3.9 ELWHA RIVER AND TRIBUTARIES RECOMMENDATIONS

Section 3.4 contains recommendations for instream flows, and Section 3.3 contains other recommendations for small rural and urban streams, habitat restoration, salmon recovery, and related environments (e.g., riparian corridors, wetlands, estuaries) that are intended to be considered for all WRIA 18 streams and rivers. Sections 3.1 and 3.2 contain water quantity and water quality recommendations that also apply to all WRIA 18 subbasins.

3.9.1 Elwha River (WRIA# 18-0272)

Water Quantity/Instream Flow

Issue: Elwha River water rights held by the City of Port Angeles provide the bulk of present municipal water supply for West WRIA 18 and represent by far the greatest potential source for West WRIA 18 future water supply for human use.

Existing Conditions and Current Actions

The City of Port Angeles water system is supplied primarily from the Elwha River Ranney collector, and serves three pressure zones. Surface water rights to Elwha River total 153.32 cfs, most of which is represented by the 150 cfs water right held by the City of Port Angeles. The City also holds a 22,500 gallon-per-minute (50 cfs) groundwater permit taken at a Ranney collector at the riverside, essentially withdrawing from the river's base flow. The City's domestic and industrial water rights are both considered to be for municipal purposes. Up to 50 cfs of the City's water right could be used to supply the WDFW fish hatchery facilities on the Elwha River (current hatchery use is about 35 cfs and has ranged up to 42 cfs, depending on season).

An alluvial sand and gravel groundwater aquifer, which supplies municipal and industrial water for local residents and businesses, underlies the Elwha River valley. Five major entities withdraw groundwater from the alluvial aquifer: in addition to the City of Port Angeles, these include the Dry Creek Water Association, the Lower Elwha Klallam Tribe, the Lower Elwha Klallam Tribal Fish Hatchery, and the Elwha Place Homeowners' Association. The WDFW rearing facility also has a groundwater withdrawal located in continuity with the river. The alluvial aquifer and the river are hydraulically connected, and both surface and groundwater flow north toward the Strait of Juan de Fuca. Groundwater flow through the aquifer increases from the upper to the lower sub-basin. The groundwater discharge from the middle to the lower sub-basin is approximately 1- to 2-cubic-feet per second (cfs). In the lower sub-basin, the river "loses water" to the aquifer; the US Geological Survey estimates that groundwater discharges from the alluvial aquifer to the Strait at a rate of approximately 6 cfs.

A 6-foot-diameter water line is used to convey industrial water from the Elwha River to City of Port Angeles industrial customers. The intake is just below the old one-way highway bridge. The line once served three major pulp mills but now is serving one mill

The City of Port Angeles projects a surplus (unused) capacity in 2020 of about 14.6 MGD (approximately 22.5 cfs) on an average demand day basis, and a surplus of about 23.4 MGD (about 36.2 cfs) on a maximum day demand basis from its Elwha River municipal water right. The development schedule for perfection under this permit was extended to

2020 by Ecology in 1998. The City of Port Angeles also wholesales Elwha River water to the Clallam County PUD via two intertie connections. Total intertie flows have averaged 0.36 MGD for the period 1996-2000. Ecology has been requested to withhold any action on Elwha River water right applications.

The City has developed a staged Water Shortage Plan to coordinate the City's response to times of short water supply. Although the Plan does not currently include "fish triggers" for each stage, discussions are underway between the Lower Elwha Klallam Tribe and the City of Port Angeles on the development and implementation of these triggers as they relate to instream flow. Further, all Elwha water purveyors are expected to integrate these fish triggers into their respective water conservation programs or water management programs.

The Washington Department of Fish and Wildlife (WDFW) and the Lower Elwha Klallam Tribe each operates a hatchery on the Elwha River. Total WDFW demands are projected to be consistently at 26.35 cfs for a range of programs (yearling, zero-age, fry and smolt). The Tribe reports that the Lower Elwha Fish Hatchery currently uses 5 to 7 cfs from the Elwha River, but plans to increase use to 28 cfs plus and additional 3.2 MGD of groundwater after the Elwha River dams are removed.

Limiting Factors Analysis (LFA) recommendations for the Elwha River mainstem are provided in Appendix 3-B for information, and are not adopted as such in the Watershed Plan. Some conflicts may exist between the LFA and the Watershed Plan; where conflicts exist, these would need to be reconciled by the involved jurisdictions on a case-by-case basis. There were no LFA recommendations made specific to Elwha River tributaries.

Desired Conditions and Outcomes

- Long-term water supply for human use in balance with instream needs for fish.

