the highest priority watersheds will be implemented in the first phase. All high priority watersheds with endangered, threatened, critical or depressed fish stocks will have measuring and reporting implemented in the second phase. The initial goal is to accomplish measuring and reporting of 80 percent or more of water used in these watersheds with ongoing effort to secure measuring and reporting by all water users. Ecology will develop and implement new metering requirements to monitor water withdrawals and ensure that the amount, time, and place of water use do not exceed existing permits. The Department of Ecology also will install a mix of manual and telemetered river flow gauges in the 16 critical basins to collect information on water flows.

- Water conservation and reuse can provide additional water for both instream uses to support salmon and out-of-stream uses to support municipal, domestic, agriculture and industrial water use. The Departments of Ecology and Health will provide technical assistance to local governments, irrigation districts, and other water users in the 16 critical basins to develop water conservation and reuse programs. Baseline water conservation measures will be required to ensure efficient use of limited resources.

  Water conservation and reuse projects will be identified and implementation first in highest priority watersheds, and the remaining high priority watersheds with endangered, threatened, critical or depressed fish stocks will be implemented as part of the long-term implementation plan.

- Any water right actions for watersheds with endangered, threatened, critical or depressed fish stocks will be taken only if there will not be any negative impacts on the fisheries resources and if future flow restoration options will not be foreclosed.

- Strategic enforcement against illegal water uses will be taken in prioritized and targeted areas that support listed or potentially listed salmonids. (See Chapter V. B. Enforcement of Existing Laws Related to Salmon.)

4. Immediate Action to Prevent Further Decline in Instream Flows

For purposes of developing long term salmonid restoration strategies, the state will rely wherever possible on effective locally-based collaborative watershed management efforts occurring in watershed planning areas under Chapter 90.82 RCW or similar efforts that are scoped to include establishing, protecting and/or restoring instream flows.

As these efforts are initiated, the Departments of Ecology and Fish and Wildlife will engage in discussions with the watershed planning initiating entities regarding efforts that need to be taken immediately to avoid any further decline in fish stocks of concern. If no watershed effort is underway, the discussions will be held with local government representatives and Indian tribes.

Immediate actions will be identified for the highest priority watersheds first and then for all other high priority watersheds with endangered, threatened, critical or depressed fish stocks.

Immediate actions are likely to include:

- Restricting use of exempt wells, where appropriate.
- Mandatory strict water conservation measures and water use standards.
- Aggressive enforcement against excessive waste of water.

Further details on these actions are contained in sections on "specific actions for protecting instream flows" and "specific actions for restoring instream flows".

5. Details of Specific Actions for Protecting Instream Flows

Establishing instream flows by rule is ineffective for salmon recovery unless follow-up efforts are made to protect those flows from further diminishment. As stated in the background section instream flows are a water right under Washington law that are protected from diminishment by junior water users, by unauthorized, excessive, or illegally expanded water uses, and by the inappropriate use of exempt ground water withdrawals.

We must protect, prevent and correct unauthorized diversions, water spreading and waste through compliance monitoring, public education, technical assistance and regulatory action. The Strategy is to:

- **Prevent further decline in flows until instream flow levels are adopted or modified by rule**. Until instream flows are adopted or modified, when necessary, the Department of Ecology will withhold issuance of surface and groundwater water rights (except for public health and safety emergencies). Ecology, as an alternative and only where development pressure is low, will use case by case review of water right applications and condition issued water rights to protect instream flows using Department of Fish and Wildlife (WDFW) recommendations, until instream flows are set by rules. The Departments of Ecology and Fish and Wildlife will assist in the establishment of interim instream flows if called for by a

watershed planning group. Ecology may close basins where required as part of the instream flow rule adoption or amendment.

- **Monitor flows and compliance.** After an instream flow is established, the Department of Ecology will condition all subsequently issued water right permits and certificates that could affect the flows with provisions requiring that the use be ceased as long as the specified instream flow is not being satisfied. Permit extensions and water right changes will also be conditioned with instream flow conditions. Existing statutory and case law provides Ecology with discretion to condition permit time extensions. Water right changes are prohibited from impairing any existing water rights (including adopted instream flows).

  The Department of Ecology will establish an instream flow monitoring and compliance program, in priority basins using the model instream flow compliance effort established in the mid-1980s by the Department of Ecology's Central Regional Office for the Wenatchee, Okanogan and Methow basins. The protection program requires that Ecology actively monitor flow conditions including published runoff forecasts in the winter and spring. When it appears that runoff is likely to be insufficient to maintain the instream flow levels, the Department of Ecology requires the holders of conditioned water rights to contact the department daily on a toll free telephone line to find out whether they may divert water that day. Agency personnel make spot checks in the field to assure compliance by conditioned right holders.

