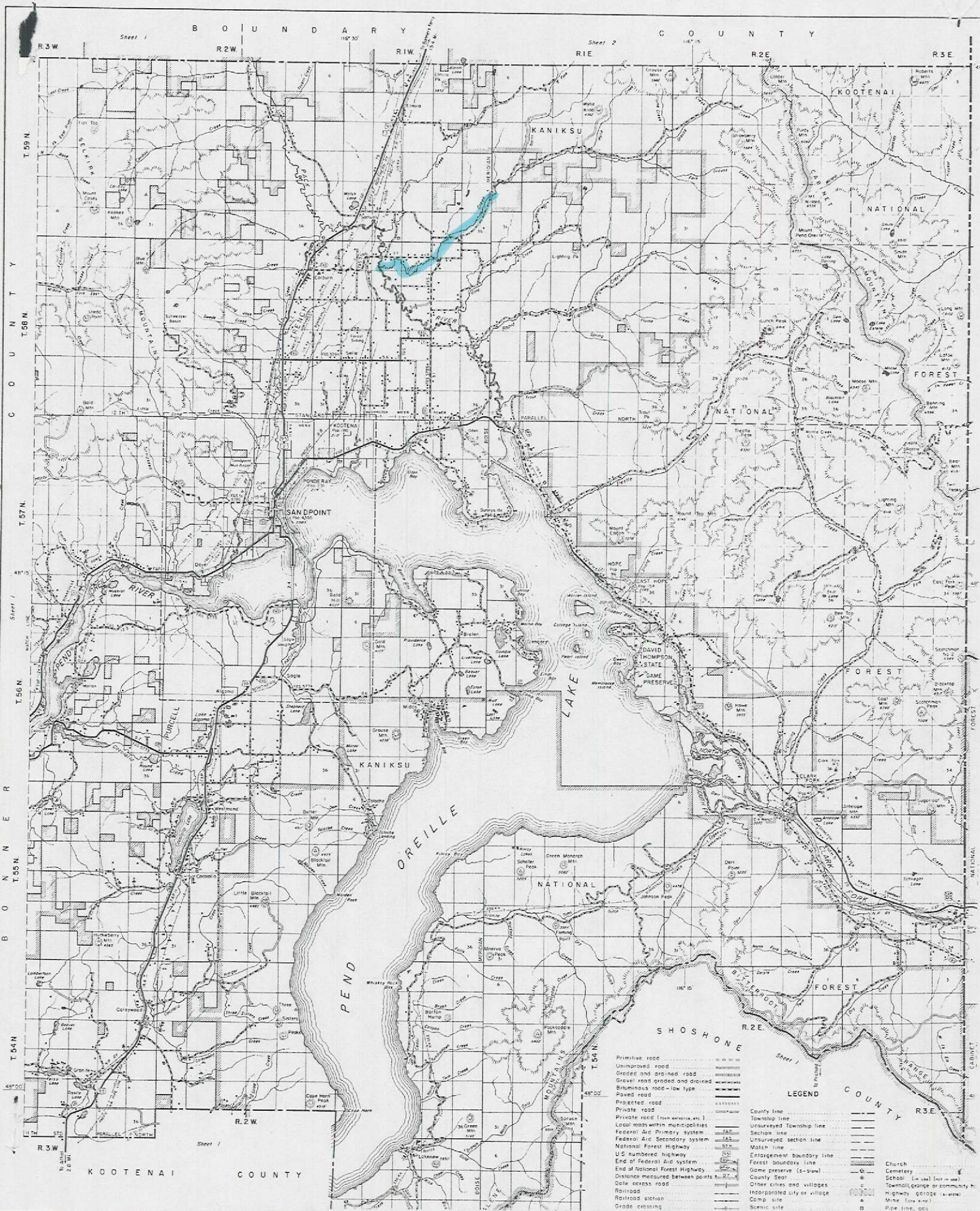
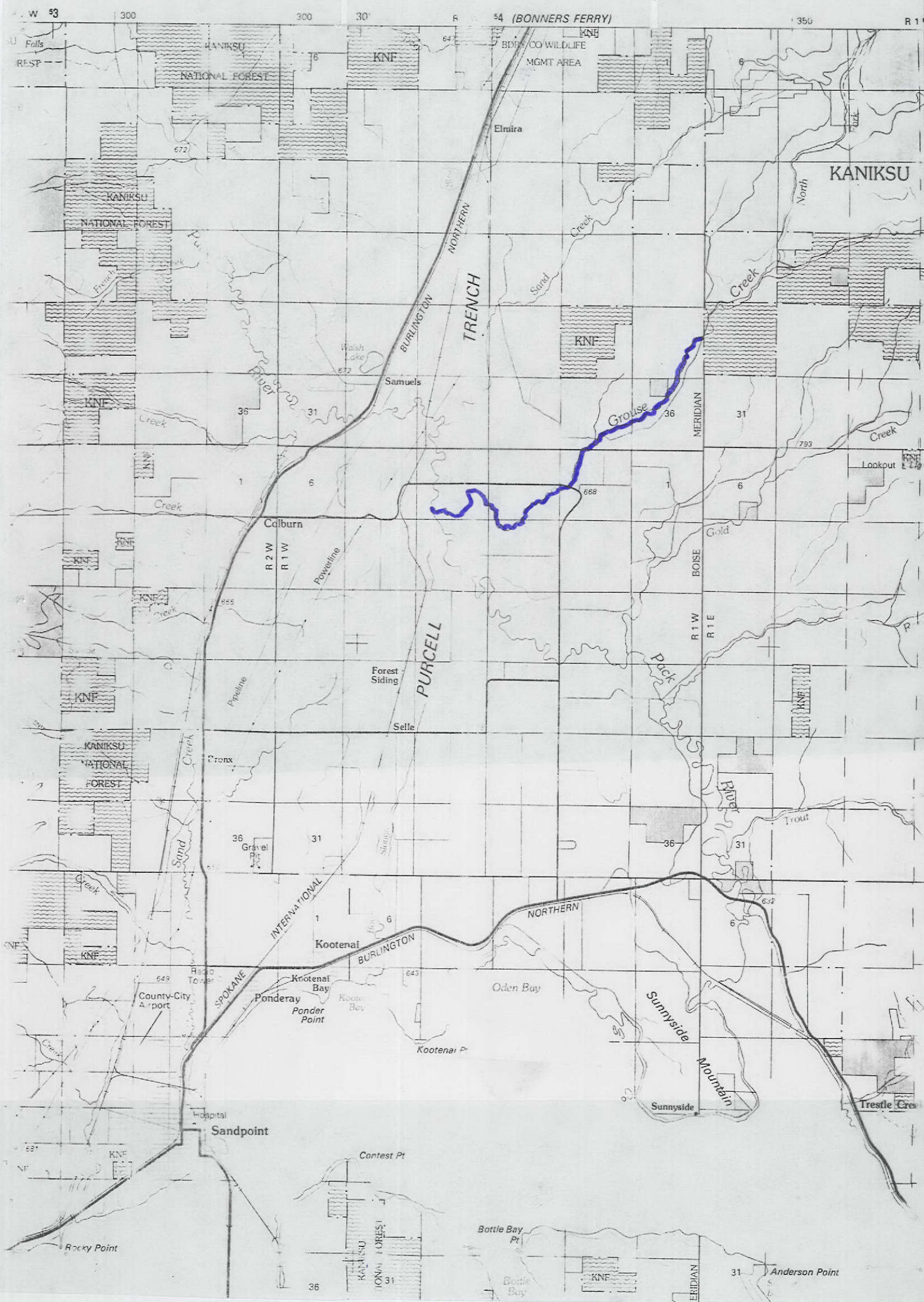