Recommendations

A. Existing water rights should be used to meet future demands wherever it is cost-effective to do so.

B. Elwha River water should not be conveyed east of the Morse Creek watershed,

C. Morse Creek should not be used for conveyance of Elwha River water.

D. Off-channel water storage opportunities should be investigated in the Elwha River watershed.

E. Investigate the feasibility of using a point of diversion for Elwha River water rights immediately above tidal influence, at least during summer low-flow periods.

F. In consultation with local, state and tribal biologists, the City should complete development of "fish triggers" that would be protective of life history requirements during low -low periods in the Elwha River. These triggers should be incorporated into the staged water-conservation measures of the Water Shortage Response Plan and adopted by Ordinance.

G. Develop and promote implementation of water conservation recommendations that will apply to all purveyors of Elwha River water for all seasons, especially during low-flow periods to protect salmon when they are most vulnerable.

H. Meter all diverters of surface water, including industrial water diversions, from the Elwha River at points of withdrawal and use as required by State law.

I. Suggest industries schedule maintenance closures to coincide with typical low-flow periods in the Elwha River (i.e. August-September).

J. Instream Flows

1. Ecology should continue to withhold action on new water rights for diversions on the Elwha River until an instream flow rule is established. The instream flow rule should be developed in consultation with affected tribes, local jurisdictions, and other members of the planning unit and should be based on a legally and scientifically defensible flow methodology. It should protect flows for fish before any new water right would be issued.
2. The instream flow rule should be based on studies done after the river has stabilized, post-dam removal.
3. The determination of instream flows should be used as the framework for adjusting “fish triggers” in the Water Shortage Response Plan.

K. At times of water low-flow emergency as defined by the City’s Water Shortage Response Plan, or when channel and flow conditions require it, use temporary instream structures to direct water to serve WDFW fish facilities and the City’s water supply at levels in compliance with the Water Shortage Response Plan. Before working in the river the City will work with State, Federal or Tribal biologists to lessen temporary impacts to fish. This consultation also pertains to all instream activity by any entity.

Water Quality

Issue: Highway and road run-off may be impacting the Elwha River. There is no ongoing provision for monitoring water quality conditions throughout the watershed.

Existing Conditions and Current Actions

Water quality in the Elwha River watershed is subject to Federal, Tribal, State, and County jurisdictions and their corresponding standards. These waters support domestic, recreational, industrial and fisheries use.

Desired Conditions and Outcomes

- High-quality water in the Elwha River, sufficient to support healthy and viable populations of salmonids, other fish, and their prey organisms.
- Water quality that meets applicable water quality standards for the beneficial uses for which the water is designated.

Recommendations

L. Local entities should seek grant funding to conduct an analysis of potential water quality problems for the Elwha River and its tributaries, with particular attention to highway and road stormwater runoff.

M. If a problem is found, the involved jurisdictions should develop a plan for protecting water quality, using the best available equipment and practices. Best management practices such as Baysaver Stormwater Treatment Systems should be considered in treating roadside run-off.

N. The involved jurisdictions should also establish and maintain water quality monitoring in conjunction with flow monitoring (see Section 3.2).

Habitat

Issue: The Elwha River historically supported very large runs of salmon. These have been nearly lost due to the construction of two dams (the Elwha and Glines), built without fishways, towards the downstream end of the watershed. The dams have resulted in extensive loss of habitat.

Existing Conditions and Current Actions

Currently there are plans to remove both dams beginning in 2007 and restore the river. Two major sub-watersheds connect to the mainstem of the river between the dams: Little River and Indian Creek. These two sub-watersheds are currently only somewhat impacted by development and thus are prime areas of existing and potential fish habitat. The lower Elwha River and tributaries below the Olympic National Park boundary are the only part of the watershed that is subject to future development. Within the national park are many streams that are prime habitat and have no development within their watersheds.

Much of the lower river channel between the dams and the delta is in very narrow canyons with very little floodplain and few side channels. Thus rebuilding the degraded estuary is a major goal.

The Lower Elwha Klallam Tribe has its residential areas, fish hatchery, and other administrative buildings on the east side of the Elwha River floodplain and delta. All are protected by a dike system.

Desired Conditions and Outcomes

- A large estuary, restored as much as possible to full function.
- Salmon runs recovered and upstream habitat reopened with dam removal.