  While this kind of monitoring and enforcement is efficient, it requires additional resources and cooperation of conditioned water right holders.

- **Correct and prevent unauthorized water use.** Unauthorized water use is a growing problem in many areas of the state, as it becomes more difficult to acquire a permit to appropriate water and also due to the Department of Ecology's lack of enforcement resources. Unauthorized uses have a direct impact on stream flows because unlike conditioned rights, they do not shut off when instream flows are not being met.

  A compliance assessment will be undertaken in each of the highest priority watersheds and in each of the high priority watersheds to determine the extent to which these illegal activities are established. For those watersheds with an existing collaborative process, the Department of Ecology will consult with the local watershed group to share the results of the assessment and to request assistance in achieving public support for follow-up compliance efforts.

  If the local watershed process is addressing illegal use, the Department of Ecology will actively work with the watershed group to identify alternatives and take appropriate actions needed to protect and restore instream flows and salmon habitat. The Department of Ecology will consult with local governments in watersheds without a collaborative process.

The agency will also initiate legal action to eliminate egregious cases of waste and unauthorized diversions and withdrawal of water (see section on immediate and baseline actions).

New unauthorized use will be prevented through providing better information to the public regarding the water laws of the state, by establishing a credible monitoring and compliance presence in the field, and by issuing orders to cease and desist when illegal use is observed. (See Chapter V. B. Enforcement for a more detailed discussion.)

- **Prevent water spreading.** Water spreading is closely related to unauthorized water use. The water code and related case law generally prohibits a water right from being expanded once it is established. Any expansion beyond the intention stated in the original water right application requires a new water right application for the added use.

  The concern raised by water spreading for agriculture irrigation is that in most cases, the amount of water actually consumed increases when the intensity of use increases. This reduces return flows on which other users and the stream itself may rely. The urban equivalent of agricultural water spreading occurs when a water supplier implements water conservation measures and then allocates the water savings to new development in areas outside the original intended and authorized place of use.

  The Department of Ecology will initiate efforts (see sections on immediate and baseline actions and chapter on enforcement) to eliminate egregious cases of illegal water spreading.

  New instances of water spreading will be prevented through providing better information to the public regarding the water laws of the state, by establishing a credible monitoring and compliance presence in the field and by issuing orders to cease and desist when illegal water spreading is observed. (See Chapter V. B. Enforcement)

- **Prevent the waste of water.** Waste of water involves the diversion or withdrawal of water for a non-beneficial purpose or in an amount that exceeds the amount necessary for beneficial use. Statutory law repeatedly prohibits the waste of water. The state Supreme Court has ruled that there is no right to wasted water. The quantity allowed is based on the concept of "reasonable use" and a "water duty" for each particular use. Local customary practices is a factor to consider, but not necessarily determinative. (Grimes v. Ecology)

  The state has no clearly articulated standards for the amount water that is reasonable for various purposes. The Department of Ecology uses quantity allocation guidelines when issuing new water rights. For irrigation, the agency uses quantities published by the Washington State University Agricultural Extension Service for various locales and local conditions.

In water right adjudications, courts generally arrive at their own conclusions of what is reasonable, often without much evidence in the record. Only one adjudication is presently under way (for the Yakima basin) and Department of Ecology's attempts to have waste and beneficial use evaluated in that process have been of limited success to date.

Like other factors of water use, the agency lacks good information on the amounts actually being diverted and used. Water use in many cases is not measured and is rarely reported. In addition, the lack of compliance resources within the Water Resources Program has made it difficult to do anything about waste.

The Department of Ecology will initiate efforts (see sections on immediate and baseline actions and chapter on enforcement) to eliminate existing egregious cases of waste of water.

New instances of excessive water use can be prevented through providing better information to the public regarding the water laws of the state, by establishing a credible monitoring and compliance presence in the field and by issuing orders to cease and desist when excessive water use is observed.

- **Prevent misuse of the groundwater withdrawal exemption.** Inappropriate reliance on the groundwater permit exemption can take several forms. In basins closed to appropriation, unchecked development of exempt withdrawals can cumulatively further diminish stream flows. It is legally questionable whether these withdrawals are actually establishing a water right when the basin has been closed to appropriation unless a specific exemption in the closure rule has been provided. Another form of inappropriate use of the exemption is when a developer establishes a water system for a subdivision using multiple exempt withdrawals when the total withdrawal will exceed 5,000 gallons per day.

  Despite a recent Attorney General opinion finding this to be illegal, some counties have decided to continue approving developments that rely on multiple small, presumed to be exempt withdrawals. The Department of Ecology believes that both it and local governments have the authority to regulate the inappropriate use of the groundwater withdrawal exemption. This is an issue likely to end up being resolved by the courts and/or the state Legislature.

