

SALMON RIVER HABITAT ENHANCEMENT

Annual Report FY 1984

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## PREFACE

This project, No. 83-359, was funded by the Bonneville Power Administration (BPA) under Contract No. DE-AI79-84BP14383.

This report has four volumes: a Tribal project annual report (Part 1) and three reports (Parts 2, 3, and 4) prepared for the Tribes by their engineering subcontractor, J.M. Montgomery, Consultant Engineers, Incorporated of Boise, Idaho. The Tribal project annual report contains reports for four subprojects within Project 83-359. Subproject I involved habitat and fish inventories (pretreatment during 1984 and 1985) in Bear Valley Creek, Valley County, Idaho that will be used to evaluate responses to ongoing habitat enhancement. Subproject II is the coordination/planning activities of the Project Leader in relation to other BPA-funded habitat enhancement projects that have or will occur within the traditional Treaty (Fort Bridger Treaty of 1868) fishing areas of the Shoshone-Bannock Tribes, Fort Hall Reservation, Idaho. Subproject III involved habitat and fish inventories (pretreatment) and habitat problem identification on the Yankee Fork of the Salmon River (including Jordan Creek). Subproject IV during 1985 involved habitat problem identification in the East Fork of the Salmon River and habitat and fish inventories (pretreatment) in Herd Creek, a tributary to the East Fork. J. M. Montgomery was charged with producing Part 2, a report entitled, "Biological Evaluation of the Northern Rocky Mountain Gray Wolf, Bear Valley Creek Fish Habitat Enhancement Project." Part 2 was necessary before any actual construction took place on Bear Valley Creek. Montgomery, as required by Tribal Contract, also submitted Part 3, a report entitled, "Construction Report, Bear Valley Creek Fish Habitat Enhancement Project." Montgomery was also contracted to complete a feasibility study (Part 4) on what could be done to enhance anadromous salmonid habitat on Herd Creek, a tributary to the East Fork of the Salmon River. Part 4 of the Annual Report is Montgomery's findings and recommendations and is entitled, "Feasibility Report, Herd Creek, Idaho: Fish Habitat Enhancement Project."

The format of this years Report has changed somewhat from the 1984 Report. Part I of the 1984 Report contained synopses of the following three Parts. All Parts of the 1985 Report are intended to stand alone and apart from the other volumes.

Copies of the Annual Report may be obtained from:

U.S. Department of Energy  
Bonneville Power Administration  
Division of Fish and Wildlife - PJ  
P.O. Box 3621  
Portland, OR 97208

SUBPROJECT I

Bear Valley Creek:  
Inventory, 1984 and 1985

## ABSTRACT

Fine sediments from a privately-owned (Bear Valley Minerals, Inc., Denver) inactive dredge mine (4.5 km) near the headwaters of Bear Valley Creek have covered spawning gravels and filled in rearing areas of chinook salmon (Oncorhynchus tshawytscha) and steelhead trout (Salmo gairdneri) in the stream from the mid-1950's to the present.

Pre-treatment (control erosion and sedimentation from mine) effects were evaluated by monitoring aquatic habitat and fish communities during 1984 and 1985. Physical (1 time/year) and biological (2 times/year) variables were measured in seven sites within each of seven strata along the length (55 km) of Bear Valley Creek. Fish data were collected via snorkel-observations, electrofishing and seining.

Minimum and maximum temperatures were similar within a stratum between 1984 and 1985. Downstream strata had more degree-days during than upstream strata during 1985. Lower flows during 1985 caused significant differences in pool width within at least one stratum between 1984 and 1985. Riffle area, pool area, riparian cover, gradient, substrate fines, riffle fines, and pool embeddedness differed significantly among strata but not between 1984 and 1985. Maximum pool depth differed significantly among strata and was significantly deeper in 1985 than in 1984. Low flows (less erosion) allowed the stream to flush some fines out of some strata between 1984 and 1985.

Substrate aggradation was significantly higher in downstream strata while substrate degradation was significantly higher upstream (mine).