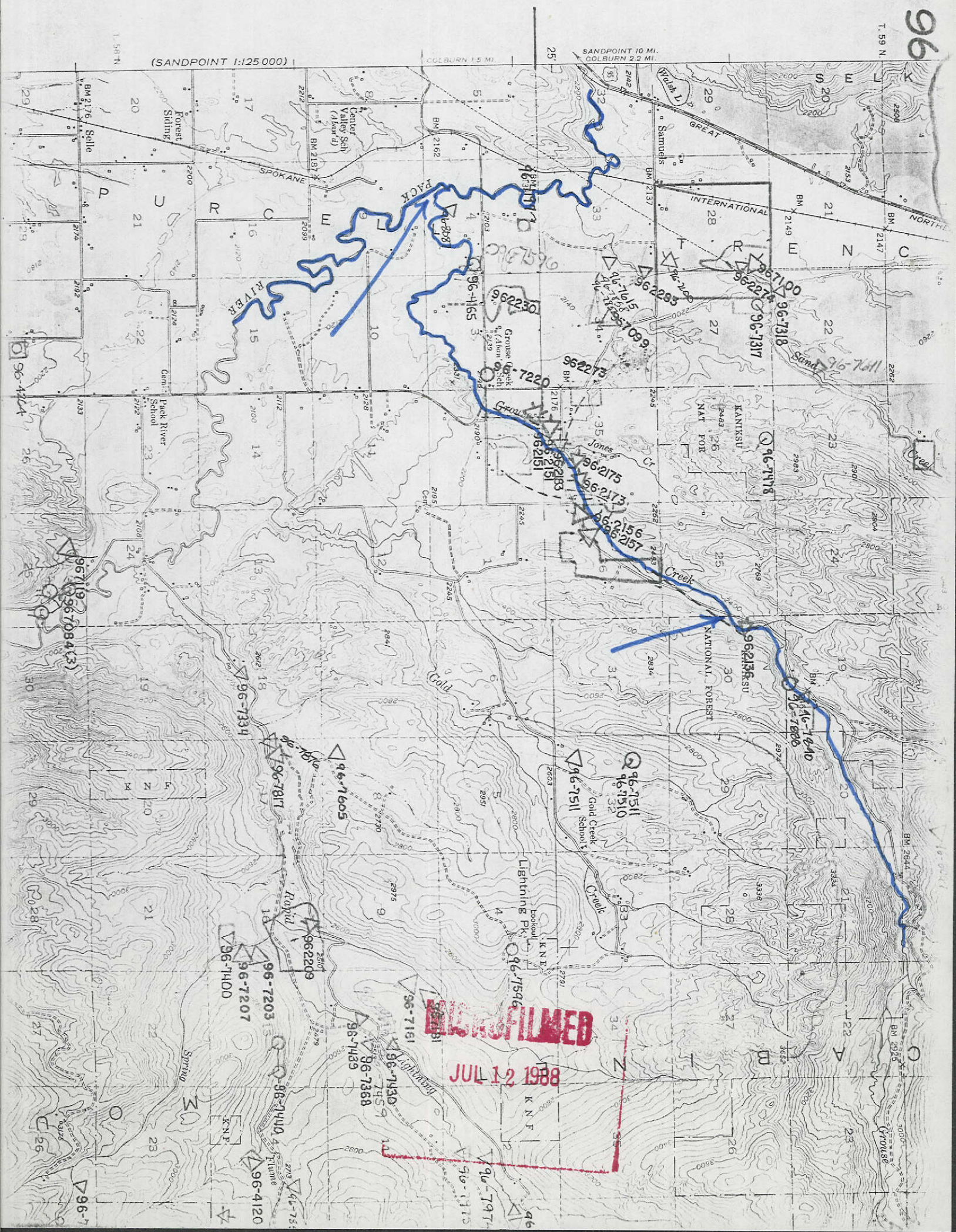
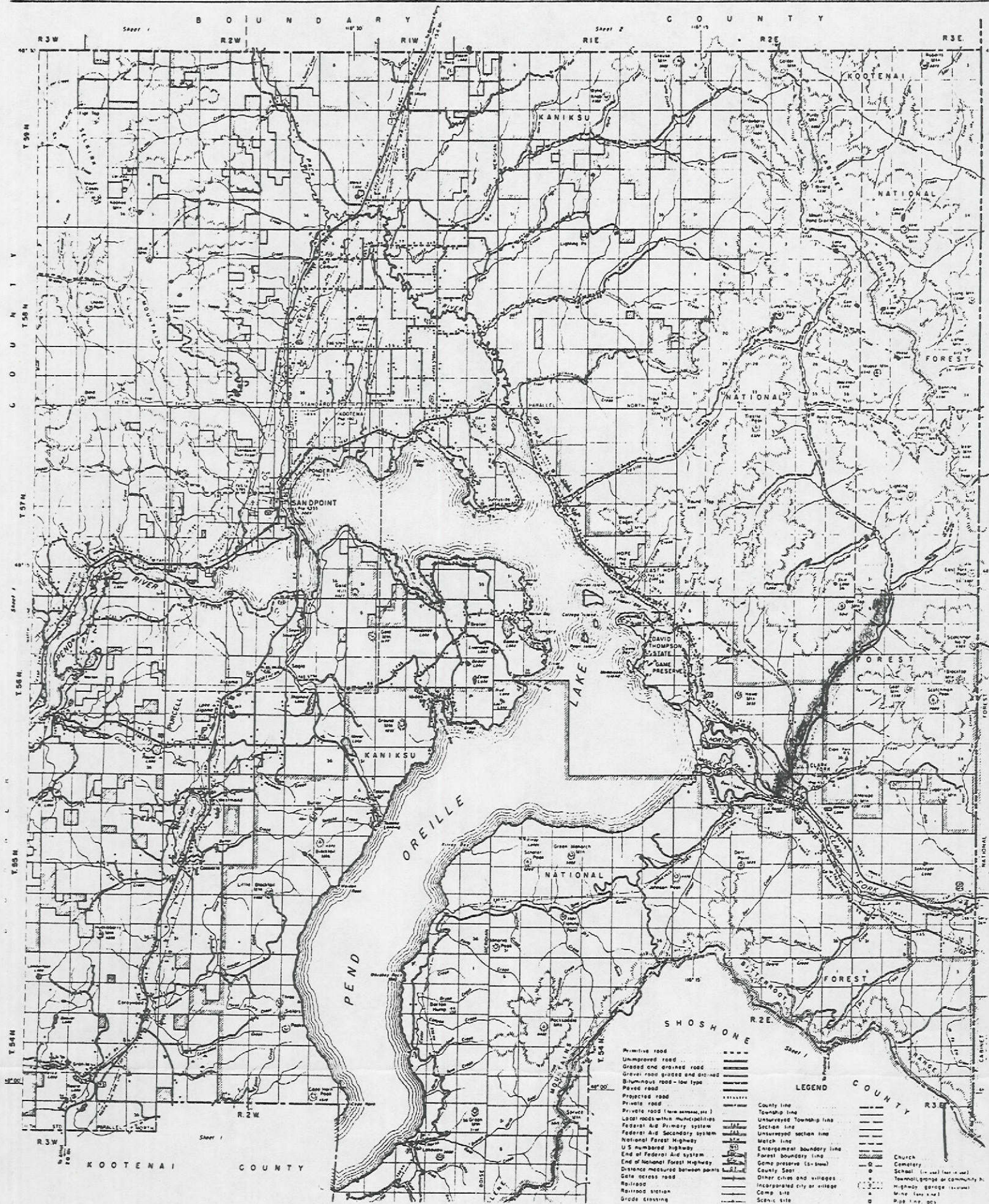










BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth,

Will Reed Hansen
(Applicant)

Chairman

Idaho Water Resource Board

Irene V. Stonedahl
9150 Malad
Boise, ID 83704

Rocco Tucci
543 N. Lamb Blvd. #50
Las Vegas, NV 89110

Compton White
Box 8
Clark Fork, ID 83811

Esther Widgren
Box 4
Clark Fork, ID 83811

Roy Wood
Box 1621
Sandpoint, ID 83864

returned

Cleone B. Zavislak
2281 Mt. Vernon
Riverside, CA 92507

X

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96-7980

Prop Owners

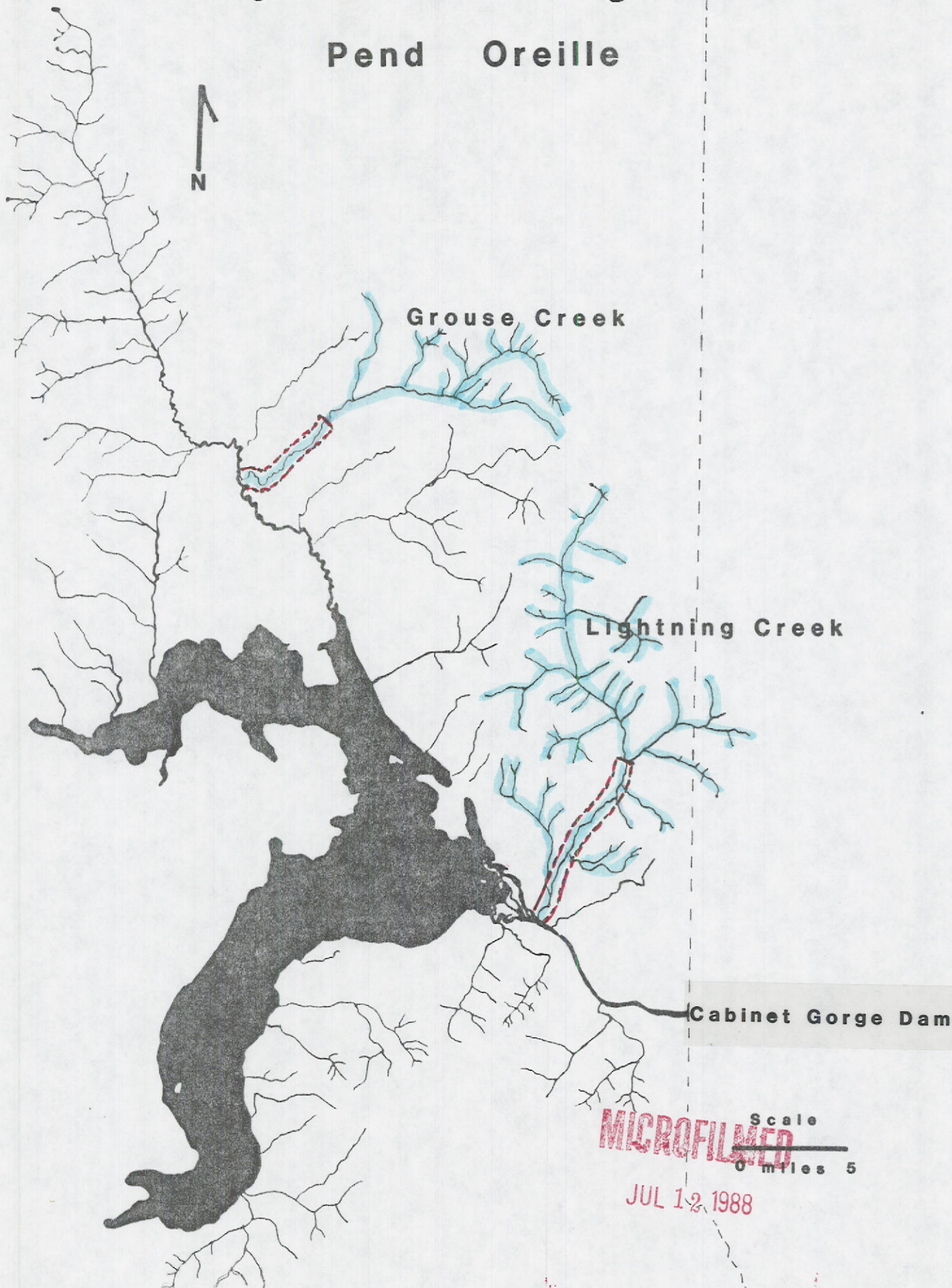
— LIGHTENING CREEK
(PORTIONS)