  Exempt withdrawals are not equally problematic everywhere. Solutions therefore need to be crafted in accordance with each geographic situation. Local governments, water supply utilities and the development community will be encouraged to find more responsible water supply alternatives.

  Exempt ground water withdrawals wells should be restricted where they contribute to streamflow problems. Withdrawals from exempt wells should be brought into consistency with the policies governing the manner in which permitted ground water withdrawals are

managed (including being subject to instream flows). They should not be allowed to further diminish stream flow in closed watersheds or tributaries.

In closed basins where no public water supply is available, exempt wells could be allowed if the water withdrawn is conserved water and an adopted watershed plan provides for using "trust water rights", "water banking" or other mechanisms for sharing saved water.

New instances of this problem can best be prevented through providing better information to the public regarding the water laws of the state, by establishing a credible monitoring and compliance presence in the field and by issuing orders to cease and desist when inappropriate reliance on the groundwater withdrawal exemption is observed.

- **Measure and report water use.** Water measurement can be an effective stream flow protection requirement. It allows not only the Department of Ecology, but also the water users themselves to assure that legally allocated diversion quantities are not being exceeded. State law requires that measuring devices be installed on diversion facilities where fish stocks are classified as critical or depressed by the state Department of Fish and Wildlife.

  The amounts diverted are supposed to be recorded and reported to the Department of Ecology. Since passage of this provision in 1993, the agency has been requiring measuring devices on many new diversions, but at a minimum is informing new water users that measurement will be required in the future. In only a few pilot areas has the agency had the resources to require retrofit of measuring devices on existing diversions (e.g. from the Snake River and Salmon Creek in Clark County). The Department of Ecology is cooperating with the U.S. Bureau of Reclamation in seeking court-ordered measurement and reporting requirements in the Yakima Basin through the Yakima County Superior Court.

  Measuring and reporting of diversions and withdrawals will be required of all water users, focusing first on the highest priority watersheds (see section on baseline requirements) and largest water users first.

- **Link land use to instream flow protection.** It is critical to link water and land use planning and implementation. The linkage can and should be done as part of planning efforts addressing water and land uses. The Watershed Management Act passed by the 1998 legislature provides the opportunity to link water and land use. It requires local planning unit to consider all existing plans and related planning activities. It also stipulates that planning units must complete assessment of water supply and use in the area prior to initiation of actions. For example in certain tributaries (e.g. Soos Creek) the lack of stream-side vegetation, or land patterns that impacted aquifer recharge areas (e.g. vegetation removal, increase in impervious surfaces) are greater contributors to low flow conditions and lowering of instream flows levels than the direct withdrawals of water. Therefore, it is

critical for the state and locals involved in watershed planning to modify land use patterns and land use development in order to protect and restore instream flows.

6. Details of Specific Actions for Instream Flow Restoration

Setting an instream flow does not put water back into a stream for basins with chronic low flow conditions. For many of the highest priority watersheds, the most important need is to get water back in stream. However several key water law principles affect the ability to restore instream flows. These include the following:

- *Water rights are issued in perpetuity and are a form of property right*. As long as water continues to be used under a water right, the right remains effective and is relatively immune to being modified without the owner's consent. If a water right is altered or taken back by the state for a public purpose, compensation must be paid to the holder of the right.

- *First in time is first in right.* The earlier a water right was established, the more secure it is in time of shortage. Instream flows have only been established since about the mid-1970s and are therefore junior to most existing water developments.

- *Use it or lose it.* A water right can be relinquished or abandoned by the water user's non-use. Relinquishment is a statutory provision in which five consecutive years of non-use is grounds for relinquishment of the right (though numerous "good causes" for non-use without relinquishment are provided in law). Abandonment is a common law principle recognized by the courts in which a water right may be lost by non-use and the right holder's intention to not resume the use. The intention to abandon may be evidenced by the right holder's behavior.

- *Beneficial use versus waste.* A water right can only be established and continue to exist for a beneficial use. Beneficial use is defined by the type of the use made of water (e.g. domestic use) and by the character of that use. The use must be "reasonable" in quantity to accomplish the purpose intended without waste. No right exists to waste water.

The following initiatives will be pursued and implemented to start putting water back in streams in the highest priority watersheds.

- **Modify Water Rights.** State water rights are a usufructuary right; that is, a right to use the property of someone else (in this case the state of Washington, which in the 1917 Water Code asserted ownership of all unappropriated water in the state). Water rights are issued in perpetuity and remain in effect as long as they are continually used. Water rights are property rights and under state law cannot be taken back or further limited by the state without compensation of the owner. This makes flow restoration especially difficult to achieve.