Age 0+ chinook salmon were the most abundant salmonid in 1984 while mountain whitefish (Prosopium Williamson) was the most abundant in 1985. Bear Valley Creek contained 18,100+4,093 age 0+ chinook salmon in August 1984 and 4,815+1,583 in August 1985. Redd counts in the stream were 55 in 1983 and 17 in 1984. Length, weight, and condition of age 0+ chinook salmon differed significantly in at least one stratum between 1984 and 1985. Densities of age 0+ chinook salmon, age 0+ and age 2+ steelhead/rainbow trout, age 1+ and older bull trout (S. confluentus), and age 0+ and juvenile mountain whitefish differed significantly within at least one stratum between 1984 and 1985. Densities of age 1+ chinook salmon, age 1+ and age 2+ brook trout (S. fontinalis), age 0+ bull trout, and adult mountain whitefish differed significantly among strata but not between 1984 and 1985. Densities of age 1+ steelhead/rainbow trout, and age 2+ and older cutthroat trout (S. clarki) differed significantly among strata and between 1984 and 1985.

SUBPROJECT II

Middle Fork/Upper Salmon River:  
Planning and Coordination

## ACTIVITIES

Dr. Richard C. Konopacky, Project Leader (PL) of BPA Project No. 83-359 and a representative of the Shoshone-Bannock Indian Tribes, consulted with personnel from Bonneville Power Administration (BPA), Idaho Department of Fish and Game, the Boise National Forest (BNF), the Sawtooth National Recreation Area (SNRA), other land management agencies, BPA-contracted consulting firms, and private land owners on aquatic habitat enhancement projects (ongoing and proposed) on the Salmon River and the Middle Fork of the Salmon River above their confluence. Four BPA habitat projects consumed most of the PL's time within this subproject. The four projects are: 1) BPA Project No. 83-415, Alturas Lake Creek and Upper Salmon River Flow Augmentation; 2) BPA Project No. 84-24, Marsh, Elk, Valley, Upper Salmon River, Idaho; 3) BPA Project No. 84-28; Lemhi River Rehabilitation; and 4) BPA Project No. 84-29, Panther Creek. The Fort Bridger Treaty of 1868 entitles tribal members to fish in those drainages mentioned above and was used as the criteria for Tribal involvement in project coordination efforts and the cooperative management of anadromous fish resources within Treaty areas.

The PL attended two meetings concerning the Alturas Lake Creek/Salmon River Flow Augmentation Project during 1985. The PL met in Ketchum, Idaho with personnel from BPA, IDFG, SNRA, and Dr. Enright, the owner of the Busterback Ranch (problem area), and discussed possible alternatives to the dewatering (flood irrigation) problem on his ranch. Dr. Enright made a decision during the summer to convert from the present flood irrigation to a center pivot alternative that had been proposed to him and that could be funded by BPA. SNRA officials then reviewed the request by Dr. Enright and found that a center pivot system would impair the visual esthetics of the SNRA even though they had submitted the alternative as a viable solution to the landowner in the initial meeting. The PL met with representatives of BPA, IDFG, and the SNRA on 7 November and discussed the future direction of the project. Dr. Enright has turned the matter over to his lawyers while the SNRA has transferred the decision process to the Regional level. Future meeting are planned.

The PL attended seven meetings concerning the Marsh, Elk, Valley, Upper Salmon River, Idaho Project during 1985. On 24 January, the PL met with Harvey Forsgren (SNRA) and Terry Holubetz (IDFG) and discussed Forsgren's past methodologies for collecting terrestrial plant community data and their application in the upcoming project. Estimates of the number of samples necessary in the upcoming project were calculated from the existing data base. An RFP for the contract was put out by th BNF in th spring. On 8-9 May the PL met with representatives of BPA, IDFG, SNRA,

Challis National Forest, and the BNF, reviewed proposals submitted for the contract, and chose OEA, Inc. (high technical marks, low bid) of Helena, Montana to do the work. On 4 June the PL met with other agency representatives and Chris Hunter of OEA and discussed project approach, coordination, and planning. The PL met with BNF personnel on 12 August and discussed progress on the project. The PL again met with agency personnel and the OEA representative and discussed a possible work statement change in the project which would reflect a request to compare project findings to existing or past land management activities. The PL met with agency personnel and reviewed OEA's draft final report for the project. The report was found to be lacking in data analyses and conclusions, OEA was given direction and other steering committee meetings were planned. On 16 December, the PL and the agency personnel met and developed a list of analyses still needed to be done on the project data base. A memo listing the analyses and other corrections necessary to the draft was forwarded to OEA by the BNF. Future meetings are planned.

