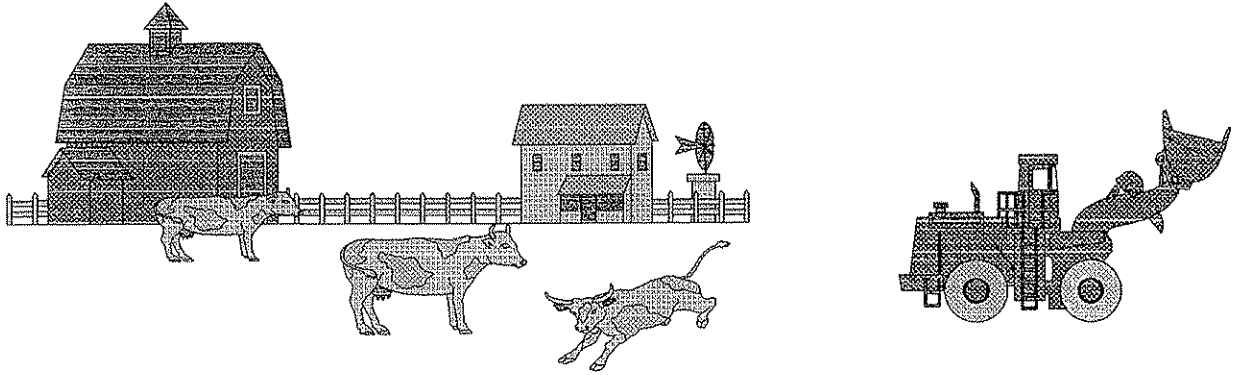
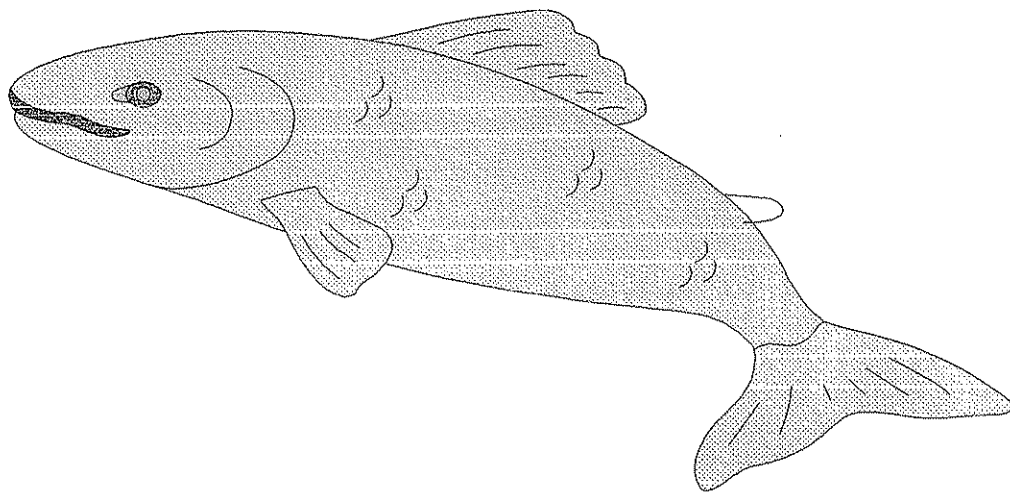


WALLOWA RIVER SPRING CHINOOK



HABITAT PROTECTION AND RESTORATION STRATEGIES



WALLOWA RIVER SPRING CHINOOK

HABITAT PROTECTION AND RESTORATION STRATEGIES

POPULATION STATUS

The population is listed "threatened" under the Endangered Species Act.

While information regarding pre-1900's spawning distribution is lacking, a conservative estimate of spawning area would include all major streams within the Wallowa Valley, including 17 miles of Bear Creek, 25 miles of the Lostine River, 8 miles of Hurricane Creek, 30 miles of the Wallowa River and 6 miles of Prairie Creek. Spawning habitat totaling 86 miles (Attachment).

By the mid-1950's chinook spawning distribution had decreased by 20 miles. Thompson and Haas (1960) indicated that in 1957 spring chinook spawned "from 2 miles below Joseph to 3 miles below Wallowa" a distance of 25 miles. Hurricane Creek provided only another 3 miles of habitat, the upper valley reaches of Hurricane Creek were dewatered by irrigation withdrawls. Spring chinook spawning extended from the mouth upstream in the Lostine River, but in Bear Creek irrigation withdrawls had already restricted chinook spawners to the upper reaches of the stream (Attachment).

Even though substantial habitat changes had already occurred by 1957, that year 131 redds were identified in Hurricane Creek and 239 redds were counted in 10 miles of index area on the Lostine River.

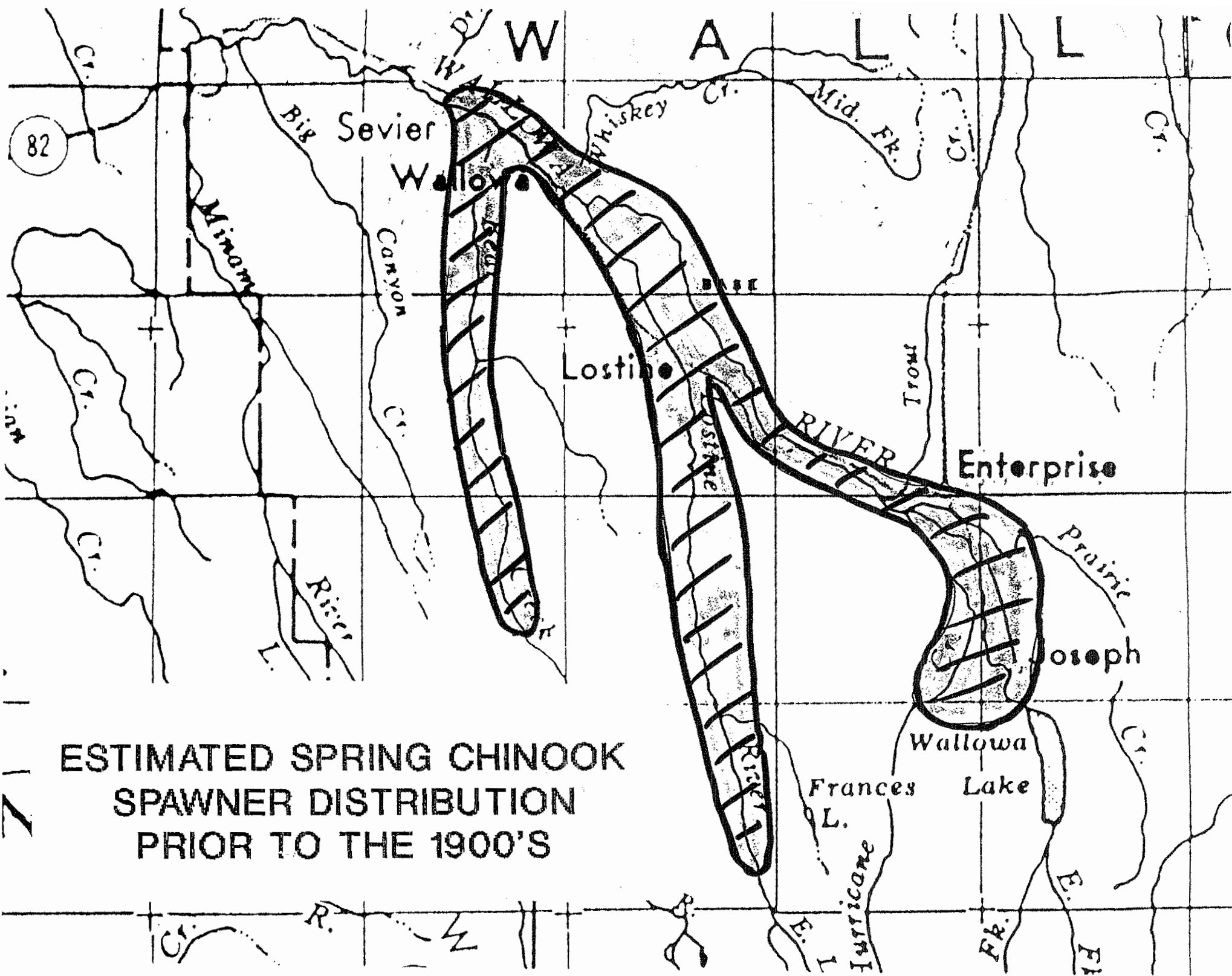
Since that time the lower six miles of the Lostine River, several miles of the Wallowa River below Joseph and lower Wallowa below Wade Point have been lost from the distribution of spawners. In 1992 chinook spawned within approximately 40 miles of habitat, less than one half that utilized before the turn of the century (Attachment).