  The State Supreme Court recently ruled that if a water right filing is still in permit status and the permittee requests an extension of time, the Department of Ecology must consider the

public interest in the permit and may modify the conditions affecting the permit. This implies that a permit extension could be denied in the interest of instream flows or approved with new instream flow conditions. Generally, this same logic extends to requests to change or amend a water right. (Theodoratus v. Ecology). The Department of Ecology will, under appropriate circumstances, impose instream flow conditions when reviewing and making decisions on change, amendment, extension, or other change to a water right permit or water right certificate or claim.

- **Remedy stream flow problems for Hydropower projects.** Most hydropower facilities operate under federal licenses that must periodically be renewed by the Federal Energy Regulatory Commission. (See Chapter IV.D Hydropower and Fish: Pursuing Opportunities.)

- **Regulate Illegal and Excessive Use and Water Spreading.** Some areas of the state have a significant amount of water being used (1) without authorization from the Department of Ecology, (2) in excess of the quantities allowed under a water right, (3) in excess of the acreage allowed to be irrigated, and/or (4) outside the authorized place of use. The agency has found these forms of illegal activity to some degree in most areas of the state that it has investigated. In some areas the problem is completely out of control and in others it is relatively isolated and minor. This issue will only be summarized here because it is treated in detail in the enforcement section of this report.

  The Department of Ecology has authority to issue a regulatory order to a person violating or about to violate a state water law or regulation (RCW 43.27A.190). Use of water without a water right is clearly a violation of the water code. The law is also clear that the parameters on a water right relating to quantity, place of use, purpose of use, point of diversion of withdrawal, maximum acreage irrigated, and special conditions specified in the water right are all legal limits on the use of water. Failure to comply with such limits is a violation subject to civil or criminal sanctions.

  Much water use in the state occurs under water right claims rather than under state issued rights. One problem is that many claims are clearly spurious on their face in that they may claim an unrealistically large amount of water for the use that is claimed. Many also claim water use that began after passage of the water codes extinguished means of establishing a water right except through the state permit process or which claim a right for future use. A general adjudication of water rights can determine the validity and quantification of all claims in the basin. Until claims are adjudicated, they remain a major uncertainty.

  The Department of Ecology believes that it can under the law make a tentative determination as to the validity and quantification of a claim for purposes of determining whether the use is illegal or excessive. However, the state Supreme Court has disallowed the agency from making a similar determination for purposes of regulating among conflicting uses. Only the Superior Court in a general adjudication of water rights can make such a

determination. (Rettkowski v. Ecology) This casts some uncertainty over whether the Department of Ecology truly can regulate an illegal or excessive use if the use is based on a claim (whether legitimate or not) until after the claim has been adjudicated. If adjudication is necessary before illegal uses can be regulated, it may be a long time before anything can be done.

Only ten percent of the state surface water has been adjudicated (percent of ground water is insignificant) with another ten percent now underway for the Yakima basin. Washington is the least adjudicated of the western states.

The section on "Details of specific actions to protect instream flows" and the chapter on enforcement describes in detail the actions the state will take to address this problem. It is important however to note that in some basins, regulating illegal and wasteful practices could result in significant amount of water remaining in the stream. (See Chapter V. B. Enforcement)

- **Require Water Conservation.** Water conservation is a primary means of restoring depressed stream flow levels. Water conservation takes many forms, but is effected through four primary means: regulatory, education, incentives, and subsidies.

  - Under a **regulatory** approach, the State can exercise the police power in various ways to cause water use to be or to become more efficient. For example, the state could establish efficiency standards and require all water users to comply with them under threat of penalty. Water users could also be required to evaluate conservation potential and to implement specific conservation elements as part of a water system plan.

  - Educational approaches involve providing technical assistance and information transfer to water users in the hope that improved, more efficient methods will be voluntarily employed. Existing institutions, including universities and conservation districts are already established to provide this kind of information.

  - An **incentives** approach involves giving users economic signals that will hopefully lead to making good choices about water use. Incentives generally involve influencing the costs and benefits of desired and not-so-desired behaviors. Tax and rate incentives are commonly used in this regard. For example a water utility's rate structure can send signals to water users that can influence how much water is used.

  - Subsidies involves providing payments in the form of loans and grants to water users to implement technologies and methods that will improve water use efficiency. Several referendum bond funds passed by the voters have provided funds for the Departments of Health, Ecology, and Community, Trade and Economic Development for purposes of helping to finance water infrastructure development and betterment.

Washington has attempted to some degree to employ all four of these approaches. A Legislatively sponsored Water Use Efficiency Study completed in 1988 recommended that all four approaches be used in concert to foster improved water use efficiency. The study report provided detailed recommendations, some of which have been implemented. Others were not implemented due to budgetary constraints.

