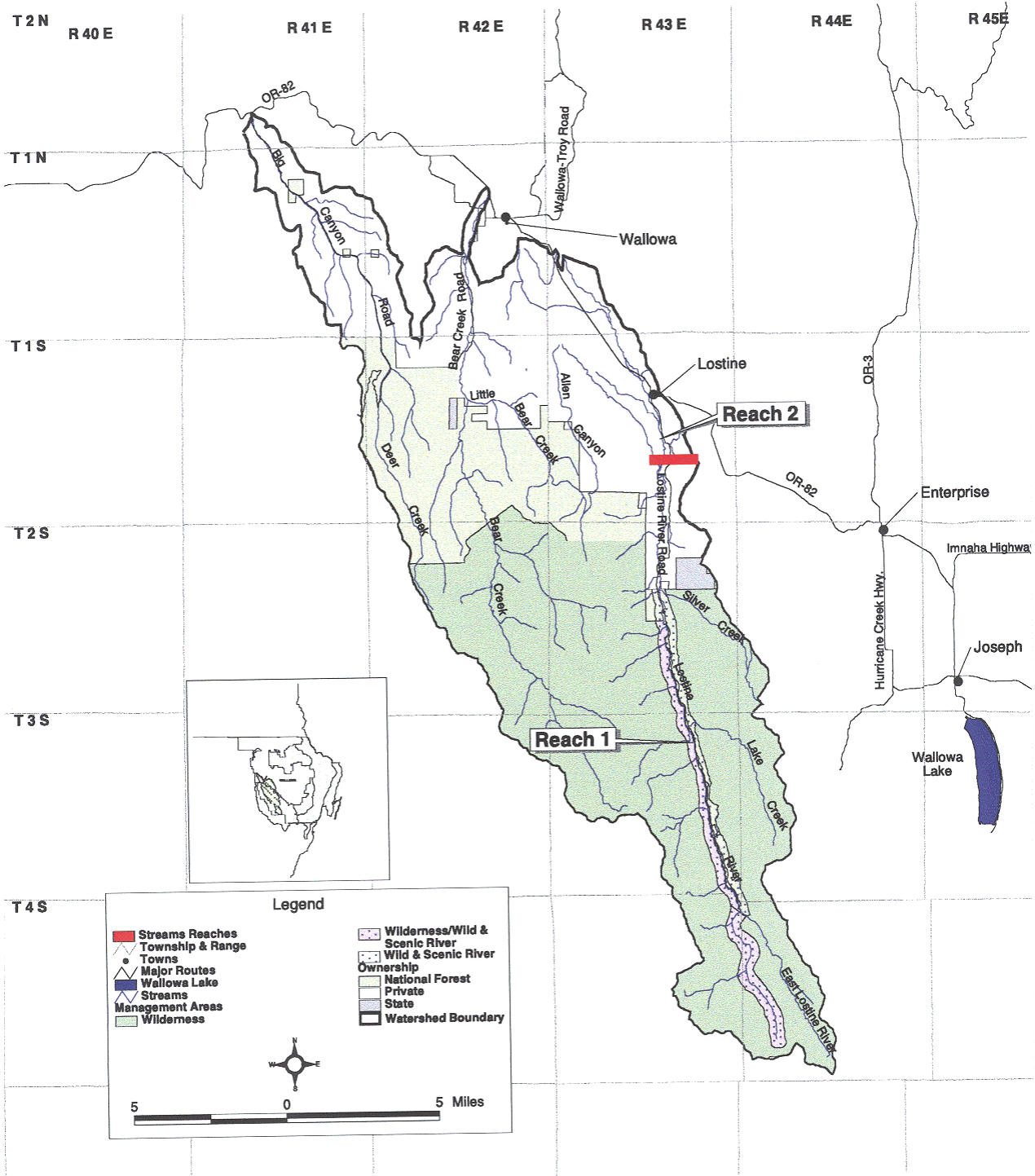


Lostine Watershed

(2 Reaches)



LOSTINE RIVER⁶

The Lostine River was analyzed in two reaches:

1. Headwaters to Strathearn's Pond
2. Strathearn's Pond to Wallowa River

The Lostine River rises in the Eagle Cap Wilderness and flows north to join the Wallowa River near the town of Wallowa. This tributary of the Wallowa River is about 30 miles long. An existing dam at Minam Lake stores some water that is released for irrigation purposes.

The main resource uses along the upper reach of the Lostine River (to Strathearn's Pond) include recreation (fishing, hiking, camping) in the wilderness area and some logging in addition to recreation in the reach outside of the wilderness but within the National Forest. There are a number of small land ownerships in the lower portion of this reach where logging, grazing, and other agricultural activities are ongoing.