This past year one redd was counted on Hurricane Creek and 22 were identified in the entire Lostine River. We counted no redds during index and extensive counts in the Wallowa River and Bear Creek and one in Prairie Creek during 1992.

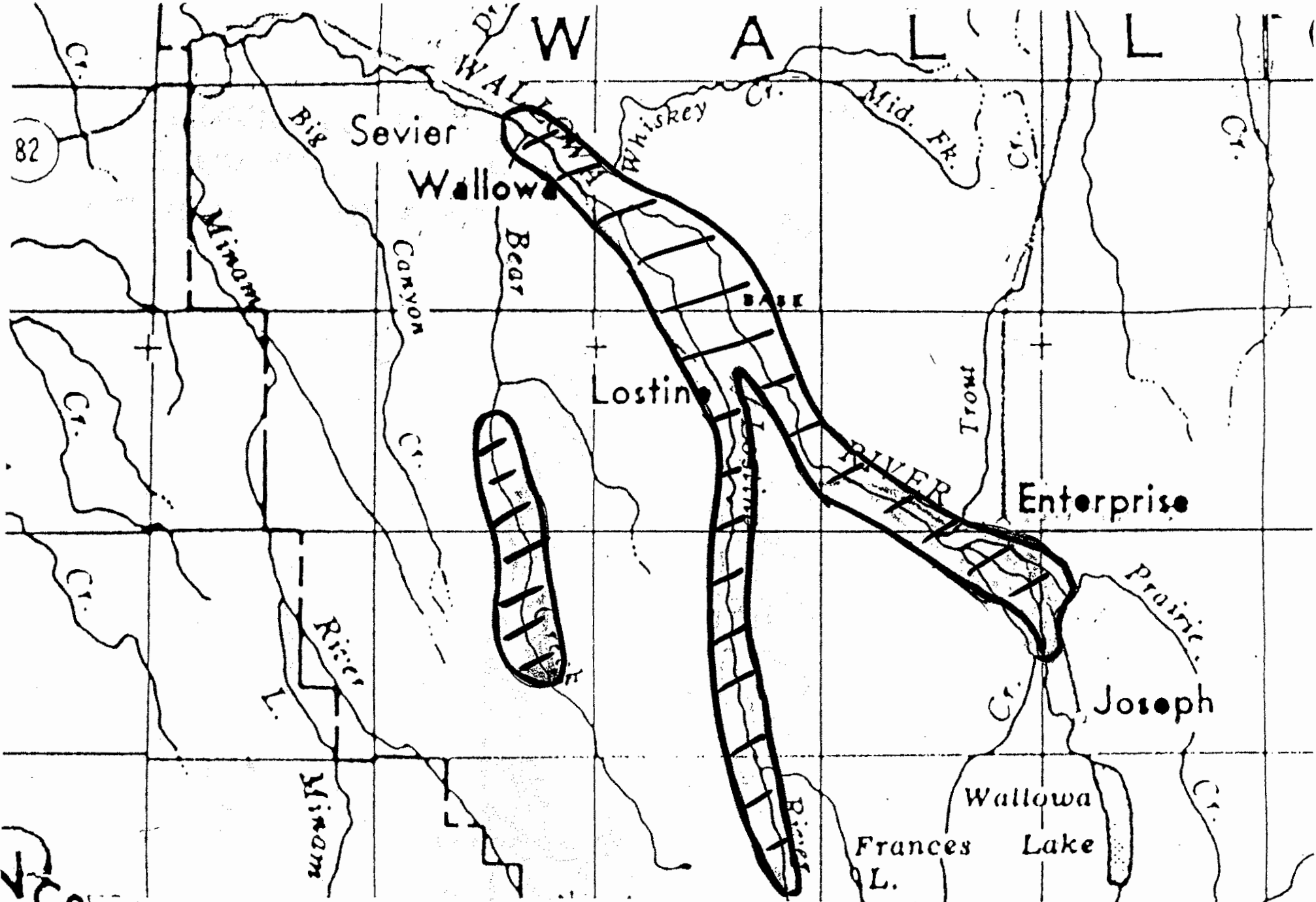
Some reduction in spawner distribution is obviously related to the low number of spawners. Additional reductions have resulted from habitat changes which precluded spawners from reaches of stream. As noted above, many of the causal changes occurred prior to the 1950's. This fact and the extremely low current seeding level, suggests that quantity of spawning and rearing habitat may not limit chinook production within Wallowa basin streams.