- Municipal water conservation. – Detailed report by the state Department of Health (DOH) on the status of water conservation by public water systems and opportunities for further improvements in the state's program, "Municipal Water Conservation Analysis and Recommendations", was issued on December 1998. Generally, Washington has one the most progressive programs in the country. The state's program requires water utilities with more than 15 service connections to develop a conservation plan. Conservation plans consist of three elements:

  - Water conservation program – Evaluation and selection of specific conservation measures for implementation.

  - Water demand forecasting – Calculation of future water demand six and twenty years into the future.

  - Water use data collection and reporting – Collection of specific water use data elements.

  Specific requirements and guidelines, which were developed with the Washington Water Utility Council, are contained in a 1994 DOH/DOE publication. Requirements in all three areas vary depending on the size of the water system and whether the system will need additional water rights within twenty years. Required conservation measures for all systems include:

  - Installation of source meters for new sources.
  - Conservation program promotion.
  - Leak repair if unaccounted for water is greater than 20%.
  - Evaluation of service meter installation and conservation pricing (water rates).
  - Other measures identified by system size if determined to be cost-effective.

  The Executive Branch will pursue some or more of the following recommendations to significantly enhance the state's water conservation program for public water supplies. The recommendations include the following:

  - Develop water allocation standards for all new withdrawals and water duties for existing uses.

- Require all existing Group A systems (15 or more services) to install source meters.
- Require leak detection and repair for all systems with 1,000 or more services. Authorize local governments or watershed plans to require it for smaller systems.
- Require water use audits for systems with 1,000 or more services.
- Require conservation rate structures for all systems.
- Eliminate regulatory disincentives to conservation within existing law.
- Enhance water use data collection and management.
- Better enable water marketing and reallocation of existing supplies.
- Develop model landscape ordinances.
- Develop conservation plans for state-owned facilities.
- Allow local governments and watershed plans to exceed statewide requirements.
- Authorize local governments, watershed plans and individual water systems to develop and implement:
    - ♦ Mandatory landscape ordinances for outdoor use;
    - ♦ Retrofit and rebate programs for plumbing fixtures; and
    - ♦ Commercial, industrial, and landscaping conservation programs.
- Provide technical assistance to water systems in developing and implementing conservation plans.
- Enhance state's ability to review conservation plans and assure compliance.
- Enhance state's ability to provide public information and education.
- Develop water demand forecasting guidelines.
- Provide a utility tax credit for conservation investments by water utilities.
- Make water conservation a condition of receiving state funds.

- Agricultural irrigation- water conservation

  Agricultural irrigation is the largest consumptive use of water in the state. About three-fourths of Washington irrigation water is diverted from surface water and the remainder is withdrawn from ground water sources. (See Chapter II. Background: Setting the Context)

  Major federal reclamation projects in the Columbia basin, the Yakima basin and the Okanogan basin account for well over half of the state's irrigation land base. The Columbia Basin Project and the Yakima Basin Project include large storage reservoirs that capture high spring flow and release it for irrigation use during the summer and early fall. All major tributary stream systems in eastern Washington have irrigated lands to varying degrees. The impact of irrigation on stream flows varies from tributary to tributary, but generally, irrigation withdrawals and consumptive use depress natural stream flows during the low flow period in the summer and fall. An interesting exception is in the upper Yakima River where water is released from headwaters storage reservoirs to be diverted far downstream. In the upper Yakima River, summer and fall flows are actually much higher than they would be naturally due to storage releases.

However, the lower Yakima River, below the major irrigation diversions, has chronic low flow problems that affect fish.

Water conservation efforts in the agricultural sector also vary widely depending on the situation. Irrigation districts applying for grants and loans from the Department of Ecology are required to have a water conservation plan. Ecology guidelines set out state conservation planning requirements for agricultural irrigation. Districts receiving federally developed water are also required by the Bureau of Reclamation to have a conservation plan. Other independent and private irrigation systems have no current conservation planning requirements.

The Department of Ecology also administers drought-related funds. These are bond funds left over from appropriations made in the 1977 drought. During periodic drought episodes, the agency can provide grants and loans to public irrigation entities for funds to ameliorate water supply problems for irrigation and related fisheries.

A 1988 water use efficiency study report authorized by the Washington Legislature made extensive findings and recommendations regarding irrigation water conservation. Most of these recommendations remain relevant. Only a few have been implemented since 1988 due to resource constraints.

Chapter IV. A. 1. Agricultural Strategy to Improve Fish Habitat outlines the intent of the state to support a programmatic approach for irrigated agriculture (including agricultural water conservation) to address Endangered Species Act (ESA) and Clean Water Act (CWA) certainties.

- **Require use of Reclaimed Water- Water Reuse.** The use of reclaimed water is a promising strategy for reducing the current or future direct draw on streams and associated aquifers. Under modern water treatment technologies and standards, sewage and industrial wastes are cleaned up to the point that it makes more sense to recycle and use that water than to discharge it.