Lands adjacent to the River in the reach downstream from Strathearn's Pond are privately owned. Resource activities include grazing and irrigated agriculture. Some reaches of the river are left with very low flows and dry at times when water is diverted for irrigation and stock water during low flow times. Irrigation return flows from the Cross Country Ditch diversion increase water quantity but contribute to water quality problems.

The Lostine River (together with the Imnaha and Wenaha rivers) historically had the largest runs of spring chinook in Wallowa County. Spring Chinook spawn from Lapover Meadows to the confluence with the Wallowa River, a distance of 21 miles. The run size has declined significantly since the mid-1960's when index surveys were standardized as to length, location, and time of year. Index areas were chosen because the majority of spawning occurs in the index reach. The index area is from the Six-mile Bridge downstream to the OC Ranch Bridge, a distance of 3 miles. The average redd count in the index area from 1964 to 1973 was 200.5 redds. The average redd count from 1979 to 1988 was 47.3 redds. The average redd count from 1989 to 1998 was 18.9 redds.

The Nez Perce Tribe and ODFW initiated a spring chinook captive broodstock hatchery program on the Lostine River in 1995 by collecting native juvenile chinook. This is a continuing program. The juveniles are split between Bonneville Hatchery on the Columbia River (fresh water rearing) and the Manchester Fish Hatchery located near Seattle, Wa. (salt water rearing). A captive brood program is generally initiated when a population has dropped to a level where extinction is imminent. The increased survival gained in the hatchery provides more smolts per juvenile collected than would be expected under natural conditions. The juveniles are reared to adults and spawned, and the offspring are returned to the Lostine River as smolts, then acclimated, and

⁶See also Watershed Management - Approaches to Implementing Solutions

released.

The Nez Perce Tribe initiated a conventional hatchery program on the Lostine River in 1997. Adults are trapped at a weir located approximately $\frac{3}{4}$ miles above the confluence with the Wallowa River. A portion of the adults are passed above the weir, and the balance are transported to Lookingglass Hatchery where they are spawned and reared to the smolt stage. They are then transported back to the Lostine River where they are acclimated and released. An acclimation site located approximately 13.5 miles above the confluence with the Wallowa River was established in 1999 by the Nez Perce Tribe to acclimate the first smolt release from the conventional program. The first release from the captive brood program will occur in 2000.

Lostine River--Headwater to Strathearn's Pond

Water Quantity

Tree Density (Medium Priority).--*Tree densities in portions of this drainage keep much of the precipitation (rain and snow) from reaching the ground, and this moisture is lost to the drainage.*

A long term policy of fire depression is the primary cause of tree density. Prescribed burning of small portions in the wilderness can create areas with less fuel that would allow control of wildfires and prevent catastrophic consequences. Precommercial and commercial thinning should be used to reduce excess densities in non-wilderness areas.

NOTE: Since the original plan was completed in 1993, a Wildland Fire Use Program has been completed for the Eagle Cap Wilderness. Several wildfires have been managed for resource benefits under this program.

Water Quality

Fuel Density (Medium Priority).--*Fires may destroy vegetative cover and consequently result in sediment input to the river.*

See "Water Quantity" in this section. Fuel rearrangement and/or piling, especially in riparian areas, could be used to reduce the risk of uncontrollable, catastrophic fire.

Stream Structure

Channelization (Low Priority).--*Channelization occurs on lower portions of this reach and limits diversity of stream structure.*

Do not permit any more channelization.

Bank Form (Low Priority).--*A variety of factors can contribute to bank erosion on this reach. The upper portions of the reach (National Forest and Eagle Cap Wilderness) are subject to fairly heavy recreational use including roads, trails, and campgrounds.*

Lower portions of this reach have some bank form problems relating to livestock use and channelization. High peak flows also contribute to bank erosion.

Recreational activities including road, campground, and trail use should be managed to avoid bank degradation. Logging activities should meet or exceed the requirements of the Oregon Forest Practices Act. Prevent excessive bank erosion and destruction by livestock through physical or electric fencing. Provide a water corridor or alternate water for livestock. Protect bank in livestock water corridor or road ford with rock of appropriate size. Avoid excess peak flows by keeping enough watershed vegetation to slow the runoff (and let some of it recharge the groundwater system). Good vegetation cover in riparian area will also stabilize banks and reduce erosion. Also see "Channelization" in this section.

