

## SUMMARY OF RECOMMENDATIONS

Methods of increasing the production of anadromous fishes in the Oregon tributaries of the Columbia and Snake Rivers above and including the Umatilla River have been recommended under each river system in the preceding sections of this report. The following list summarizes the recommended projects as outlined in the various sections of this report in what is considered to be the order of importance.

1. Provide fish passage at Minam Falls (WaM-1) and the remnant splash dam (WaM-2) on the Minam River.
2. Investigate all unscreened diversion ditches (Wa-1) on the Wallowa River below Joseph (to Dry Creek) to determine fish loss, and screen where necessary.
3. Attempt to establish fall chinook salmon in designated areas of the Wallowa, lower Lostine, and lower Imnaha Rivers.
4. Conduct study program for reestablishing blueback salmon in Wallowa Lake as recommended on page A-45 of APPENDIX A.
5. Acquire Sanderson's Springs area on Spring Creek (tributary to Willow Creek of Upper Grande Ronde River) for fish-cultural purposes.
6. Provide transplanted flows in low flow area (Wa-4) of the Wallowa River below Joseph.
7. Consider development of off-channel impoundments on the Imnaha River and off-channel or in-channel impoundments on Lick Creek (Big Sheep Creek tributary) for supplemental-rearing purposes.
8. Consider development of off-channel impoundments on Wallowa, Lostine, and Minam Rivers for supplemental rearing purposes.
9. Investigate all unscreened diversion ditches (U-14 through U-25) on the Umatilla River which take water before the end of June for fish loss, and screen where necessary. The Maxwell and West Extension diversions are considered to be in definite need of screening.
10. Investigate all unscreened diversion ditches (WW-1, WW-2, WW-Sf-1, and WW-Nf-1) on the main Walla Walla River and its North and South Forks to determine fish loss, and screen where necessary.
11. Provide functional fish passage facilities at the Lostine water supply dam (WaL-2) and Sheep Ridge diversion dam (WaL-3).
12. Consider development of off-channel impoundments and/or a hatchery on the Lookingglass Creek system.
13. Attempt to establish fall chinook and silver salmon in designated areas of the Wenaha River drainage.
14. Attempt to establish fall chinook salmon in designated areas of the Minam and lower Grande Ronde Rivers.

15. Attempt to establish fall chinook and/or silver salmon in designated areas of lower Big Sheep and Joseph Creeks.
16. Assure fish passage at two designated low dams (I-BS-2) on Big Sheep Creek if introduction of fall chinook and/or silver salmon is attempted.
17. Assure fish passage at designated diversion dams on Joseph Creek (IGR-J-1) if introduction of fall chinook and/or silver salmon is attempted.
18. Consider use of sill logs to improve spawning and rearing environment in designated areas on the Walla Walla and Minam Rivers and on Big Sheep, Little Sheep, Horse, Lightning, Big Canyon, and Bear Creeks.
19. If natural increase does not occur, promote an increase in size of Wallowa River silver salmon populations by suggested methods in order that sufficient donor stocks will be provided for other parts of the area.
20. Undertake the experimental transplantation of the last portion of the fall chinook run (or eggs or fry from these fish) from Oxbow Dam to Pine Creek and provide increased flows for fish life, if possible.
21. Consider impervious low flow channel in dry section (WW-4) of Walla Walla River, or diversion of fish through Little Walla Walla River, to provide transportation flows for spring chinook salmon.
22. Attempt to introduce spring chinook salmon into South Fork Walla Walla River by suggested methods if transportation flows are obtained.
23. Provide fish passage facilities at the Hudson Bay (WW-5), Centennial Mill Dam (WW-7), and Little Walla Walla (WW-6) Irrigation Company dams on the Walla Walla River.
24. Provide improved fish passage conditions at the Three-Mile (U-2), Pacific Power and Light Company (W-3), and Cold Springs (U-7) diversion dams on the Umatilla River.
25. Provide increased fall and winter flows on the Umatilla River below Pendleton to create spawning areas for fall chinook salmon as possible compensation for loss of Columbia River spawning grounds in the area of the John Day Dam pool.
26. Consider development of off-channel impoundments on Catherine Creek for supplemental rearing purposes.
27. Investigate all unscreened diversion ditches (P-4, P-C-2, and P-EP-4) on the Pine Creek drainage to determine fish loss, and screen where necessary.
28. Attempt to establish spring chinook in West Eagle Creek and supplement spring chinook production in upper main Eagle Creek following suggested methods. Consider use of impoundment areas and establishment of a drip incubator station.
29. Remove designated log jams (Po-E-1, 3, and 4; and Po-EWE-2-4) on Eagle Creek drainage.