  Public perception makes it difficult to suggest use of reclaimed water for drinking or contact uses (although that is increasingly occurring in other parts of the country). However much drinking quality water is presently used for purposes that could instead use highly treated effluent (e.g. industrial and construction water uses, park, lawn and golf course irrigation, vehicle washing, and street cleaning).

  A major issue regarding water reuse, as in all forms of water conservation, is how should the water savings be allocated. Should reclaimed water be employed to reduce the draw on streams, to help meet new growth in metropolitan areas, or to expand industrial and agricultural production? One technical challenge is that reclaimed water will need its own

distribution system and strict cross connection controls. A separate distribution system is expensive, especially to retrofit into an existing developed area. Localities face significant challenges in infrastructure development and siting in order to take advantage of future water reuse opportunities.

The state has been investing considerable energy in reclaimed water. Legislation has been passed requiring establishment of streamlined permitting and discharge standards for reclaimed water. A one-stop state permit system is in place. Discharge standards for underground and wetlands discharge of excess reclaimed water have been adopted. A state Water Reuse Advisory Committee met for several years to help develop policies for reclaimed water.

Reclaimed water legislation exempts reclaimed water projects from water right procedural requirements. However, reclaimed water projects are prohibited from impairing any downstream water rights. This could be a significant deterrent to reclaiming water in areas that currently discharge effluent to a stream. In many situations, downstream water rights may rely in whole or in part on the effluent as a source of supply.

Compensation costs may affect the economics of reclaiming water. This is much less a problem in the Puget Sound region where large treatment plants discharge an average of about 300 million gallons of effluent per day directly to salt water. But in eastern Washington and inland parts of western Washington, protecting existing water rights could be a significant burden on reclaimed water proposals.

A detailed report was issued June 1998 by the Departments of Health and Ecology on the status of water reuse and opportunities for further improvements in the state's program. It includes several recommendations, including requiring the use of reclaimed water to meet non-potable water needs where feasible. Specific recommendations include:

(1) Provide incentives to allow marketing and encourage the use of reclaimed water.
(2) Revise and develop a regulatory structure to require utility planning for water and wastewater be coordinated to encourage reuse.
(3) Departments of Health and Ecology provide direct assistance to watershed planning activities to support reuse opportunities, and address potential water rights issues.
(4) Provide incentives to allow for construction and generation of reclaimed water to equalize the cost with other potable or non-potable sources.
(5) Develop pilot demonstration projects and public education materials on small-scale urban reuse projects, such as greywater.

Funding was provided by the 1999 legislation for reuse and conservation. (See Working Draft Early Action Plan)

- **Use of Trust Water Rights program.** Passage of trust water rights legislation in 1989 and 1991 provided a significant new tool for restoring instream flows. Under these laws, the Department of Ecology is authorized to acquire trust water rights by purchase, lease, receipt of gift, or by financing water conservation. Trust water rights may be reallocated by the agency for offstream or instream uses. Progress has been slow in actually identifying situations for acquisition of trust water rights. The most prominent examples are in the Methow, Dungeness and Yakima basins.

  In the Methow basin, the local water planning committee developed a plan calling for all new water uses to be met from conserved water from improving the efficiency of existing irrigation systems. A water bank is proposed that will accept deposits of saved water (trust water rights) and redistribute it according to a formula in the plan. The plan calls for 90 percent of water savings to be retained instream and ten percent to be reallocated to new agricultural and development uses. The Department of Ecology has proposed rules to establish water bank for the Methow Basin in Okanogan County.

  In the Dungeness basin, the Department of Ecology and a consortium of irrigation water user organizations have signed an agreement to establish trust water rights from current and future water savings to restore flows in the Dungeness River.

  In the Yakima basin, the U.S. Bureau of Reclamation and the Department of Ecology have a cost sharing agreement for financing future water conservation projects. Under federal law specific to the basin, about two-thirds of the water saving is earmarked for instream flow augmentation and one-third for firming up existing junior irrigation water rights. In addition, the U.S. Bureau of Reclamation has been leasing water rights in the Teanaway River subbasin as a test of a potentially larger water acquisition program. The Bureau is working toward permanent acquisition of several large water rights to assure permanent stream flow improvements in the Teanaway River.