Substrate

Physical Barriers (Low Priority).--*Log jams have, in the past, created actual physical barriers to fish passage.*

The river should be monitored, and if log jams actually become impassable, portions (not necessarily all of the jam) could be removed to allow fish passage.

NOTE: Since the original plan was completed in 1993, a log has been removed.

Dredging (Low Priority).--*Gravel is removed from this reach for concrete mix.*

Gravel dredging operations should be, and already are, limited to the time when there are not likely to be anadromous fish spawning (July 1 - August 15) or eggs in the gravel. Gravel operations should be confined to bars above the water level.

NOTE: Since the original plan was completed in 1993, this is not being continued unless ODFW approves.

Habitat Requirements

Harassment (Medium Priority).--*Recreational and resource use of the area, including trails and campgrounds, may contribute to harassment of spawning salmon.*

Recreational use of roads, trails, and campgrounds should be managed to avoid harassment of salmon, as well as to help maintain and enhance overall fisheries habitat. Thorn bushes could be planted along the streambanks to discourage use by potential harassers. Campgrounds could be moved away from the stream to discourage harassment. The river could be closed to sport fishing for other species, or have seasonal sport fishery closures. Education of recreational and resource users should help reduce harassment.

NOTE: Since the original plan was completed in 1993, housing density has been increased, and an educational program has been conducted through the campground hosts and through the school system.

Predation and Competition (Study).--*Predation and competition adversely affect salmon in this reach.*

Trout should not be stocked since they will prey on juvenile salmon, compete for food, and fishing should not be encouraged on these stocks. Bull trout in this stretch prey on juvenile salmon, but since they are listed as threatened, no action is recommended at this time.

NOTE: Since the original plan was completed in 1993, ODFW no long stocks trout in response to this plan.

Lostine River--Strathearn's Pond to Wallowa River

Water Quantity

Irrigation Withdrawals (High Priority).--*Irrigation diversions create instream flow problems, especially in some portions of this reach (potential alternative solutions are listed below).*

Conditions in the upper watershed, snowpack shading, etc. should be maintained in a healthy condition to provide late snowpack release and good ground water recharge. Diversions from one watershed to another should be avoided where possible. Water could possibly be leased during low flow times (i.e. after second cutting of hay) to supplement low flows. Work on increasing irrigation efficiency to leave conserved water in reaches with low flow problems. Study adding impoundments upstream to supplement irrigation water and keep natural flow in the river. Look into drilling wells to supplement flow where needed during low flow times.

NOTE: Since the original plan was completed in 1993, numerous landowners have installed more efficient irrigation systems such as sprinklers and gated pipe. Every irrigation ditch has been gauged with the irrigators' cooperation.

Minimum Flow (High Priority).--*There are minimum flow problems on portions of this reach.*

See "Irrigation Withdrawals" above. Make use of land use planning to limit possible future demands for agricultural and domestic purposes that would be detrimental to salmon habitat.

Flushing Flow (Medium Priority).--*Lack of high flows to trigger migration instinct in smolt, and flushing fine sediment from the spawning gravel could be a problem.*

Avoid impounding or diverting needed flushing flow. Other solutions include releasing impounded water for flushing flows and limiting tree density and vegetative cover to increase peak flows.

Water Quality

Temperature (High Priority).--*Lack of riparian vegetation and shade, as well as low flow*

levels, contributes to rises in water temperature.

Provide riparian shading by planting new shrubs and trees, as well as protecting existing trees. Protect (and possibly increase) flow from springs by enhancing groundwater recharge (limit surface runoff from roads, etc). The temperature of springs is generally ground temperature (45-50°F). Plant and/or protect conifers in riparian area to provide thermal cover in winter. Look at increasing irrigation efficiency and limiting amounts of warm irrigation return flows.

Excess Fine Sediment (High Priority).--*There is excess fine sediment in this reach which creates water quality and other problems for the salmon.*

See "Road Management" section in "Watershed Management" chapter. Prevent bank erosion and destruction through livestock by fencing riparian area and providing water corridors or alternate water sources. Protect water corridors with rock of appropriate size. Avoid devegetation in the upper watershed to the extent that it would result in extreme peak flows and cause bank erosion. Provide wetlands, filter strips, or settling ponds for feedlot runoff and irrigation return flows. Limit sediment-laden irrigation return flows. Limit overland return flows/sheet erosion off fields.

Irrigation Return Flows (High Priority).--*Irrigation return flows can contribute to excess sediment and temperature problems.*

See "Excess Fine Sediment" and "Temperature" in this section.

NOTE: Since the original plan was completed in 1993, two landowners installed settling pond in return irrigation ditches to reduce sediment.