HABITAT ALTERATION

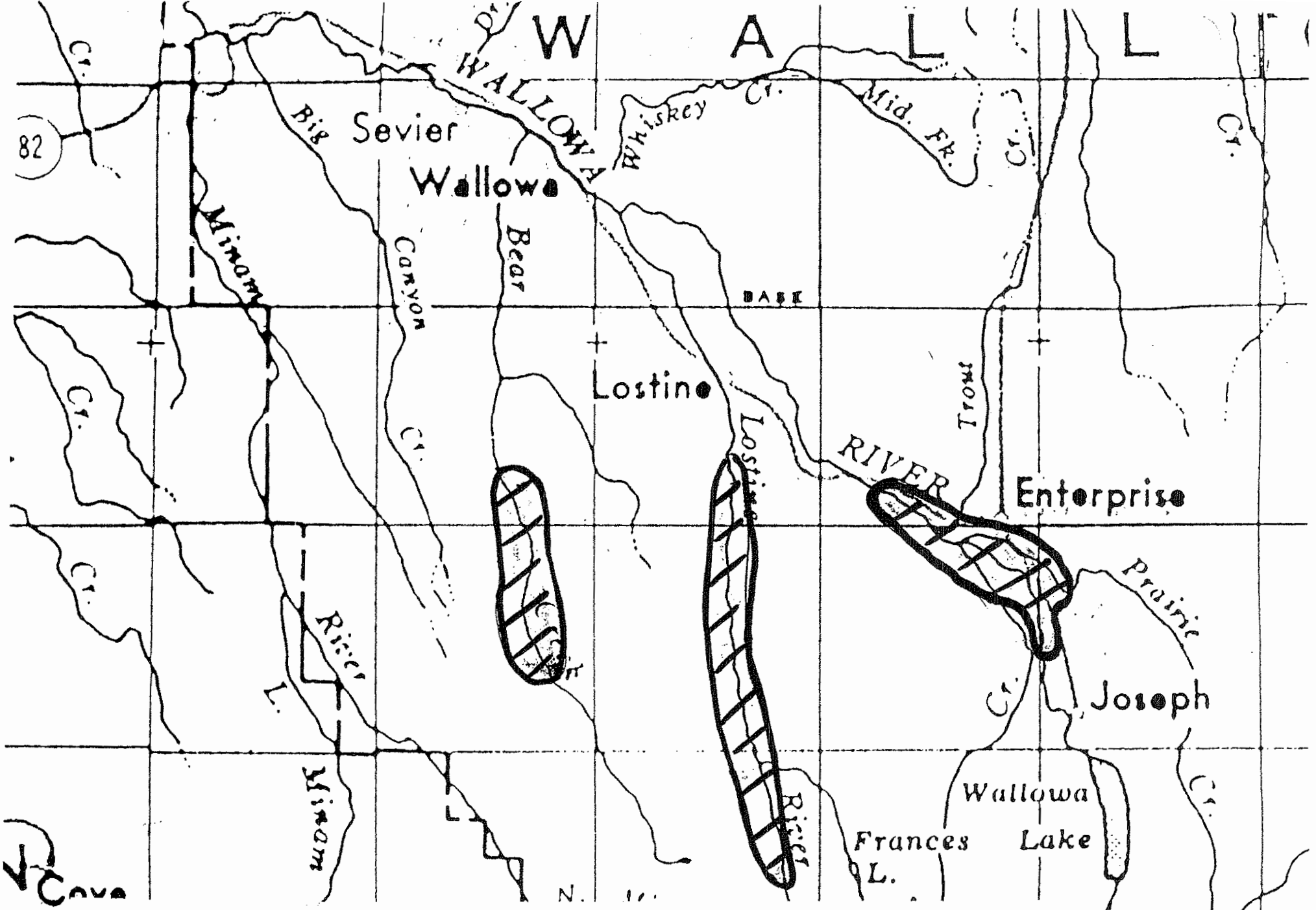
By the 1920's substantial areas of the valley were cleared, plowed and under irrigation. By the early 1930's the irrigation system in place; stored water behind a dam at Wallowa Lake, diverted much of the flow from Big Sheep Creek and Wallowa Lake



**ESTIMATED SPRING CHINOOK
SPAWNER DISTRIBUTION
PRIOR TO THE 1900'S**



SPRING CHINOOK SPAWNER DISTRIBUTION
MID - 1900'S



SPRING CHINOOK SPAWNER DISTRIBUTION
1992

into the Prairie Creek drainage, dewatered Hurricane Creek to irrigate Alder Slope and diverted the Wallowa and Lostine river water across Bear Creek to irrigate Diamond Prairie.

As the value of farm land increased more and more riparian flood plain gave way to fields and more and more curves and meanders became straight and ditch-like. After the 1964 flood miles of stream were straightened within several years, much of it subsidized by the federal government. What was once a river with miles of braided channel and meanders interacting with substantial cottonwood and conifer flood plains became straight, swift, shallow and exposed (Attachments).

Historic livestock use in the valley consisted of cow/calf operations which involves winter feeding of cows in areas used for hay production. This type of operation in combination with flood irrigation produces substantial sediment in overland return flows through the summer. More recently winter feeding of yearlings in feedlots has become popular in the valley. Since adequate water is a necessary ingredient for these facilities many were located along streams or ditches.

IMPACTS OF HABITAT CHANGES

Some have argued that habitat changes outside the Wallowa/Grande Ronde control the productivity of basin chinook. While that argument may hold in part, the fact that areas with less altered habitat ie. the Wenaha and Minam rivers have managed, until recently, to maintain relatively higher adult production suggests that in basin habitat impacts have also affect chinook production. While some loss of certain habitats has occurred, current extremely low spawner numbers (10% of those seen historically), suggest that the quantity of in-basin habitat is not limiting. Available data suggests that water temperatures do not limit spawning or rearing distribution of spring chinook except in association with substantially dewatered stream reaches. Habitat inventory data for all valley streams will be available soon, but we still lack specific life history and habitat utilization data needed to make an accurate determination on the habitat availability question.

While water and in general chinook habitat in major stream reaches above the Wallowa Valley proper remain of good quality, obvious decreases in habitat quality have occurred within valley floor reaches. These changes include; increased sediment production from agricultural lands, loss of stream flow in some stream reaches and modification of stream habitat toward a more exposed, shallower and steeper gradient condition. These habitat quality changes have the potential to create substantial non-density dependant mortality, among these; sedimentation of redds and stranding of juveniles in ice or in dewatered channels. These mortality factors are contributing to the continued decline in spring chinook numbers.