  Funding was provided by the 1999 legislature for purchase of water rights. Private groups are also moving in the direction of purchasing and leasing water rights for instream flow improvement. (See Working Draft Early Action Plan)

- **Water right transfers and changes**. Under current law, a water right is appurtenant (legal attached) to a specific piece of land. It may, with the Department of Ecology's approval be severed from that land and transferred to a different place of use. The agency can also approve changes in the point of diversion or withdrawal and changes in the purpose of use. The statutes (RCW 90.03.380 through 390) allow such changes to be approved if no other water rights (including those junior to the right being changed) would be impaired by the change. A state Supreme Court decision requires the agency to protect existing, prior-filed water right applications when evaluating a proposed change or transfer. In addition, courts have confirmed that the Department of Ecology must also consider the

effect on the public interest when evaluating a transfer. The state Supreme Court recently confirmed that only water that has been previously put to beneficial use can be transferred or changed.

Water right transfers and changes are becoming increasingly important as new water rights have become more difficult to acquire. They now make up about twenty-three percent of the Department of Ecology's pending water right applications. 1997 legislation enabled establishment of county level water conservancy boards with authority to process water right transfer/change requests and recommend their disposition to the Department of Ecology. Five such boards have been approved and established (in Benton, Lewis, Franklin, Klichitat, and Yakima counties) others are being proposed.

Other legislation passed in 1997 allows an irrigation water user to conserve water and transfer the conserved water to new land as long as the consumptive use under the water right would not be increased. This legislation does allow water spreading in a very limited form. Under these limitations, the transfer should have no additional deleterious effect on instream flows. Governor Locke vetoed more expansive water spreading legislation in the 1998 session because of concerns that it would further diminish instream flows.

Transfers and changes generally have little or no impact on instream flows (and if they do, they are denied or required to mitigate the effect). Therefore, the Department of Ecology believes that more transfers and changes should be encouraged. In addition, as noted in the previous section, there is growing interest in transferring water rights from offstream to instream use on a willing seller, willing buyer basis.

- **Water Storage.** Most Washington rivers experience their lowest natural flows in the summer and early autumn during a period when many water out-of-stream uses reach their maximum need. Natural streamflows peak in the winter and spring when water needs tend to be lowest. This hydrologic reality is one reason why many rivers in the state have reservoir storage. Storage allows water from the natural high flow period to be shifted in time to other periods of the year when it is needed most. The purposes served by most existing reservoirs include power, irrigation municipal/industrial and flood control with secondary purposes that may include recreation and environmental benefits.

  Historically, surface water reservoir projects have not been favorable to naturally occurring fish stocks. Many projects inundated important spawning and rearing habitat, cut off access to upper watersheds, altered downstream water quality and reduced natural stream flows. However, in recent years, new storage projects have increasingly been suggested as a means of restoring or at least managing flows for fish. New storage facilities have been proposed for many years in the Yakima River basin for purposes that include improving aquatic conditions for fish, especially in dry years. Irrigation districts in the Yakima basin

have built several small re-regulating reservoirs to reduce operational spill from irrigation conveyance systems (and thus conserve water).

It is also possible to modify the purposes and operations of existing storage facilities to be more fish friendly or even to enhance the production of fish. (See Chapter IV. D. Hydropower and Fish: Pursuing Opportunities.) Federally owned and operated reservoirs have been under great pressure to modify operations to protect or improve conditions for fish. This is occurring in the Yakima basin, in the Green River basin near Seattle, and on the main stem of the Snake and Columbia Rivers.

Offstream storage reservoirs avoid inundating riverine habitat and blocking fish passage. Water is diverted or pumped during times of high flow into the reservoir and could be drafted from it during times of low flow and high water demand and to augment low stream flows.

In the right setting, it is also possible to store water in ground water aquifers for later pumping and use. This is not very common yet in Washington, but it is in other parts of the country. In some cases, irrigation artificially recharges aquifers through conveyance system losses and application losses into the ground.

Artificial ground water storage and recovery is being proposed in several communities for public water supply and in connection with water reuse projects. These projects inject or infiltrate water into a ground water storage basin during high flows and extract the water for use during low flows. New ground water storage and recovery projects could reduce the draw on streams during the low flow period of the year and thus be beneficial to fishery resources.

- **Other methods to increase water conservation and efficiency and share conserved water.** Water conservation and efficiency measures have been funded both by private and public resources. The potential for private funding is however great due to the limited "new" water supplies. Therefore the issue of how to address the need to put water in the stream and to provide water for unmet needs requires that we look at various options to facilitate conservation and sharing of saved water.

  - ***Water Marketing Concept.*** Water marketing involves efforts to facilitate the movement of water rights from outdated and/or lower value uses to newer, higher value uses. Higher value uses, at least in theory should be able to outbid lower value uses for water rights. The result is an economically efficient allocation of water, although the outcome may not be in the public interest. To compensate for this problem, water right transfers need to be subject to a public interest test.