The PL attended three meetings concerning the Lemhi River Rehabilitation Project during 1985- On 6 May, the PL met with personnel from BPA, IDFG, and Ott Water Engineers (contractor) and discussed progress on the project to that date. Most work was to be completed during the 1985 field season. On 11 September, the PL met with the same representatives and discussed the data that had been collected during the summer, the analyses to be run, and future meetings necessary to fulfill contract commitments. On 19-20 November, the PL along with the agency and contractor reps met with approximately 20 local ranchers and citizens of the Salmon, Idaho area and discussed the project's findings, recommendations of local solutions in the dewatered areas, and other possible directions the project could take. Discussions followed a slide presentation by the contractor. Future meetings are planned.

The PL attended three meetings concerning the Panther Creek Project during 1985, On 29-30 July, the PL met with personnel from BPA, IDFG, Idaho Attorney General's Office, Noranda Mining, Inspiration Mining, and Bechtel, Inc. (contractor) and discussed the preliminary findings (solutions and costs) of the contractor. All parties agreed that a future mining plan and a possible refinement of Bechtel's preliminary findings should be reviewed before any decisions on direction could be made. An update of the findings and a mining plan was reviewed and discussed on 30 September. On 5 December and after Inspiration Mining pulled out of the project, the PL met with the other agency reps and discussed direction of the project from biological and legal standpoints. Future meetings are planned.



SUBPROJECT III

Yankee Fork of the Salmon River:  
Inventory and Problem Identification

## ABSTRACT

Extensive dredge mining has altered much of the aquatic habitat in the Yankee Fork of the Salmon River drainage. Aquatic habitat and fish communities were inventoried in the Yankee Fork of the Salmon River (the latter two streams are tributaries to the Yankee Fork) during August in 1984 and 1985 for use as pre-treatment data to evaluate anticipated habitat enhancement. Physical and biological variables were measured (one time) in four sites within each of six strata (49 km) during 1984 and in six sites within each of seven strata (61 km) during 1985 over most of the Yankee Fork. Fish data were collected via snorkel-observations, electrofishing, and seining. Minimum and maximum water temperatures were similar during like periods of 1984 and 1985. Lower flows in 1985 than in 1984 caused a significant change in riffle area, pool area, and pool width in at least one stratum between years. Natural and human-caused changes in sedimentation rates caused changes in substrate size distributions and the amount of fines on riffles and in pools. Stream gradient, maximum pool depth, and larger substrate particles did not significantly change within strata between years. Aggradation/degradation of substrates from the riparian zone, stream zone, and stream channels, ranged from -1.25 to 0.89 m<sup>2</sup>/yr, -1.00 to 1.10 m<sup>2</sup>/yr, and -0.74 to 1.09 m<sup>2</sup>/yr, respectively, among strata but did not differ significantly. In decreasing order of abundance, during 1984 and 1985, salmonid species in the Yankee Fork drainage included: steelhead/rainbow trout (Salmo gairdneri), chinook salmon (Oncorhynchus tshawytscha), mountain whitefish (Prosopium williamsoni), cutthroat trout (S. clarki), bull trout (Salvelinus confluentus), and bull trout (Salvelinus confluentus), and brook trout (S. fontinalis). The Yankee Fork contained 12,847±6,131 age 0+ chinook salmon in August 1984 and 13,495±6,014 in August 1985. Age 0+ chinook salmon were generally longer and heavier in 1984 than in 1985. Bull and brook trout densities significantly increased in at least one stratum between 1984 and 1985. Densities of other salmonids differed among strata but not between 1984 and 1985 nor within a stratum between 1984 and 1985. Salmonid habitat and passage problem areas were identified and prioritized for remediation in stratum 5. Major sedimentation problem types, in (part of Reach C) descending order of potential sediment input, included: sloughing stream banks, roading adjacent to the stream, washouts, and open slopes. Passage problems included stranded pools and log jams.