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JUL 12 1988

--LEGEND--
 PAVED ROADS
 STATE HWYS. (57) U.S. HWYS. (2)
 IMPROVED ROADS
 DIRT ROADS
 INFERIOR ROADS
 RAILROADS
 TRAILS
 INTERMITTENT CREEKS
 NAT'L FOREST BDRY.
 x x x x x

Pend Oreille





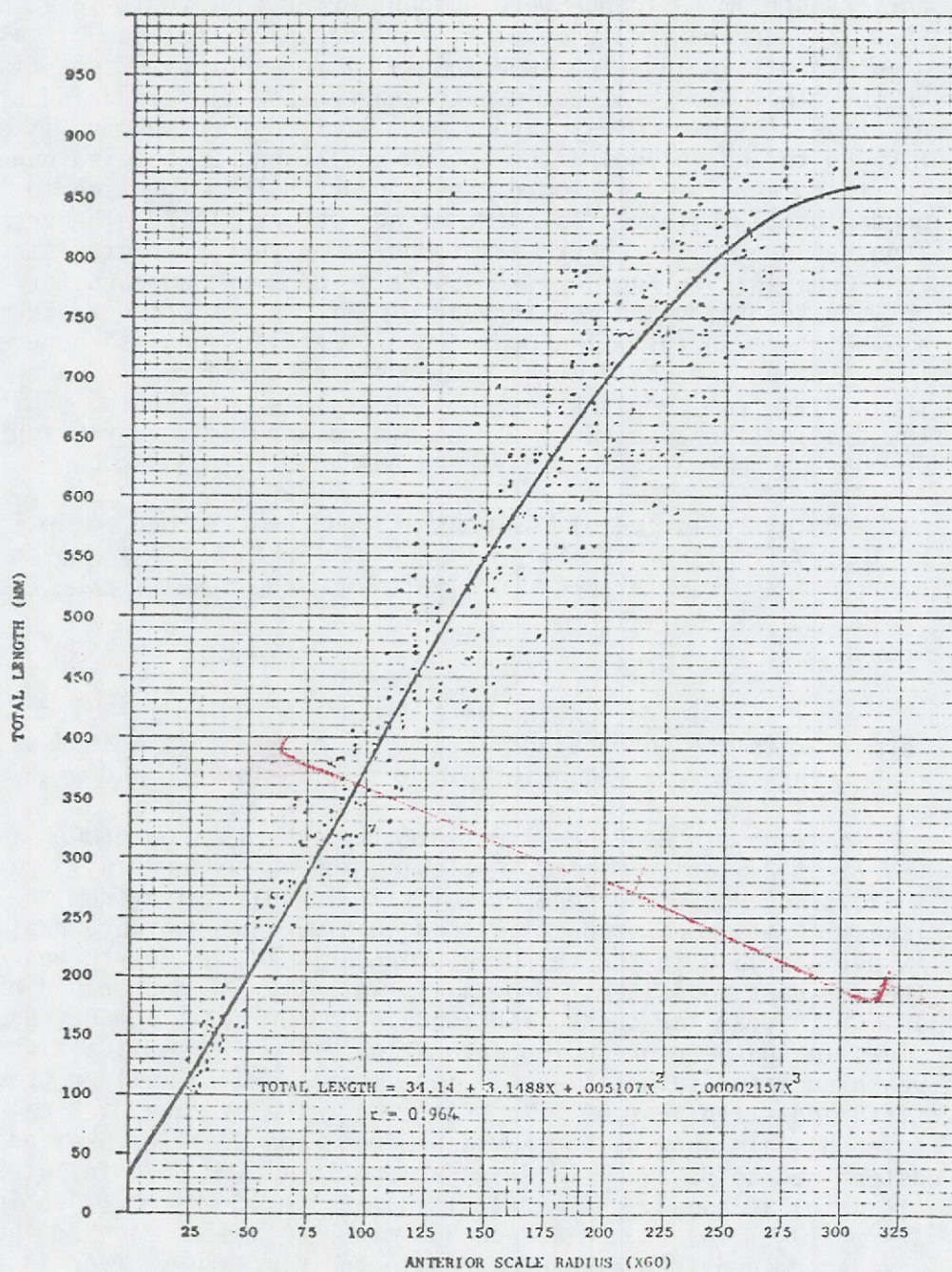
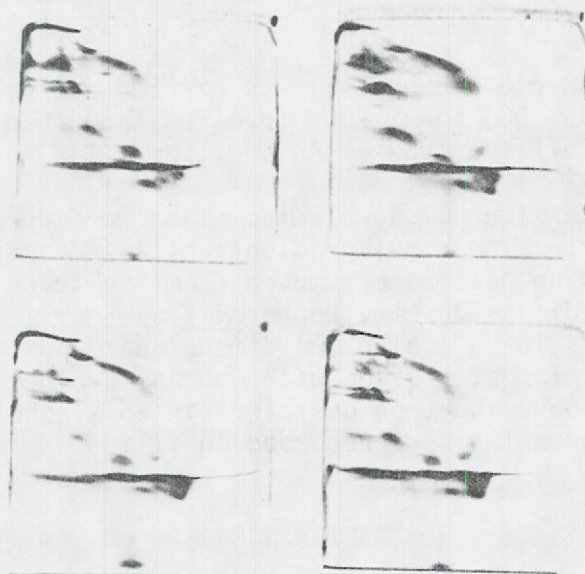


Figure 1. Body-scale relationship of 387 Kamloops rainbow collected from Pend Oreille Lake and tributaries (1972-1976).