Since at least 1917, it has been permissible for a water right holder to sever a water right from the land to which it is appurtenant and to move it to a new location for a different purpose. The user could also sell the water right to another person who in turn may move it elsewhere for a new purpose. All such changes require the prior approval of the Department of Ecology. Before approval, the agency must assure that no other water right (whether junior or senior) will be injured by the change in use. The courts have also affirmed that the Department of Ecology has a duty to protect the public interest (including instream flow effects) in considering any such change.

The market, such as it exists, is a regulated one. Both the no-injury test and the public interest test may constrain the free movement of water. In either case impairment can potentially be overcome by compensation, mitigation, or appropriate conditioning of the approval to change a right.

Over one-fifth of the water right applications currently received by the Department of Ecology are for changes in existing water rights. This proportion is expected to increase in the future due to the difficulty of receiving approval for new original diversions or withdrawals and potential public financing of conservation infrastructure. The Department of Ecology has adopted rules that further encourage persons seeking water to attempt to find and change existing water rights.

One of the factors that inhibit water marketing and transfers is the lack of good information on water use and lack of certainty of water rights. The Department of Ecology does not know for certain who the current owners of water rights are. Water right records include only the original owner of the water right. The land to which it is appurtenant may have changed ownership many times since water right was established. An effective market would require better information regarding water right owners as well as willing sellers and buyers.

There is growing interest in the conservation community to buy or lease water rights for dedication to instream purposes. An effective water market is essential for this strategy to be effective. The 1999-01 budget appropriation provides funds (one million dollars) for the state to purchase or lease water rights in strategic locations for instream flow restoration.

Several areas of the state are proposing the establishment of a "water-bank" to facilitate the purchase or lease of water for instream flows and other desired purposes. A water bank is simply a central location where persons with water rights to sell or lease and persons (including the state or private foundations) willing to buy or lease can find one another. A water bank can be set up to accept "deposits" of water rights and to issue them to others. Water banks are operating in other states (e.g. upper Snake and Boise basins in Idaho). The Methow is maybe the first basin in Washington for this approach.

- ***Concepts for sharing saved water as a means of keeping or putting water in streams.*** The "Use it or lose it" principle compels water right holders to use their maximum entitlement or risk losing it or portion of it for nonuse. For irrigation this encourages continued use of inefficient systems and illegal water spreading (using saved water to irrigate new acreage beyond the scope of the water right).

  In 1989 and 1991 the legislature passed the trust water rights legislation in response to "the need to develop and test means to facilitate the voluntary transfer of water and water rights, including conserved water, to provide water for presently unmet and emerging needs". The trust water program is discussed above.

IV. Monitoring and Adaptive Management: *Are we making progress?*

Implement State Monitoring and Performance Evaluation

The state will closely monitor the progress of both its own efforts and local collaborative watershed efforts that have been deferred to for development of solutions to instream flow problems. Performance indicators that are under consideration include:

- Number of watersheds with instream flows established by rule.
- Number of watersheds with instream flow protection efforts in place and implemented.
- Number of watersheds with instream flow restoration efforts in place and implemented.
- Number of watersheds in which instream flows are met or exceeded.

The Department of Ecology will assess the measures annually and will report the results to the Governor and the water and fishery committees of the Legislature. (See Working Draft Early Action Plan for details.)

Default Actions

The Departments of Ecology and Fish and Wildlife will discuss with the sponsors of collaborative efforts actions that will be implemented by the state in the event that the local collaborative effort fails or is not completed in a timely manner. Agreement with the local groups and sponsors will be sought on default actions.

However, lack of agreement will not prevent the state from moving ahead with those actions if it believes to be essential to prevent the further decline of the affected fish stocks. In watersheds without a local collaborative process underway, the Departments of Ecology and Fish and Wildlife will hold similar discussions with the responsible local government entities and Indian tribes regarding default actions needed to addressing instream flow problems in the watershed pending any future watershed efforts.

Default actions will be identified for the highest priority watersheds first and then for all other high priority watersheds with endangered, threatened, critical or depressed fish stocks.

Default actions could include actions by the Department of Ecology to:

- Close or withdraw the whole watershed to further appropriation of both surface and ground water. If necessary Ecology will adopt emergency rule to implement this default action.
- Set and enforce instream flows.
- Enforce against illegal and excessive water use.
- Initiate adjudication of all existing water rights in the basin.

ESA Compliance Strategy

The intent of the state is to develop, with federal agency participation, a water restoration template which will include setting instream flow targets, metering, stream gauging, water conservation and efficiency requirements, enforcement and mechanisms for purchase of water to put back in streams. The template, once approved by NMFS and USFWS, will serve as a "water module". Implementation of water restoration plans consistent with the "water module" will be covered by section 4(d) rules and eventually an HCP, if appropriate.

For agricultural irrigation, water quantity will be covered in the programmatic approach being proposed by the state. (See Chapter IV. A. 1. Agricultural Strategy to Improve Fish Habitat.)