SUBPROJECT IV

East Fork Salmon River: Problem Identification, 1985

and

Herd Creek: Habitat and Fish Inventory, 1985

## ABSTRACT

Ranching and agricultural practices have altered a substantial portion of the aquatic habitat in the East Fork of the Salmon River drainage. Aquatic habitat and fish community of Herd Creek, a tributary to the East Fork, were inventoried for use as pre-treatment data to evaluate response to anticipated habitat enhancement. Physical and biological variables were measured in six sites within four strata along most of Herd Creek (15 km) during July and August 1985. Fish data were collected via snorkel-observations, electrofishing, and seining. Minimum and maximum water temperatures ranged from 1 to 7C and 16 to 19C, respectively, between 26 June and 19 September. Riffle area, pool area, flow, stream width, pool depth, gradient, and riparian cover did not differ significantly among strata. A significantly higher frequency of fine ( $<8$  mm diameter) sediments occurred in downstream strata 1 and 2. In decreasing order of abundance, salmonid species in Herd Creek included: chinook salmon (*Oncorhynchus tshawtscha*), mountain whitefish (*Prosopium williamsoni*), steelhead/rainbow trout (*Salmo gairdneri*) bull trout (*Salvelinus confluentus*), and brook trout (*S. fontinalis*). Estimated abundance of age 0+ chinook salmon was 16,201 fish in July and 19,884 fish in August. Density was highest (0.69 fish/m<sup>2</sup> pool) in stratum 3 and lowest (0.03 fish/m<sup>2</sup> pool) in stratum 1. Length, weight, and condition of age 0+ chinook salmon were higher in downstream than in upstream strata and in August than in July. Densities of age 0+ and adult mountain whitefish ranged from 0.04 to 0.23 and 0.02 to 0.06 fish/m<sup>2</sup> pool, respectively. Age 0+ steelhead/rainbow trout densities ranged from 0 fish/m<sup>2</sup> pool in the stratum 4 in July to 0.03 fish/m<sup>2</sup> pool in strata 1 and 2 in August. Density of age 1+ and older bull trout (range: 0.002 to 0.011 fish/m<sup>2</sup> pool) was highest in strata 1 and 3. Brook trout were found only in stratum 2 in July (0.005 fish/m<sup>2</sup> pool). Salmonid habitat and passage problem areas were identified and prioritized for remediation throughout the entire East Fork system. Major sedimentation problem types, in descending order of potential sediment input, include: sloughing stream banks, roading adjacent to the stream, cattle crossings, washouts, and open slopes. Passage problems included irrigation diversions and log jams.

## CHAPTER 1

### SUMMARY

The Construction Report provides a description of the 1985 construction activities related to implementation of the preferred alternative for stabilizing and enhancing salmonid habitat in Bear Valley Creek, Idaho. Chapter 2 presents an introduction to the report and includes background information and authorization for the project. Construction activities performed during 1985 on the private land along upper Bear Valley Creek are summarized in Chapter 3. The construction summary presented in Chapter 3 includes quantities and costs of the 1985 work. Chapter 4 is comprised of record drawings for the construction work completed in 1985. The project specifications are presented in Chapter 5 and include recommended post-construction modifications based on 1985 experience. Chapter 6 provides a summary of the 1985 monitoring studies including water quality, hydrology, vegetation, soils, and surveying. Projections for completion of the project as presently defined are included in Chapter 7.



# CHAPTER

# 2

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

## CHAPTER 2

### INTRODUCTION

#### BACKGROUND

The past thirty years have shown a significant decline in the return of chinook salmon and steelhead to their natural spawning areas in Idaho. There are several significant reasons for the loss of this important resource, including the dams on the lower Columbia and Snake and Clearwater Rivers, increased fishing pressures by commercial, sport and subsistence fishermen, reduced flows during critical migration periods, water quality problems, and the continuing destruction of spawning and rearing habitat by natural and human accelerated modification of stream channels and bed substratum. Numerous studies and reports have attempted to quantitatively and qualitatively assess the impacts of the various reported reasons for the observed decline in wild and natural anadromous fish spawning.