SEDIMENTATION - Flow in the Wallowa River, Prairie Creek, lower Hurricane Creek and lower Lostine River consist mainly of sediment laden irrigation return flow. Sedimentation has long been identified as factor affecting survival of eggs in the

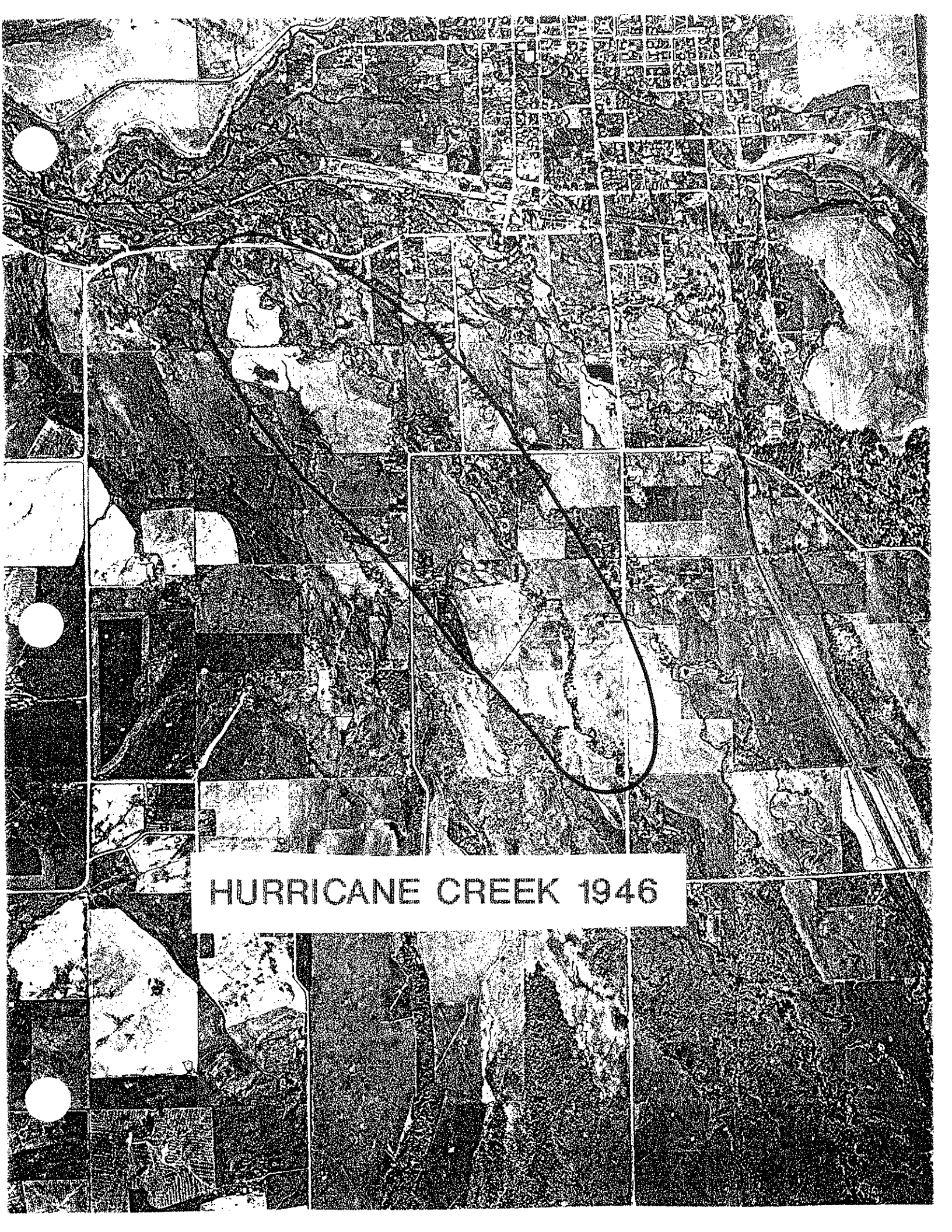


WALLOWA RIVER (RM 27) 1946

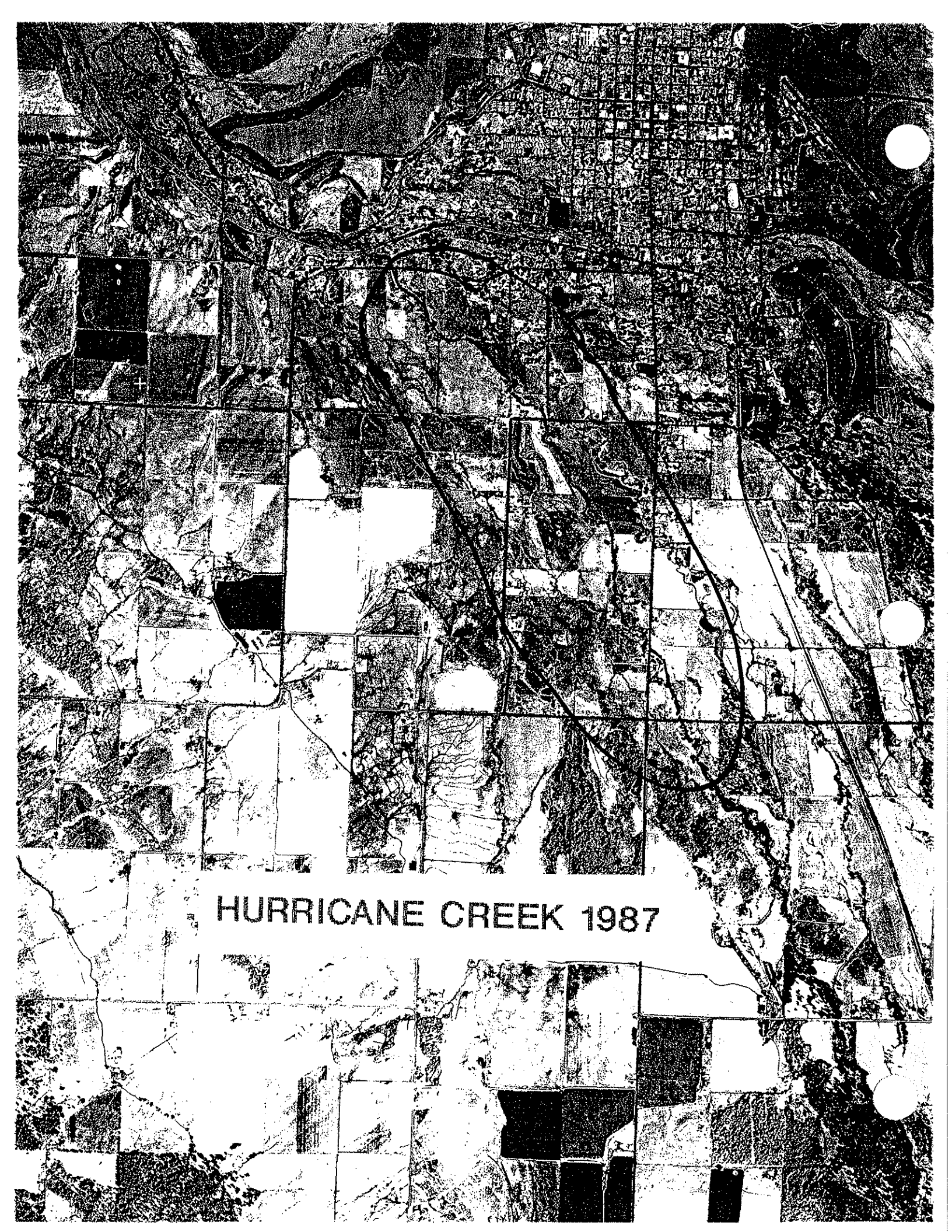
93-87

WALLOWA RIVER (RM 27) 1987





HURRICANE CREEK 1946

An aerial photograph of a landscape, possibly a wetland or agricultural area, with a grid overlay. The grid consists of thin black lines forming a rectangular pattern. The terrain is highly textured, with various shades of gray and black, suggesting different vegetation or soil types. A prominent dark, winding feature, likely a creek or road, runs diagonally across the center. The overall image has a high-contrast, grainy appearance. A white banner with black text is positioned horizontally across the lower middle of the image.