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JUL 12 1988



UNRECORDED

JUL 12 1988

Figure 1. Two-dimensional gels of brood stock fish (upper gels) and Spring Creek fish (lower gels). The upper left gel is from the serum of a female and the upper right gel is from the serum of a male. Sexes could not be determined for the Spring Creek fish by external examination and these fish were not sacrificed.

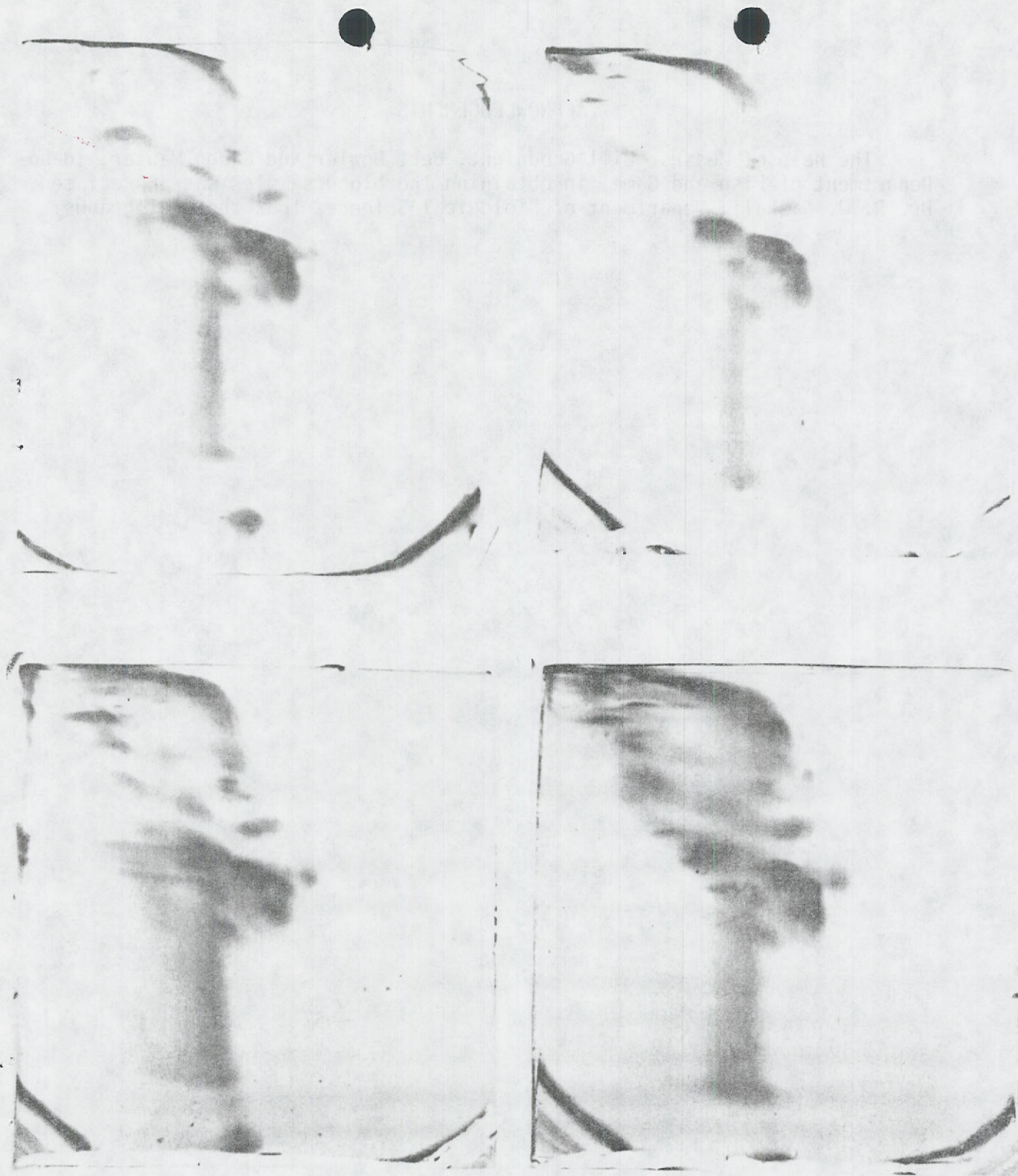


Figure 2. Two-dimensional gels of sera collected from "large" and "small" Clark Fork fish. The upper pictures are from "large" females and the lower two are from "small" females.