Bear Valley Creek, located within the Salmon River drainage of Idaho, has historically been considered one of the most productive spring chinook salmon spawning and rearing streams in the entire Columbia River system. In recent years, portions of Bear Valley Creek have been impacted by soil erosion and sedimentation. The continual problem of sediment production has affected extended areas of downstream spawning and rearing habitat. The primary problem area is the privately held, previously mined lands in the Big Meadows area of the Bear Valley Creek drainage in central Idaho (Figure 2-1). During the period from 1954 to 1959 the patented land in Big Meadows was dredge mined for the strategic minerals columbite and euxenite. The past mining operation incorporated reclamation methods appropriate to the technology of the times, however, the site has increasingly contributed fine, decomposed granitic material from approximately two miles of stream bank. During the past 25 years, the stream has eroded the dredge tailing and undisturbed placer material vertically and horizontally, resulting in the generation of an estimated 500,000 cubic yards of material which has been transported downstream. This material has subsequently been redeposited in the downstream headwaters of the Middle Fork of the Salmon River, which includes a significant portion of the historical anadromous fish habitat within the Salmon River drainage. Spring chinook salmon redd counts in Bear Valley Creek prior to the 1950's ranged from an estimated 600 to 1200 during each year. The 1984 and 1985 spring chinook salmon redd counts were estimated at 60 and 85, respectively, for Bear Valley Creek. The overall decrease of spring chinook salmon redds in Bear Valley Creek over time has led to identification of the need for preserving the diversity of the gene pool of these wild fish.

The Bear Valley Creek Fish Habitat Enhancement project has been undertaken in conjunction with other concurrent studies that fall under the Salmon River Habitat Enhancement Program funded by the Bonneville Power Administration (BPA). Division of Fish and Wildlife. This program provides offsite enhancement as partial compensation for fish habitat damage and migration problems related to hydroelectric power projects in the Columbia River Basin. The other concurrent studies will evaluate the feasibility of making improvements on the public lands in Bear Valley Creek in order to protect downstream habitat and provide mitigation measures for the problem areas. The project is listed in program measure 704.(d)(1), Table 2 of the Northwest Power Planning Council's 1984 Columbia River Basin Fish and Wildlife Program.

713.0050

April 30, 1986

Shoshone-Bannock Tribes  
P.O. Box 306  
Fort Hall, ID 83203

Attention: Mr. Phillip Cernera, Fisheries Biologist

Subject: Bonneville Power Administration Project No. 83-359  
Herd Creek Fish Habitat Enhancement Project

Gentlemen:

We are pleased to submit 15 copies of the Feasibility Report for the Herd Creek Fish Habitat Enhancement Project. This report is the output for our October 31, 1985 contract. At your instruction, copies of this report have been sent directly to Mr. James R. Bennetts and Bonneville Power Administration.

James M. Montgomery, Consulting Engineers, Inc. (JMM) wishes to express its appreciation for the technical input and information provided by Dr. Richard Konopacky and Mr. Cernera in completing this project. The JMM project team also wishes to express their gratitude for the patient assistance of Mr. James Bennetts, owner of the private lands comprising the study area, the Bonneville Power Administration, the USDI - Bureau of Land Management, the USDA - Forest Service, and the Idaho Department of Fish and Game.

This report presents a description of the Herd Creek study area, development and analysis of preliminary alternatives for stabilizing the stream banks and protecting fish habitat, and provides recommended alternatives for the six stream problem reaches. The study area description includes a detailed analysis of surface water hydrology. The recommended alternatives were developed and analyzed based on the Shoshone-Bannock Tribes objectives for the Herd Creek project, compatibility with existing grazing activities, and general engineering criteria applicable to the study area. Institutional alternatives also were listed in the feasibility report for consideration by the involved entities.