HURRICANE CREEK 1987

gravel. In many stream reaches in the Wallowa drainage sediment rich irrigation return flows continually introduce fine organic and inorganic material through the low flow summer months. Large accumulations of sediment exist in pools and on the gravel by the time chinook spawn. Any later disturbance of the channel by livestock, increased flows or human activity sends a cloud of sediment down stream and over redds reducing the chances chinook eggs will survive to hatching. Additional sediment is produced and deposited in Valley streams through the fall, winter and spring as a result of winter feeding and feed lot operations.

Sedimentation is obvious when surveying sections of these streams. Accumulations of muck in pools may reach a foot in depth and sediment is visible even on riffle substrate. Kent Ashbaker of the DEQ was quoted in the Wallowa County Chieftain; "It's the worst I've seen in the state. I've found places where I suspect you'll find two or three feet of cow manure in the creek". Data from areas of the Upper Grande Ronde suggest that what looked to be levels of sedimentation comparable to those seen in the Wallowa drainage could be creating 80% mortality prior to emergence.

Related to the sediment problem is poor water quality which has an undetermined impact on wild fish survival. Prairie Creek water samples consistently exceed State water quality standards for E. coli. Water quality problems in the Wallowa Hatchery water supply causes mortality of steelhead smolts held in spring runoff water. This relationship is currently poorly understood.

DEWATERED STREAM CHANNEL - As a result of the combination of irrigation withdrawals and channel alterations five miles of Hurricane Creek, six miles of the Lostine River and three miles of Bear Creek are dewatered or extremely low from mid-July through September. In general irrigation demand gradually reduces streamflow below major diversions. When when the final stoplogs or bales of hay are added, however, the stream channel dries up or is substantially dewatered. Chinook which by chance find themselves in the area below a diversion are often trapped in remaining pools and subject to predation or later dehydration. Information on ditch flow collected by screens personnel suggest many valley diversions are exceeding legal withdrawal by as much as 100%.

WINTER ICING - Channel alterations affecting the quality of overwinter chinook habitat have occurred throughout valley streams. Ice formation in open, shallow stream reaches typical of channelized streams has a tendency to occur from the bottom up rather than as a bridge. This anchor type ice formation has a much greater tendency to trap and strand juveniles than does ice bridge formation. As water temperatures drop in the fall juvenile chinook seek rubble/cobble substrate available in many valley stream reaches. When this habitat occurs in the more exposed, shallow reaches of stream mortality is more likely to occur even during a normal winter.

PROTECTION AND RESTORATION STRATEGIES

GENERAL

- Develop a coordinated effort by state agencies to address Endangered Species Act considerations. Currently no other state agencies appear to be taking no interest in modifying rules and activities to fit the needs of spring chinook in the basin.
- Screen irrigation ditches. All ditches known to affect spring chinook in the Wallowa Valley have been screened. Several additional areas are being studied.
- Monitor county land use plan related decisions.

SEDIMENTATION

- Complete arrangements with ditch companies to consolidate spring flow released from Wallowa Lake to provide some flushing of the Wallowa River above Enterprise. It remains to be seen if flows will be available this year.
- Continue work with the SWCD, DEQ and Department of Agriculture to address confined animal feeding operation problems through their authority. It remains to be seen if current processes are adequate to handle the situation. May need some legislation or rule changes to accomplish real progress.
- Continue work with the SWCD and SCS to address bank stability and livestock use problems through their cost share program. SCS received \$200,000 as a block of cost share funds dedicated to address water quality problems in the Prairie Creek system. Approximately one half the amount has already been applied in various problems, ie., stream fencing, moving feed lots, development of upland water sources and development of collection lagoons. Several projects are in the planning stage.
- Support any state or federal agency efforts to provide additional funds to address water conservation and sediment control measures within the basin.
- Continue to emphasize the need to control overland return flows in public contacts.
- Monitor forest practices operations to insure compliance.

Efforts to address sedimentation would at the same time eliminate sources which currently reduce water quality in terms of E. coli pollution.

Water conservation measures discussed below will also reduce sediment transport through reduction of overland return flow.

DEWATERED STREAM CHANNEL

- Develop instream flow data for remaining reaches of the Wallowa River and for Prairie Creek.

- File for additional instream water rights as data is available.
- Begin immediately develop a sound working relationship with new Water Resource personnel. We are expecting several new personnel to be appointed for Wallowa County in 1993.
- Work with the new Water Resources personnel to identify water use violations and develop and implement realistic approaches to control over-use of water, ie., installation of head gates, determination of valid use levels and monitoring. Place emphasis on Wallowa River diversions to Prairie Creek, upper Hurricane Creek, Lostine River and Bear Creek. This effort will require continued contact with Water Resources at region and state levels.
- Monitor instream flows and report loss of streamflow and flows below instream water rights to Water Resources.
- Monitor new water rights applications and comment regarding impacts on spring chinook and other species.
- Continue support of a study to identify alternatives for water conservation in the Prairie Creek drainage. The type of projects considered could conserve water through improved delivery systems and more efficient irrigation and not only provide water conserved water for instream use in the Wallowa River but also reduce overland irrigation returns and reduce sediment input. The effort included the SCS, BOR, local SWCD and irrigators. Joseph residents who feared that the ditches running through the Joseph area would be replaced by pipe now have the process on hold.
- Continue to support and maintain involvement in efforts by the County to develop a county-wide water conservation plan. Water conservation techniques discussed within the context of the Wallowa/Prairie Creek system could be applied to other areas of the drainage.
- Continue support of SCS efforts to improve water use efficiencies on farm by farm basis.

WINTER ICING

This problem by its nature will require long-term approaches to restoration. But its solution will carry with it many benefits to instream diversity, bank stabilization, stream shading and dispersal of flood water impacts.

- Monitor and provide protection guidelines for DSL permitted fill and removal activities.
- Continue efforts to educate landowners on the principals and value of stream habitat protection.
- Utilize funding as available (GWEB, Upland Game Bird, Restoration and Enhancement Board or Fish Management) to address riparian habitat restoration opportunities as they arise. Need to consider setting aside more program dollars for habitat projects. Small fencing projects that the District can address with readily available supplies

provide substantial returns in public relations, education and habitat improvement without great expense.

- Re-establish BPA or other funding for a habitat restoration program focused in the Wallowa Valley with an emphasis on riparian restoration.
- Continue work with SCS and the SWCD to develop cooperative public education oriented riparian restoration projects.

ADDITIONAL AREAS OF CONCERN

SPRING CHINOOK/BIG SHEEP CREEK - Grazing and logging impacts continue to impact habitat.