Recommendations

O. Ensure that fish screens are installed and sized appropriately according to federal specifications.

P. Pre-dam removal, significant restoration actions could and should occur below the Park boundary. These actions can help prepare the lower river for the

dramatic changes expected following dam removal. Specifically, habitat preservation and restoration should include, but not be limited to:

1. Systematic restructuring of the lower and middle river with LWD.
2. Removal of selected dikes and other selected channel constrictions.
3. Riparian restoration.

Q. Post-dam removal habitat preservation and restoration should include, but not be limited to:

1. A Habitat Conservation Plan to address riparian, wetlands, and floodplain. Integrate this plan with water-supply actions.
2. Stream-specific restoration actions with dam removal/restoration and flood-control actions.
3. Removal of fish barriers in the upper Elwha, such as culverts
4. A plan for public access, after the dams are removed, in a manner consistent with river and watershed management objectives. Recognize unique characteristics in this plan, such as the Lake Aldwell canyon.
5. LWD placement for habitat and flood protection.
6. Revegetate, or otherwise prevent erosion, of upland exposed areas into river.
7. Replace all undersized culverts under Olympic Hot Springs Road (including at least those at Madison Creek, Elwha Campground area, Griff Creek, and the unnamed creek near the Elwha Ranger Station).
8. Replace undersized culvert under Highway 101, just west of its junction with Hwy. 112, in order to prevent future blowout and dumping of sediments into the restored river area.
9. Rebuild the outflow area of the culvert crossing under Highway 101 (at the base of the east-side approach to the highway bridge across the Elwha River, in the area of the former Elwha Resort) in order to prevent erosion into the restored river.

R. Jurisdictional agencies, affected tribes, and owners of flood structures in the Elwha River should review all existing flood structures to identify opportunities to improve fisheries habitat and river function. This should include:

1. Private levee, west bank of mouth
2. Federal levee on Lower Elwha Klallam Reservation
3. Spur dikes at the McDonald gage and the one-lane bridge
4. Tribal Hatchery water withdrawal dike

S. Remove all unused, older, non-functional dikes, spur dams, cribs, sheet pilings, gabions, and riprap to restore natural river flow.

T. Any new flood control or erosion prevention measures should use state-of-the-art designs and best management practices to preserve and restore habitat

and support salmon recovery. The Tribe will examine environmentally friendly methods of providing flood-control mitigation to minimize long-term effects on fish and habitat, within the constraints of the Elwha River Ecosystem and Fisheries Restoration process.

U. Realign the west-side dike, curving it to the west in front of the two large homes now built next to it.

V. Remove the berm along the southern portion of LEKT hatchery outfall to allow sheetflow to the north.

W. If feasible, cost-effective, and consistent with Tribal goals, extend the east Corps dike out to the beach to prevent end-around flooding.

X. Extend the east Corps dike south to the east bluff in such a way that produces the maximum usable river floodplain and side-channel habitat while providing improved flood protection for current and future residential areas.

Y. Study the relocation of the Olympic Hot Springs Road eastward in order to prevent its raised roadbed from acting as a levee if left in place.

Z. Consider buying out properties that are very close to river, in lieu of flood protection efforts.

Q. Water Intake Area: During construction of new water intakes for City and industrial lines, new fish screens, new Tribal fish hatchery, and bridge supports; try to limit structures in the stream itself. Try to have any such facilities serve more than one use. Coordinate construction to limit any impacts in the river.

3.9.2 Indian Creek (WRIA# 18-0283) and Lake Sutherland

Issues: Contaminants and sediments from highway and road run-off, oil/gas contaminants from boating activity, bacteria, and excessive nutrients (especially nitrates) from failing septic systems could be adversely impacting the quality of water in Lake Sutherland and Indian Creek.

Existing Conditions and Current Actions

Lake Sutherland is known to be used as an unpermitted surface source of drinking water. Little data is available on the quality of water in Lake Sutherland and Indian Creek. Anecdotal evidence suggests water quality problems in Lake Sutherland. Residents have reported algal growth in isolated areas, which may be a result of natural conditions or of excessive nutrients from failing septic systems. These algal blooms can pose severe problems for fish spawning. It is likely that there are septic problems because the terrain around the lake has steep slopes with a relatively small amount of level ground around the lake. Harmful bacteria and viruses released from insufficiently treated septic waste may pose a health risk to people swimming and boating in the lake. Excessive nutrients in some areas of the lake may decrease the oxygen in the lake, a process called eutrophication, which suffocates sediment insects, microorganisms in the water, and fish.