We would like to point out that the information contained in this report may be subject to modification based on further investigation and verification of field conditions. All written comments on this report should be directed to the Shoshone-Bannock Tribes, Fisheries Department.



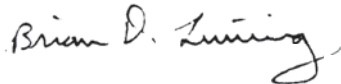
Shoshone-Bannock Tribes

-2-

April 30, 1986

Again, we appreciate all of the assistance and cooperation provided to JMM in conducting this study. We would look forward to working with the Shoshone-Bannock Tribes, Bonneville Power Administration, Mr. James Bennetts, and federal and state resource management agencies should this project be implemented in Herd Creek. Please call me at (208) 345-5865 if you have any questions regarding this report.

Very truly yours,



Brian D. Liming  
Project Engineer/Scientist

Enc.

BPA PROJECT NO. 83-359  
FY 1985 ANNUAL REPORT  
PART 4 OF 4

FEASIBILITY REPORT  
HERD CREEK, IDAHO  
FISH HABITAT ENHANCEMENT PROJECT

Prepared by:

JAMES M. MONTGOMERY  
CONSULTING ENGINEERS, INC.

Prepared for:

SHOSHONE-BANNOCK TRIBES  
FISHERIES DEPARTMENT

Submitted to:

BONNEVILLE POWER ADMINISTRATION  
DIVISION OF FISH AND WILDLIFE

APRIL 1986

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# CHAPTER

# 1

JAMES M. MONTGOMERY, CONSULTING ENGINEERS, INC.

## CHAPTER 1

### SUMMARY

The Feasibility Report for the Herd Creek Fish Habitat Enhancement Project provides a characterization of the study area, and also includes development and analysis of preliminary alternatives for stabilizing stream banks and protecting chinook salmon spawning and rearing habitat. Chapter 2 presents an introduction to the report and includes a statement of the problem, purpose and background, report utilization discussion, and authorization for the study. The study area is characterized in terms of physical and biological components in Chapter 3 and includes an evaluation of the existing data base, a detailed discussion of surface water hydrology, and the identification and analysis of specific problem reaches in Herd Creek. Surface water hydrology is a primary environmental feature and influence on the study area. Preliminary alternatives for the problem reaches are developed and analyzed in Chapter 4 based on the objectives of the Shoshone-Bannock Tribes, compatibility with existing livestock grazing operations, and general engineering criteria. Chapter 5 presents the recommended alternatives for the Herd Creek study area. The overall recommended alternative emphasizes non-structural stream bank stabilization measures consisting of riparian **revegetation**, construction of intermittent fencing to limit livestock access to Herd Creek, construction of stabilized livestock crossings of the stream, and no action for the remaining areas. Implementation of the recommended alternative components to any of the problem reaches will require additional engineering analysis and design.

# CHAPTER

# 2

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.