SPRING CHINOOK/IMNAHA - Sedimentation from slides originating in the wilderness threaten higher mortality of adults.

BULL TROUT/BIG SHEEP CREEK - Grazing, logging, irrigation and hydro-power impact these populations.

BULL TROUT/LITTLE BEAR CREEK - Population is impacted by sediment production from timber harvest activities

STEELHEAD/LOWER GRANDE RONDE TRIBS. - Grazing and logging continue to impact these streams.

STEELHEAD/NORTH SIDE WALLWOA TRIBS. - Again grazing and logging are a continuing threat to the streams and fish.

NOTE: Wallowa River/Prairie Creek Situation

Through the course of the irrigation season water from the Big Sheep Creek and Wallowa River drainages is diverted into the Prairie Creek. The combined volume of water diverted can exceed 500 cfs, a substantial summer flow for a small drainage. While some irrigation within the Prairie Creek drainage has been converted to sprinkler systems, a large portion of it remains in flood irrigation. Irrigation return to Prairie Creek maintains good flow in the stream but also contribute substantial sediment to the system.

In order to provide late season irrigation water for much of the Wallowa Valley runoff is stored in Wallowa Lake. This reduces spring flows in the River between the Lake and the mouth of Prairie and Hurricane creeks, approximately eight miles. With most of the later flow diverted to Prairie Creek the Wallowa River between Joseph and Enterprise flows only a few cubic feet per second through most of the summer. The combination of reduced spring and summer flows and continued sediment input allows build-up of sediment from one year to the next. After a number of drier than normal years the Wallowa River above Enterprise is highly sedimented.

PROVISIONAL WILD FISH POPULATIONS FALL CHINOOK

COMPLIANCE

POP. HATCHERY POP.
CODE WILD >300

LOCATION/POPULATION

COMMENTS

LOWER COLUMBIA RIVER (BELOW BONNEVILLE DAM)

LOCATION/POPULATION	POP. CODE	WILD	HATCHERY POP. >300	COMMENTS
Youngs Bay	CHF025000			
Lewis & Clark River	CHF025001	Unk	Unk	Rogue River fall chinook from net pens and stray Tules. Extinct?
Youngs River	CHF025002	Unk	Unk	Rogue River fall chinook from net pens and stray Tules. Extinct?
Klaskanine River	CHF025003	Unk	Unk	Rogue River fall chinook from net pens and stray Tules. Extinct?
Big Creek	CHF029001	No	Unk	Rogue River fall chinook from net pens and stray Tules. Extinct?
Plympton Creek	CHF031001	Unk	Unk	Rogue River fall chinook from net pens and stray Tules. Extinct?
Clatskanine River	CHF032001	Unk	Unk	Rogue River fall chinook from net pens and stray Tules. Extinct?
Milton Creek	CHF033001	Unk	Unk	Extinct?
Scappoose Creek	CHF034001	Unk	Unk	Extinct?
Sandy River	CHF035001	Unk	Yes	Tule fall chinook.
Sandy River	CHW036001	Unk	No	2-3 late fish observed by anglers in 1990. Possible interaction with Naturalized hatchery fish - hybridization?
WILLAMETTE RIVER (Below Falls)				
Clackamas River	CHF038001	Unk	Yes	Releases into Willamette and Willamette Tribs. Basinwide sport catch in 1989 = 250, thus population likely > 300.
MID COLUMBIA (Bonneville dam to Snake River)				
Eagle Creek	CHF039001	Unk	Unk	Likely no wild fish. Extinct?
Hood River	CHF041001	Unk	No	Punchcard estimate for 1989 = 7 fish!
Deschutes River	CHF042001	Yes	Yes	

SNAKE RIVER

Grand Coulee Canyon Dam	CHF043001	No	No	From Youngs Bay

No Change

**PROVISIONAL WILD FISH POPULATIONS
SPRING CHINOOK**

LOCATION/POPULATION	POP. CODE	COMPLIANCE		COMMENTS
		HATCHERY VS WILD	POP. > 300	
John Day River	CHS013000			
N. Fork John Day River	CHS013001	Yes	Yes	
M. Fork John Day River	CHS013002	Yes	No	1990 and 1991 Spawning surveys of 3.9 & 2.9 redds/mile, respectively @ 30 miles of habitat <300 fish.
Mainstem, above South Fork	CHS013003	Yes	Yes	
SNAKE RIVER				
Grande Ronde River				
Wenaha River	CHS014001	No	No	180 fish in 1991; 1986-89 average % H=47%.
Wallowa River	CHS014002	No	No	17 fish in 1991.
Minam River	CHS014003	No	No	89 fish in 1991; 1986-89 average % H=36%.
Lostine River	CHS014004	No	No	48 fish in 1991; 1986-89 average % H=43%.
Catherine Creek	CHS014005	No	No	45 fish in 1991; 1986-89 average % H=60%.
Upper Grand Ronde	CHS014006	No	No	24 fish in 1991; 1986-89 % H=73%.
Imnaha River	CHS015001	No	No	221 fish in 1991; 40% H fish 1990. Potential genetic differences between hatch and wild in age structure.
Big Sheep Creek	CHS015002	No	No	14 fish in 1991; % H probably like Imnaha @ 40%.

No Change

PROVISIONAL WILD FISH POPULATIONS SUMMER STEELHEAD

LOCATION/POPULATION	POP. CODE	COMPLIANCE		COMMENTS
		HATCHERY POP. VS WILD	> 300	
NORTH MID COAST (Cascade Head to Heceta Head)				
Siletz River	STS001001	No	Yes	> 50% Hatchery w/wild infusion. Also, direct releases into Tillamook and Nestucca.
SOUTH MID COAST (Heceta Head to Cape Blanco)				
N. Umpqua River	STS002001	No	Yes	> 50% Hatchery and not 100% wild broodstock. Statistical creel in 1990.
SOUTH COAST (Cape Blanco to California border)				
Rogue River	STS003000			
Rogue - Spring Run	STS003001	Unk	Yes	Primarily above Gold Ray dam; May 15 to July 15 run timing.
Rogue - Fall Run	STS003002	Yes	Yes	Primarily below Gold Ray dam; September to December run timing.
Applegate River	STS003003	Yes	Yes	
COLUMBIA RIVER TRIBUTARIES				
Hood River	STS004001	No	Yes	We know (from punchcard data) run >> 300 fish; also know majority are hatchery fish.
Deschutes River	STS005001	No	Yes	> 10% strays from other basins; run is >> than 300 fish
John Day River	STS006000			
Lower John Day (mouth to South Fork)	STS006001	Yes	Yes	Spawning survey data suggests this population contains at least 1000 fish; scale analysis indicates 11% hatchery fish in catch.
N. Fork John Day River	STS006002	Yes	Yes	Spawning survey data suggests this population contains at least 1000 fish
M. Fork John Day River	STS006003	Yes	Yes	Spawning survey data suggests this population contains at least 1000 fish
S. Fork John Day River	STS006004	Yes	Yes	Spawning survey data suggests this population contains at least 1000 fish
Upper John Day (above S. Fork)	STS006005	Yes	Yes	Spawning survey data suggests this population contains at least 1000 fish
Umatilla River	STS007001	Yes	Yes	< 50% hatchery fish, assume this stock is genetically similar; concerns that it doesn't go out of compliance.
Walla Walla River	STS008001	Unk	Yes	Scale analysis conducted on fish from Washington tribs indicates 24% hatchery fish; hatchery fish originate from WDW program
SNAKE RIVER TRIBUTARIES				
Snake River (stateline to Hells Canyon Dam)	STS009001	No	Yes	Maintstem and small tributaries; 1000K smolts planted @ Hells Canyon Dam
Grande Ronde River	10000			
Lower Grande Ronde (up to Wallowa R.)	STS010001	Unk	Unk	
Joseph Creek	STS010002	Yes	Yes	No hatchery fish recovered during spawning surveys; redds/mi = > 300 fish
Wenaha River	STS010003	Unk	Unk	
Wallowa River	STS010004	Unk	Unk	
Minam River	STS010005	Unk	Unk	
Upper Grande Ronde (above Wallowa R.)	STS010006	No	Yes	Some spawning surveys in upper Grande Ronde streams.
Imnaha River	STS012001	Unk	Yes	Uncertain whether they are genetically similar hatchery fish and < 50%