Septic (Study).--*Study effects of leakage from septic systems on water quality and salmon habitat.*

If there is a problem with septic systems, possibly limit future development using the County comprehensive land use plan and improve current systems (ODEQ has information on improving septic systems).

Feedlots (Study).--*Runoff from feedlots on this reach may affect water quality.*

Prevent bank erosion and destruction (as well as loss of shade vegetation) by livestock through fencing and supplying water corridors or alternate water sources. Protect water corridors and road fords with rock of appropriate size. Provide filter strips, settling ponds, and/or wetlands for feedlot runoff.

NOTE: Since the original plan was completed in 1993, one major feedlot was moved away from the river.

Herbicides/Pesticides (High Priority).—See Countywide Issues

Excess Nutrient Loading (High Priority).--*Excess nutrient load results in a variety of water quality problems (including excess algae growth, loss of dissolved oxygen, etc).*

See "Feedlots," Excess Fine Sediment," and "Temperature" in this section. Avoid runoff from farmlands (fertilizer) and pastures.

Stream Structure

Woody Debris (High Priority).--*Lack of large woody debris limits stream structure and habitat.*

Add woody debris and preserve current woody debris. Do not permit additional channelization. Preserve and restore riparian vegetation to provide future source of woody debris.

NOTE: Since the original plan was completed in 1993, woody debris has increased.

Channelization (Low Priority).--*Channelization limits diversity of stream structure.*

Avoid permitting additional channelization and restore the channel where possible. Protect and restore riparian vegetation to stabilize banks, and assure that devegetation in upper watershed does not contribute to extreme peak flows.

Use comprehensive plan to deter developments on floodplain which could need channelization to protect them. Develop mitigation strategies for necessary channelization and/or bank protection.

NOTE: Since the original plan was complete in 1993, pool habitat has improved by many landowners allowing the river to return to natural river condition by reducing channelization, improving stream structure and substrate condition.

Bank Form (Low Priority).--*Heavy livestock use and channelization lead to bank erosion and degradation.*

See "Excess Fine Sediment," Riparian Vegetation," and "Channelization" in this section.

NOTE: Since the original plan was completed in 1993, fences have been installed to exclude livestock along the river.

Substrate

Cobble Embeddedness (High Priority).--*Cobble embeddedness in this reach is a problem.*

See "Flushing Flow" and "Excess Fine Sediment" in this section.

Excess Fine Sediment (High Priority).--*Excess fine sediment limits fish habitat by creating water quality and substrate problems. This is due to high deposits from the Cross Country Ditch.*

Protect upland watershed vegetative cover to avoid quick surface runoff, high peak flows, and bank erosion. In some areas, space trees so that snow can reach the ground (instead of evaporating and sublimating) and build up

snowpack to provide flushing flow. Release impounded water from new impoundments if they are built to provide flushing flow. Increase flow quantity (see "Minimum Flow" and "Water Quality" in this section).

Physical Barriers (High Priority).--*Low flows combined with one diversion structure sometimes provide physical barriers to fish passage.*

Provide adequate minimum flow levels (see "Minimum Flow" in this section). Modify diversion barriers to better provide fish passage. Provide passage through swimming hole dams.

NOTE: Since the original plan was completed in 1993, four major ditch diversions have been installed in the Lostine River with fish passages.

Dredging (Low Priority).--*Gravel is removed from this reach for concrete mix.*

Gravel dredging operations should be, and already are, limited to the time when there are not likely to be anadromous fish spawning (July 1 - August 15) or eggs in the gravel.

NOTE: Since the original plan was completed in 1993, this is continuing however plant is in the process of moving location.

Habitat Requirements

Riparian Vegetation (Low Priority).--*Riparian vegetation on this reach could be improved.*

Preserve existing riparian vegetation and restore riparian vegetation where needed to preserve cooler water temperatures. Plant and/or protect woody vegetation in riparian areas to provide shade in summer and thermal cover in winter (allow for diversity and do not plant/favor conifers exclusively).

NOTE: Since the original plan was completed in 1993, numerous landowners have planted vegetation along the river to help improve shade.

Predation and Competition (Study).--*Predation and competition may adversely affect salmon in this reach.*

Trout should not be stocked that will prey on juvenile salmon or compete for food. Bull trout in this stretch prey on juvenile salmon, but since they are likely to be listed as threatened, no action is suggested. Provide alternate location for sport fishing.

Diversion Screening (Low Priority).--*All Irrigation diversions and return flows assessable to fish have been screened since the original plan was completed in 1993.*

Diversions and returns should be screened, monitored, and maintained.