## CHAPTER 2

### INTRODUCTION

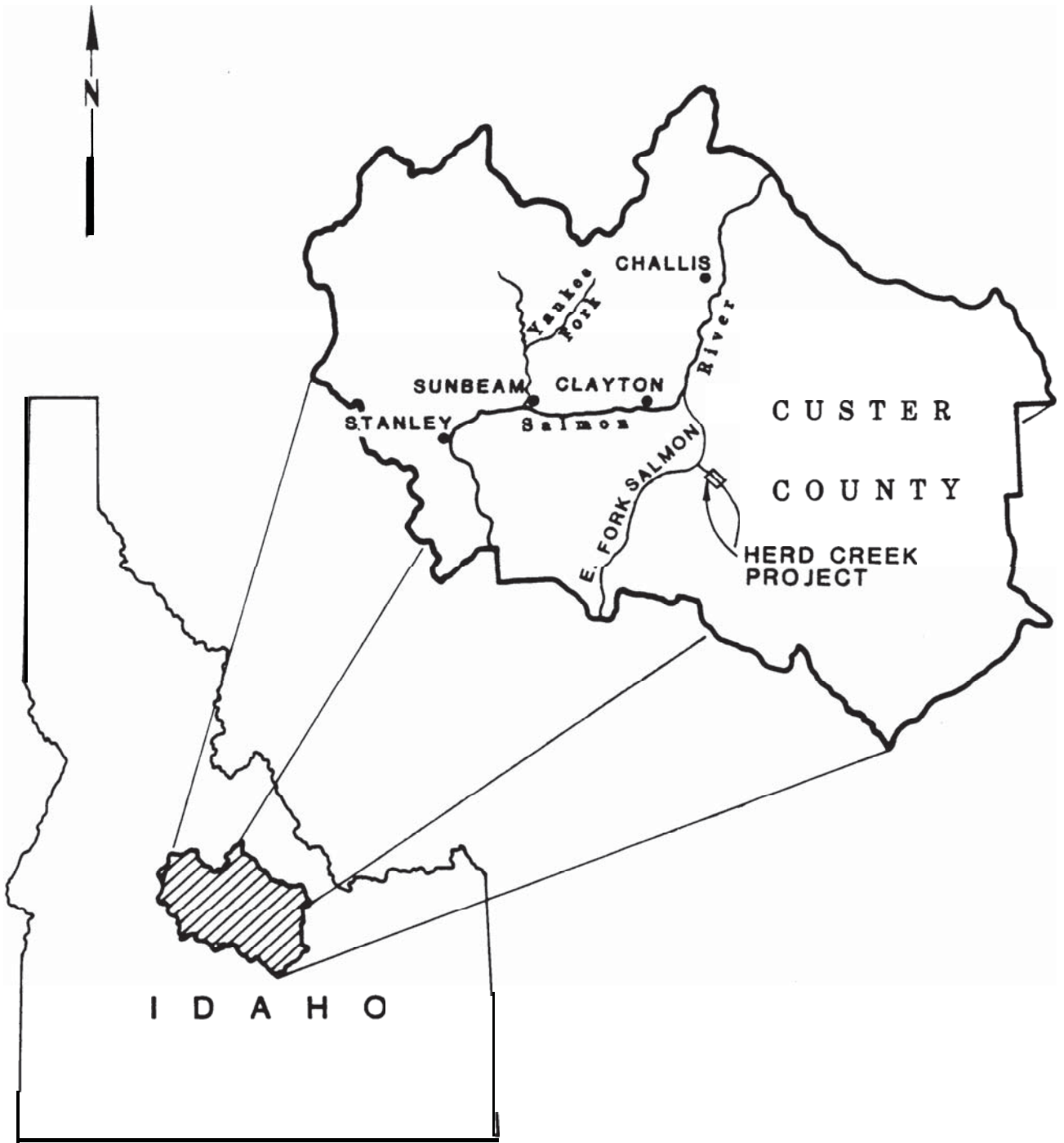
#### STATEMENT OF PROBLEM

The past thirty years have shown a significant decline in the return of chinook salmon and steelhead trout to their natural spawning areas in Idaho. There are several significant reasons for the loss of this important resource, including the dams on the lower Columbia and Snake and Clearwater Rivers, increased fishing pressures by commercial sport and subsistence fishermen, reduced flows during critical migration periods, water quality problems, and the continuing destruction of spawning and rearing habitat by natural and human accelerated modification of watersheds, stream channels and bed substrate. Numerous studies and reports have attempted to quantitatively and qualitatively assess the impacts of the various reported reasons for the observed decline in natural anadromous fish spawning. This document is limited to one very specific aspect of the overall problem. The problem addressed by this report is the protection of spawning and rearing habitat, and stabilization of sediment production areas, believed to be affecting downstream spawning and rearing habitat. This problem area is the privately held, presently grazed lands in the Herd Creek, Idaho drainage (Figure 2-1). The project study area includes portions of Sections 7 and 18, Township 9 North, Range 19 East, Boise Meridian. Herd Creek is the largest tributary to the East Fork of the Salmon River. It is considered the most important tributary stream for spawning and rearing of chinook salmon in the East Fork drainage. The private land includes approximately 2.5 stream miles of Herd Creek. These private ranch lands are grazed by livestock throughout the season. Livestock access to the stream is believed to be one activity affecting spawning and rearing habitat within the private land boundaries and also contributing sediment to the downstream publicly owned and managed reaches of Herd Creek.