No change

**PROVISIONAL WILD FISH POPULATIONS
RAINBOW TROUT**

COMPLIANCE

POP. HATCHERY POP.
CODE VS WILD >300

LOCATION/POPULATION

COMMENTS

SNAKE RIVER

LOCATION/POPULATION	POP. HATCHERY CODE	VS WILD	POP. >300	COMMENTS
Grande Ronde River				
Lower Grande Ronde	Rb	Unk	Unk	Rb & STS planted adjacent areas.
Upper Grande Ronde	Rb	Yes	Unk	Rondowa to headwaters (RM 83 to 205). Upper 2 miles BT only.
Joseph Creek (Lower)	Rb	Yes	Yes	Observations of spawners suggest >300 spawners. Sampling Broody and Horse Cr Suggest >300 spawners. 1992
Upper Joseph Creek	Rb	Yes	Yes	Distance, above Swamp Cr., based on observations during STS spawning surveys.
Wenaha River	Rb	Yes	Unk	
Lookingglass Creek	Rb	Unk	Unk	Above Wier. Rb planted above (in private ponds, Langdon Lake and Jubilee Lake).
Jarbeau Creek	Rb	Yes	Unk	Above falls RM 3.25
Clarks Creek	Rb	Yes	Unk	Above falls RM 10.75
MFk Clarks Creek	Rb	Yes	Unk	Above falls RM 1.5
Catherine Creek				
Little Creek	Rb	Yes	Unk	Above falls RM 9.0
Beaver Creek				
Dry Beaver Creek	Rb	Yes	Unk	Distance
Upper Beaver Creek	Rb	Yes	Unk	Above Dam RM 12.75
EF Grande Ronde River	Rb	Yes	Unk	Above falls RM 2.5.
Wallowa River	Rb	Yes	Yes	Observations of spawners suggest >300 spawners.
Minam River	Rb	Yes	Unk	
Little Minam River	Rb	Yes	Unk	Above Falls RM 3.5; very few observed in 1991 surveys.
EF Wallowa River	Rb	Unk	Unk	Above falls. Rb planted above in lakes.
WF Wallowa River	Rb	Unk	Unk	Above falls. Rb planted above in lakes.
Snake Mainstem below Hells Canyon Dam	Rb	Unk	Unk	Rb planted in reach.
Cook Creek	Rb	Yes	Unk	Above Falls, Snake Trib Fish abundant 1992 sample > 300 fish
Cherry Creek	Rb	Yes	Unk	Above Falls, Snake Trib " " " > 300 fish
Imnaha River	Rb	Unk	Unk	Distance. Pops sep by falls. 2 pops with falls.
Deep Creek (direct trib to Snake)	Rb	Yes	Unk	Above falls
McGraw Creek	Rb	Yes	Yes	Above Falls, Snake Trib.; fish abundant in 1990 sample. Unique population.
Pine Creek	Rb	Unk	Yes	Snake Trib; fish present?. Rb planted directly. Fish abundant in 1989 sample.
Snake Mainstem above Hells Canyon Dam	Rb	Unk	Unk	Rb planted directly.
Powder River	Rb	Unk	Unk	Snake River to Thief Valley Dam. Rb directly stocked.
Powder River	Rb	Unk	Unk	Thief Valley Dam to Mason Dam. Rb directly planted
Powder River	Rb	Unk	Unk	Above Mason Dam. Rb directly planted.
Eagle Creek	Rb	Unk	Unk	Distance. Rb directly planted.
Burnt River				
N&S Fk Burnt	Rb	Unk	Unk	In SF above Unity Dam. Rb directly planted.
Malheur River				
Willow Creek	Rb	Yes	Unk	
Bully Creek	Rb	Yes	Unk	Above Bully Cr. Dam
Cottonwood Creek	Rb	Yes	Unk	Distance.
Squaw Creek	Rb	Yes	Unk	Distance isolates.