30. Investigate all unscreened diversion ditches (WaL-4, WaB-2, WaH-1, WaBi-1, and WaP-1) on the Lostino River and Bear, Hurricane, Big Canyon, and the lower 2 miles of Prairie Creek to determine fish loss, and screen where necessary.
31. Investigate all unscreened diversion ditches (I-S-1, I-C-1, I-BS-1, and I-BSLS-1) on Summit and Cow Creeks (Imnaha drainage), Big Sheep Creek, and Little Sheep Creek to determine fish loss, and screen where necessary.
32. Attempt to establish fall chinook salmon in designated areas of the upper Grande Ronde River.
33. Consider stream shading in designated areas of the upper Grande Ronde River by use of bank plantings to reduce summer temperatures.
34. Consider development of off-channel impoundments on Big Sheep Creek for supplemental rearing purposes.
35. Remove log and debris jams (I-BSC-1) and (I-BSLS-2) on Big Sheep Creek drainage.
36. Investigate all unscreened diversion ditches (LGR-J-2) on Joseph Creek to determine fish loss, and screen where necessary.
37. Remove designated debris jams and beaver dams in the upper Grande Ronde drainage on Fly Creek (UGR-F-1 and UGR-F-2), Indian Creek (UGR-I-1), Phillips Creek (UGR-P-1), Gordon Creek (UGR-G-1), Cabin Creek (UGR-Cb-1 and UGR-Cb-2), and, under specified conditions, Spring Creek.
38. Consider the establishment of silver salmon in Hurricane, Bear, Big Canyon, and lower Prairie Creeks of the Wallowa River system; Little Sheep, Camp, Horse, and Lightning Creeks of the Imnaha River system; and Spring, Indian, and Clark Creeks of the upper Grande Ronde drainage following suggested methods.
39. Assure fish passage at two designated low dams (WaH-4) on Hurricane Creek if introduction of silver salmon is attempted.
40. Investigate all unscreened diversion ditches (Po-EK-1, Po-EEE-1, and Po-EWE-5), on Eagle Creek to determine fish loss, and screen where necessary.
41. Assure fish passage at Phillips ditch dam (Po-EWE-1) on West Eagle Creek.
42. Investigate unscreened diversion ditches (UGR-Ca-5 and UGR-Ca-6) on Catherine Creek to determine fish loss, and screen where necessary.
43. Screen open ditches (Wa-6) on the Wallowa River between Wallowa Lake and Joseph if introduction of blueback and/or silver salmon is successful.

44. Investigate unscreened diversion ditches (UGR-P-3, UGR-I-3, UGR-G-2, UGR-Cb-4, and UGR-WS-3) on Phillips, Indian, Gordon, Cabin, and Spring Creeks on the upper Grande Ronde River to determine fish loss, and screen where necessary.
45. Loosen streambed materials by mechanical means to remove silt and increase percolation in a designated area of Big Sheep Creek.
46. Consider the development of off-channel impoundment areas on Little Sheep and Camp Creeks if the introduction of silver salmon is attempted.
47. Assure fish passage at designated dams (UGR-2 and UGR-3) on the upper Grande Ronde River drainage.
48. Consider stream shading in designated areas of Catherine Creek by use of streambank plantings.
49. Remove designated debris jams (LGR-JS-1) on Swamp Creek.
50. Remove designated debris jams (LGR-WI-1) on Wildcat Creek in the lower Grande Ronde River drainage, on the Wenaha River drainage (LGR-WNF-1 and LGR-WM-1), and on upper Lookingglass Creek (UGR-L-2 and UGR-L-3).
51. Investigate unscreened diversion ditches (Po-1) on the lower Powder River to determine fish loss, and screen where necessary.
52. Investigate Eagle Falls (Po-E-2) on Eagle Creek to determine if a partial barrier exists.
53. Install deflectors on the lower Wenaha River on an experimental basis to create additional pool area.
54. Consider investigation on upper Bear Creek for headwater storage to obtain water specifically for fish life by alleviating low flow conditions.
55. Consider the establishment of steelhead on upper Prairie Creek following suggested methods.
56. If introduction of steelhead is attempted, investigate unscreened diversion ditches (WaP-2) on upper Prairie Creek to determine fish loss, and screen where necessary.

## ACKNOWLEDGMENTS

Acknowledgment is extended to personnel of the U. S. Geological Survey, Surface Water Branch at La Grande, Oregon, for their assistance in furnishing information concerning streams in the study area. Acknowledgment is also made to personnel of the Oregon Game Commission, especially those of Region 4, for providing information concerning the fish populations and streams of Eastern Oregon.

The authors wish to thank Mrs. Joanne Ames, and Messrs. Roger Slaby and Delbert Hanks for inking the numerous graphs and maps and Mrs. Pauline Prickett for typing approximately 1,200 pages of text and tables for the rough drafts and final copy of this report. The planning and early phases of the program were under the direction and supervision of Dr. George Y. Harry, Jr. and Mr. Robert W. Schoning, then Director and Assistant Director of Research, and Mr. Ernest R. Jeffries, then project leader for the Columbia River Fishery Development Program. Mr. Raymond A. Willis became project leader in October 1958 and reviewed the rough drafts, resolved editorial comments, and supervised the compilation of the final manuscript. Appreciation is extended to Messrs. Sigurd J. Westrheim and Jack M. Van Hying, Director and Assistant Director of Research, respectively, for reviewing and editing the final report.

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