The problem this report addresses is the identification of erosion and sedimentation areas contained within the private land in the Herd Creek drainage. This report provides an analysis and evaluation of alternatives for eliminating or ameliorating the problems delineated.

#### PURPOSE AND BACKGROUND

The purpose of this report is to provide the Shoshone-Bannock Tribes with a feasibility level study that will permit the evaluation of alternative protection, enhancement, and mitigation measures that could be implemented in order to protect existing spawning and rearing habitat areas presently undergoing degradation. The Herd Creek, Idaho Fish Habitat Enhancement Project has been undertaken in conjunction with other concurrent studies, and those yet to be performed, that fall under the Salmon River Habitat Enhancement Program funded by the Bonneville Power Administration (BPA). This program provides offsite enhancement as partial compensation for fish habitat damage and migration problems related to hydroelectric power projects in the Columbia River Basin. The project is listed in program measure 704(d)(1), Table 2 of the Northwest Power Planning Council's 1984 Columbia River Basin Fish and Wildlife Program.



HERD CREEK  
FISH HABITAT ENHANCEMENT PROJECT  
LOCATION MAP  
FIGURE 2-1

The Tribes are sponsoring this project because the East Fork system is an important anadromous fishing area, as provided in the Treaty with the Eastern Band Shoshoni and Bannock, 1868 and its amendments. The Tribes have invested significant manpower and resources into various studies and management programs for the protection and enhancement of anadromous fish in the Salmon River drainage. The Herd Creek Fish Habitat Enhancement Project is one of several habitat protection efforts undertaken by the Tribes in the Salmon River drainage.

Portions of the Herd Creek drainage have been used for livestock grazing and agricultural purposes during most of the past 100 years. Wild ungulates (deer, elk) are found within the drainage during specific seasons throughout the year. The Bureau of Land Management (BLM) and USDA-Forest Service (USFS) jointly manage the Herd Creek Grazing Allotment which covers 45,409 acres of federal lands upstream and downstream of the private land. In 1979, approximately 1.25 miles of Herd Creek on BLM lands were fenced to exclude all livestock from the upstream end of the private land to the boundary of the USFS lands (Challis National Forest). The BLM and USFS have been attempting to limit livestock access to Herd Creek on the federal lands in order to protect stream banks and anadromous fish habitat. Similar protection measures have been suggested for the private land on Herd Creek, however, livestock access continues to contribute to bank instability and habitat disruption, affecting the stream throughout the private land and also in downstream reaches. The overall purpose of this project is to develop alternatives that could reduce the erosion and sedimentation, enhance the fish habitat, and allow for continued livestock grazing on the private lands in the Herd Creek drainage.

#### REPORT UTILIZATION

This report considers the preliminary feasibility of controlling and reducing erosion and sedimentation arising from the private land in the Herd Creek drainage with an overall objective to enhance fish habitat. Although care has been taken to assure the reliability of the information set forth in this report, the scope of work has limited detailed study of the private land. Data and factual information obtained from third parties have not been independently verified. Therefore, for these and other reasons, the possibility of error or misinterpretation of information supplied by third parties cannot be entirely ruled out, although care has been taken to assure the greatest reliability possible under the circumstances. Nevertheless, all findings, conclusions, data, and information expressed in this report should be regarded as preliminary and subject to further refinement and development, if the design of recommended modifications is actually undertaken.

#### AUTHORIZATION

The Herd Creek, Idaho, Fish Habitat Enhancement Feasibility Study is being performed by James M. Montgomery, Consulting Engineers, Inc. (JMM) for the Shoshone-Bannock Tribes (Tribes), under Bonneville Power Administration (BPA) contract number 83-359. The project is funded by BPA's Division of Fish and Wildlife as part of the overall effort to protect, mitigate, and enhance fish habitat and resources impacted by hydroelectric development and operation in the Columbia River Basin. Mr. James R. Bennetts has granted an easement to the Tribes for conducting the feasibility study on the private land in the Herd Creek drainage.