1992

5

Add
Hatchery
Cr
UNK
on both

**PROVISIONAL WILD FISH POPULATIONS
BULL TROUT**

LOCATION/POPULATION	COMPLIANCE			COMMENTS
	POP. CODE	HATCHERY VS WILD	POP. >300	
	Reynolds Creek	BuT	Yes	
Deardorff Creek	BuT	Yes	Yes	Summer thermal barriers isolate population?
Rall Creek	BuT	Yes	Yes	Gradient barrier in upper reaches.
Call Creek	BuT	Yes	Yes	
Umatilla River				
N. Fk. Umatilla	BuT	Yes	Unk	1990 surveys indicate fish present, but numbers unknown.
S. Fk. Umatilla	BuT	Yes	Unk	1990 surveys indicate fish present, but numbers unknown.
Walla Walla River				
N. Fk. Walla Walla	BuT	Yes	Yes	1990 surveys show good numbers of fish.
S. Fk. Walla Walla	BuT	Yes	Yes	1990 surveys show good numbers of fish.
Mill Creek	BuT	Yes	Unk	Summer thermal barriers isolate population?
SNAKE RIVER				
Grande Ronde River				
Wenaha River	BuT	Yes	Yes	USFS snorkel crew surveys estimate over 300 spawning fish.
Wallowa River				
Minam River	BuT	Yes	Yes	
Little Minam River	BuT	Yes	Yes	Falls. 1991 R & E Inventory.
Bear Creek	BuT	Yes	Unk	<i>Deer Creek</i> <i>yes</i> <i>yes</i> } Interaction w/ BT Bear C Lostine R Hurricane C
Lostine River	BuT	Yes	Unk	
Hurricane Creek	BuT	Yes	Unk	
EF Wallowa River	BuT	Yes	Unk	Falls. Extinct?
WF Wallowa River	BuT	Yes	Unk	Falls. Extinct?
Upper Grande Ronde River				
Lookingglass Creek	BuT	Yes	Unk	Summer thermal barrier isolates population?
Indian Creek	BuT	Yes	Unk	Summer thermal barrier isolates population?
Catherine Creek	BuT	Yes	Unk	Summer thermal barrier isolates population?
Chicken Creek				
Indiana Creek	BuT	Yes	Unk	
Limberlm Creek	BuT	Yes	Unk	
Clear Creek	BuT	Yes	Unk	
Imnaha River				
Imnaha River	BuT	Yes	Unk	Below Falls at RM 63
Imnaha River	BuT	Yes	Unk	Above Falls
Big Sheep Creek (2 pops)	BuT	Yes	Unk	Unscreened diversion takes most all water. One above and one below diversion. <i>>300 - 1997 sampling</i>
Little Sheep Creek	BuT	Yes	Unk	
McCully Creek	BuT	Yes	Unk	Above a Diversion. Flow is diverted into Wallowa Valley. <i>> 300 fish 1992 sampling</i>
SF Imnaha River				
Cliff C	BuT	Yes	Unk	Need to verify presence.
McGraw	BuT	Yes	Unk	Population report unverified.
Pine Creek				

7300 spawners 1992 sampling

Deer Creek yes yes

*Interaction w/ BT Bear C
Lostine R
Hurricane C*

2 populations one above and one below barrier both YES - UNK

Pop's above and below diversion >300 - 1997 sampling

> 300 fish 1992 sampling

**PROVISIONAL WILD FISH POPULATIONS
KOKANEE**

LOCATION/POPULATION	POP. CODE	COMPLIANCE	
		%HATCHERY VS WILD	POP. > 300

MID COLUMBIA (Bonneville dam to Snake River)

Deschutes River			
Suttle Lake	Kok	Yes	Yes
Metolius River	Kok	Unk	Yes
Odell/Davis Basin			
Odell Lake	Kok	Yes	Yes

Ocassional stocking of hatchery Kokanee; none recently. Outlet blocked by dam.
Below blockage at Suttle Lake.

Possibly introduced population, but unresolved.

SNAKE RIVER

Grande Ronde River			
Wallowa Lake	Kok	Unk	Yes

Ocassional stocking of hatchery Kokanee.

No change

**PROVISIONAL WILD FISH POPULATIONS
WHITEFISH**

LOCATION/POPULATION	POP. CODE	COMPLIANCE		
		%HATCHERY VS WILD	POP. > 300	
Odel Creek/Davis Lake	WF	Yes	Yes	Based on gillnet samples and 1979 snorkle survey.
Cultus Lake	WF	Yes	Yes	Based on gillnet samples.
Winopee Lake	WF	Yes	Yes	Based on gillnet samples.
Above Crane Prairie	WF	Yes	Yes	Based on electro-fishing data.
John Day River				
Basin, mouth to South Fork	WF	Yes	Unk	Plentiful prior to chemical treatments.
N. Fork John Day River	WF	Yes	Yes	Commonly observed during sampling of other species.
M. Fork John Day River	WF	Yes	Yes	Commonly observed during sampling of other species.
S. Fork John Day River	WF	Yes	Yes	Commonly observed during sampling of other species.
Basin, above South Fork	WF	Yes	Yes	Commonly observed during sampling of other species.
Umatilla River	WF	Yes	Unk	Appears to be less common.
Walla Walla River	WF	Yes	Unk	Appears to be less common.
SNAKE RIVER				
Basin, below Hells Canyon Dam	WF	Yes	Unk	Incidental angler catch.
Grande Ronde River				
Basin, mouth to Wallowa R.	WF	Yes	Yes	Abundant in creel and other surveys.
Wallowa River (below Wallowa Lake)	WF	Yes	Yes	Abundant in creel and other surveys.
Wallowa River (above Wallowa Lake)	WF	Yes	Yes	Abundant in creel and other surveys.
Minam River	WF	Yes	Yes	Abundant in creel and other surveys.
Basin, above Wallowa River	WF	Yes	Yes	Abundant in creel and other surveys.
Imnehz River	WF	Yes	Unk	Incidental angler catch.
Basin, above Brownlee Dam	WF	Yes	Unk	Incidental angler catch.
Pine Creek	WF	Yes	Unk	Incidental angler catch.
Burnt River	WF	Yes	Unk	Incidental angler catch.
Powder River	WF	Yes	Unk	Incidental angler catch.
Malheur River				
Basin, mouth to Namorf	WF	Yes	Unk	Incidental angler catch.
Basin, upstream of Namorf	WF	Yes	Unk	Incidental angler catch.
North Fork	WF	Yes	Yes	Incidental angler catch. Inventoried in 1990.
Middle Fork	WF	Yes	Unk	Incidental angler catch.
Owyhee River (below Owyhee Dam)	WF	Yes	Unk	Incidental angler catch.
Owyhee River (above Owyhee Dam)	WF	Yes	Unk	Incidental angler catch.
GREAT BASIN (SE Oregon streams with no outlet to ocean)				
Malheur Lake Basin				
Donner und Blitzen River	WF	Yes	Unk	Incidental angler catch
Kiger Creek	WF	Yes	Unk	Incidental angler catch

No Change

**PROVISIONAL WILD FISH POPULATIONS
WHITE STURGEON**

LOCATION/POPULATION	POP. CODE	COMPLIANCE		COMMENTS
		HATCHERY VS WILD	POP. >300	
SOUTH COAST (Cape Blanco to California border)				
Rogue River	WSg	Yes	Unk	Decreasing population; may be less than 300 spawners.
LOWER COLUMBIA RIVER (BELOW BONNEVILLE DAM)				
Mainstem and Willamette River below Falls	WSg	Yes	Yes	Large stable population.
MID COLUMBIA (Bonneville Dam to Snake River)				
Bonneville Pool	WSg	Yes	Yes	Sturgeon study.
The Dalles Pool	WSg	Yes	Yes	Sturgeon study.
John Day Pool	WSg	Yes	No	Sturgeon study.
McNary Pool	WSg	Yes	Unk	Source - WDF. Probably spawning population is same size as is in John Day pool.
SNAKE RIVER				
Mainstem below Hells Canyon Dam	WSg	Yes	Yes	Stable population over 300 spawners.
Hells Canyon Pool	WSg	Yes	No	No recruitment since dams build; decreasing population
Oxbow Pool	WSg	Yes	No	Decreasing population, no observed recruitment since dams built; IDFG stocked Oxbow in 1990; should be genetically
Brownlee Pool	WSg	Unk	No	IDFG stocked Brownlee in 1990; should be genetically similar.

No change