Lightning Creek

Lake
Pend Oreille

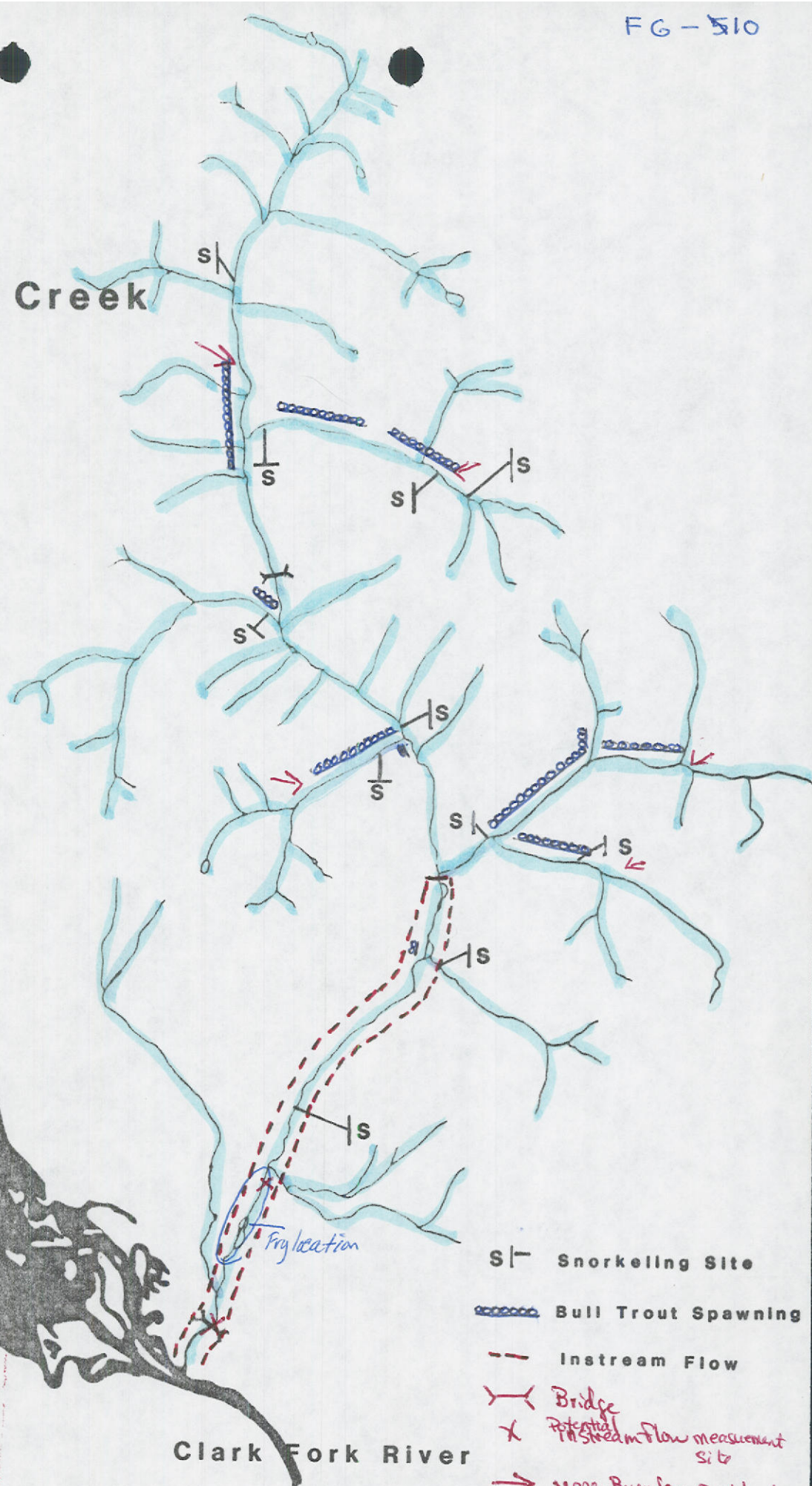
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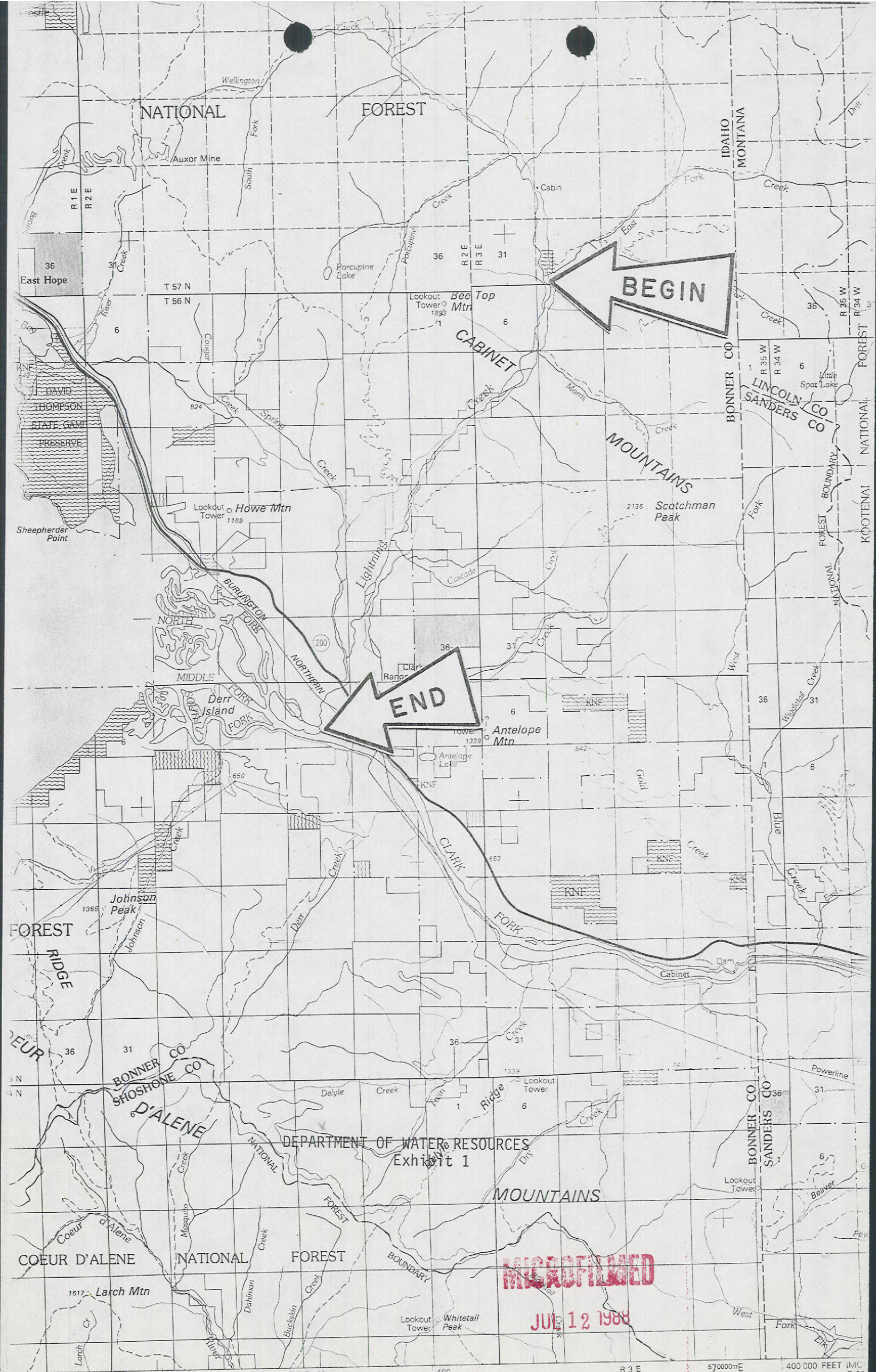
JUL 12 1988

Clark Fork River

Scale
0 miles 2

- S| Snorkeling Site
-  Bull Trout Spawning
-  Instream Flow
-  Bridge
-  Potential Streamflow measurement site
-  Upper Boundary Bull trout access





36
East Hope

DAVID
THOMPSON
STATE GAME
PRESERVE

Shepherd
Point

FOREST
RIDGE

COEUR
D'ALENE

COEUR D'ALENE

1617
Larch Mtn

T 57 N
T 56 N

NORTH
FORK
MIDDLE
FORK
NORTHERN
FORK

Johnson
Peak

BONNER CO
SHOSHONE CO
D'ALENE

NATIONAL
FOREST

15° 35'