As a major tributary of the Elwha River, Indian Creek and its headwaters basin of Lake Sutherland historically provided habitat suitable for probably all anadromous stocks. Of

particular significance is that the lake would have been the only habitat supporting sockeye salmon in the entire Elwha watershed (or in all of WRIA 18). This significance has long been compromised by the presence of the dams, land development throughout the Lake Sutherland headwaters, and changes to the channel configuration (especially in the area of the "wetland complex") caused by adjacent land use practices. With impending removal of the Elwha dams, Indian Creek and Lake Sutherland will become important locations to reestablish naturally-sustaining stocks of potentially all anadromous species.

Channel braiding through the wetland areas of Indian Creek represents a significant passage impediment to adult salmonids. It is unclear what has caused the evolution of this wetland complex, which has not been extensively studied. Lake Sutherland is widely developed along the majority of its shoreline. This land development consists mostly of primary and recreational residences, several recreational operations, and many shoreline docks, decks, piers, and other structures. In addition, the extent of human activity around the lake has resulted in substantial sediment sources derived from road/driveway construction, and in a large number of septic systems, many of which are suspected of being incompletely or improperly maintained, resulting in nonpoint pollution and corresponding degradation of lake and stream habitat.

Desired Conditions and Outcomes

- High-quality water in Lake Sutherland and Indian Creek, sufficient to support healthy and viable populations of salmonids, other fish, and their prey organisms.
- Water quality that meets applicable water quality standards for the beneficial uses for which the water is designated.
- Salmon runs recovered and upstream habitat reopened with dam removal.
- Indian Creek and Lake Sutherland achieve properly functioning water quality and habitat conditions adequate to support healthy populations of all naturally occurring anadromous stocks.

Recommendations

A. Water Quality

1. Start an extensive multi-parameter sampling program for bacteria, nutrients (especially nitrates), and other potential contaminants in Lake Sutherland and Indian Creek.
2. Request that Streamkeepers add Lake Sutherland and Indian Creek to their monitoring program.
3. Evaluate water quality data to determine if there is a bacterial pollution. If bacterial pollution exists in areas of the lake or creek, conduct sanitary surveys and dye tests in areas with pollution. (For recommendations pertaining to septic problems see Section 3.2.1.)
4. Use best management practices, such as Baysaver Stormwater Treatment Systems, to treat roadside runoff.

5. Investigate feasibility of establishing a community water system serving the Lake Sutherland area.

B. Habitat

1. Seek funding for a major study of the Lake Sutherland/Indian Creek complex. Study questions include (but are not limited to) the following: removal of fish screens at outlet of lake, need for LWD in creek, possible replacement of culvert under Highway 101, flow and fish passage in the Indian Creek wetland complex along 101 near upper end of Indian Creek, and public access issues (Olympic Discovery Trail will pass along the ridge forming the north boundary of the Indian Creek subwatershed). Take into account the rearing habitat value of beaver ponds.
2. Ecology should continue withholding action on new water rights in Indian Creek and Lake Sutherland until an instream flow has been established by rule, using a legally defensible flow methodology.

3.9.3 Little River (WRIA# 18-0297)

Issues: Contaminants and sediments from road runoff, and excessive nutrients (especially nitrates) from failing septic systems could be adversely impacting the quality of water in the Little River. As a major tributary of the Elwha River, Little River is expected to be prime fish habitat when mainstem has been restored for fish passage.

Existing Conditions and Current Actions

The Little River watershed is sparsely populated and has a history of extensive logging in some areas and some other significant land use activities such as gravel extraction. There are known passage impediments within the main channel that effectively prevent access to a major part of the watershed. Little monitoring or other study has occurred in the watershed.

Desired Conditions and Outcomes

- High quality water in the Little River, sufficient to support healthy and viable populations of salmonids, other fish, and their prey organisms.
- Water quality that meets applicable water quality standards for the beneficial uses for which the water is designated.

Recommendations

A. Water Quality

1. Start an extensive multi-parameter sampling program for bacteria, nutrients (especially nitrates), and other potential contaminants in Little River.
2. Request that Streamkeepers add Little River to their monitoring program.

3. Evaluate water quality data to determine if there is bacterial pollution. If bacterial pollution exists in the river, conduct sanitary surveys and dye tests in areas with pollution. (For recommendations pertaining to septic problems, see 3.2.1.)

4. Use best management practices, such as Baysaver Stormwater Treatment Systems, to treat roadside runoff.

B. Habitat

1. Seek funding for assessment of fish passage up Little River and alternatives to supply the local water system from other sources to preserve water during low-flow times.

2. Ecology should continue withholding action on new water rights in the Elwha tributaries until an instream flow has been established by rule, using a legally defensible flow methodology.

This page intentionally left blank.