824
Creek

Lookout
Tower
1169
Howe Mtn

200

Johnson

DEPT OF WATER RESOURCES
Exhibit 1

NATIONAL
FOREST

R 2 E 56

Porcupine
Lake

Lookout
Tower
1893
Bee Top
Mtn

Clark
Range

Derr
Creek

Derr
Creek

FOREST

400

36
R 2 E
R 3 E

Lightning
Creek

Clark
Range

Clark
Fork

Clark
Fork

FOREST

57° 00' 00" E

36
R 2 E
R 3 E

Antelope
Mtn

Antelope
Lake

Antelope
Mtn

Antelope
Mtn

FOREST

400

36
R 2 E
R 3 E

Antelope
Mtn

Antelope
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FOREST

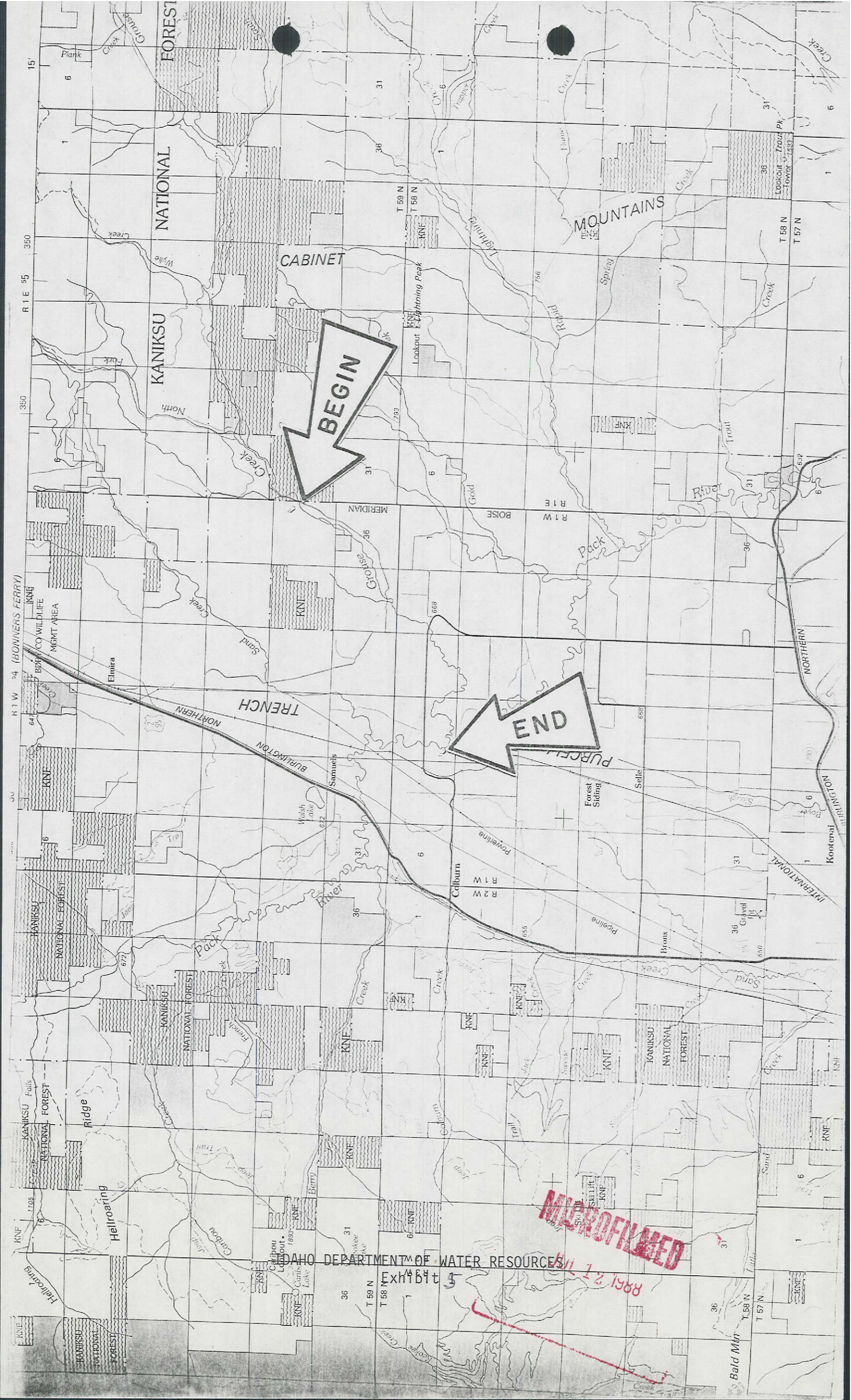
57° 00' 00" E

FIGURE 1. AVERAGE MONTHLY DISCHARGE, KAPID LEVY RIVER CR 112 SAMPLERS 1963-68



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JUL 12 1968



BEGIN

END

CABINET

MOUNTAINS

NATIONAL FOREST

KANIKSU

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R 1 E 55

350

15'

36

T 59 N

T 58 N

T 57 N

T 56 N

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State of Idaho
Department of Water Resources

WATER RIGHT LICENSE

WATER RIGHT NO. 96-07980

Priority: June 19, 1981

Minimum Stream Flow:

85.00 CFS

This is to certify, that STATE OF IDAHO

IDAHO WATER RESOURCE BOARD

STATEHOUSE

BOISE ID 83720

has complied with the terms and conditions of the permit, issued pursuant to Application for Permit dated June 19, 1981; and has submitted Proof of Beneficial Use on May 15, 1997. A minimum stream flow for:

GROUSE CREEK

tributary to PACK RIVER

has been established as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>MINIMUM STREAM FLOW</u>
MINIMUM INSTREAM FLOW	08/01 to 03/31	14.00 CFS
MINIMUM INSTREAM FLOW	04/01 to 05/31	85.00 CFS
MINIMUM INSTREAM FLOW	06/01 to 06/30	67.00 CFS
MINIMUM INSTREAM FLOW	07/01 to 07/31	23.50 CFS

MINIMUM STREAM FLOW REACH:

Beginning of Stream Flow Reach

SENE, Sec. 25, Township 59N, Range 01W

End of Stream Flow Reach

SESW, Sec. 4, Township 58N, Range 01W

BONNER County

CONDITIONS OF APPROVAL AND REMARKS

1. This right is subject to all prior water rights.
2. Use of water under this right shall be non-consumptive.
3. Use of water under this right shall recognize and allow the continued beneficial diversion of water under any prior existing water right established by diversion and application to beneficial use or by an application, permit, or license on file or issued by the director under the provisions of Chapter 2, Title 42, Idaho Code, with a priority of water right date earlier than the date of priority of this right.
4. Upon further finding and order of the director that gauging stations are required to maintain the approved minimum flows under this right, such measuring devices shall be permanently installed and maintained as specified by the director.

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JUN 10 1987

State of Idaho
Department of Water Resources**WATER RIGHT LICENSE**

WATER RIGHT NO. 96-07980

CONDITIONS OF APPROVAL AND REMARKS

5. The Director retains jurisdiction to review and amend any and all parameters of this right. Prior to undertaking a review of the water right, the Director shall identify the reasons for exercising retained jurisdiction under this condition, and give notice thereof to the public generally and to specific persons or parties known by the Director to be interested. The Director shall thereafter conduct a hearing for the purpose of determining whether the minimum stream flow should be modified or amended in the public interest. The burden of proof at the hearing shall be upon the person or party seeking to establish that a particular parameter of the water right should be modified or amended to satisfy the public interest. Review of the water right under this condition may not occur prior to 15 years after issuance of the license.
6. This minimum streamflow begins at the county bridge in the SENE, S25, T59N, R1W, and ends approximately 5 miles downstream at the confluence with Pack River in the SESW, S4, T58N, R1W.
7. This minimum streamflow is for maintenance of trout spawning and rearing.

This license is issued pursuant to the provisions of Section 42-219, Idaho Code.
Witness the seal and signature of the Director, affixed at Boise, this 23rd
day of MAY, 1997.

Acting for


KARL J. DREHER, DirectorMICROFILMED
JUN 10 1997

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

RECEIVED
MAY 19 1997

PROOF OF BENEFICIAL USE

The Idaho Department of Water Resources considers this form a statement that the permit holder(s) has/have completed all development that will occur under this permit and that water has been applied according to the provisions of the permit for the beneficial use(s) described below. This form must be accompanied by a license examination fee, when necessary, or be accompanied by a completed field examination report prepared by a certified water right examiner who has been appointed by the department.

1. Permit No. 96-07980 Telephone No. 208-327-7910

2. Name(s) of Permit Holder(s): Idaho Water Resource Board

3. Mailing Address: 1301 N. Orchard St., P.O. Box 83720, Boise, ID 83720-9000

4. Source of Water: Grouse Creek If **GROUNDWATER** (well), Date Drilled: mo. _____ / yr. _____

a. Well Driller: _____ Drilling Permit Number: _____ - _____ - _____ - _____

b. **OPTIONAL:**
Pump Horsepower: _____ Pressure (psi): _____ Dynamic pumping level (ft): _____

5. Use(s) (as authorized by the water right permit):

Domestic (No. of households): _____ Stockwater (No. and type of stock): _____

Irrigation (No. of acres): _____ Other: _____

6. Total rate of diversion and/or volume for which proof is submitted: 85 cfs OR _____ acre feet

7. Measuring Device Requirement: (refer to the approval conditions on your permit and respond accordingly)

(This question is not optional. Please check either yes or no. Proofs returned not checked accordingly, will be considered incomplete)

Measuring Device: Is a measuring device required? Yes _____ or No X

Has the measuring device been installed? Yes _____ or No X

Flow Measurement Port: Is a flow measurement port required? Yes _____ or No X

Has the measurement port been installed? Yes _____ or No X

8. Fee Enclosed: \$ NA (See Fee Schedule on back of the instructions for filing proof of beneficial use)

9. Person to contact to accompany the Department representative during field examination of the water system.

Name: NA Telephone Number: _____

Address: _____

10. The information given on this form is my true statement of the extent to which the above numbered permit has been developed and I relinquish any undeveloped portion of the permit to the State of Idaho.

Signature of permit holder: Eval Rainey (include your title, if on behalf of company or organization)

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JUN 10 1997 Date: 5-15-97

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

REQUEST FOR EXTENSION OF TIME
TO PROVIDE ADDITIONAL TIME IN WHICH TO SUBMIT PROOF OF
BENEFICIAL USE FOR A WATER RIGHT PERMIT

The Idaho Department of Water Resources will consider this form as a request that the permit holder(s) be granted an additional period of time in which to complete development of water right under the provisions of Section 42-204, Idaho Code.

Permit No. 96-7980

Name(s) of Permit Holder: Idaho Water Resource Board

Mailing Address: Statehouse, Boise, ID 83720

Date Proof is Due 24 June 1992 Telephone No. 327-7900

Describe what work has been completed toward the development of this water right:
(This must be filled out! If no work has been completed, show "none".)

Some flow data has been collected, primarily for the period of June through
September.

Costing \$ _____

The permit holder(s) has been unable to complete the remainder of the work for the following reasons:

Existing flow data was submitted to Water Allocation staff for examination, and was
determined to be incomplete. Additional time is required to complete data collection.

Permit holder(s) request an extension to 24 June, 19 97

FEE: \$15.00

F. Don Bradley
(Signature)*

*If other than permit holder, Power of Attorney must be supplied.

ACTION OF THE DEPARTMENT OF WATER RESOURCES

IT IS HEREBY ORDERED that the above request for extension of time be APPROVED
and the time within which to submit proof of beneficial use is
extended to July 1, 1997.

MICROFILMED

JUN 29 1992

Signed this 16th day June, 19 92

A. Glen Santor
Chief, Water Allocation Bureau

BEFORE THE DIRECTOR OF THE DEPARTMENT OF WATER RESOURCES
OF THE
STATE OF IDAHO

IN THE MATTER OF APPLICATION)
NO. 96-7980 TO ESTABLISH A)
MINIMUM STREAMFLOW IN GROUSE)
CREEK IN THE NAME OF THE IDAHO)
WATER RESOURCE BOARD)

ORDER ADOPTING PROPOSED
MEMORANDUM DECISION AND
ORDER

A. Kenneth Dunn, Director of the Department of Water Resources, issued a Proposed Memorandum Decision and Order approving Application No. 96-7980 on April 20, 1987, and served copies on the parties pursuant to Idaho Code § 67-5211.

More than fifteen days have passed since the service of the Proposed Memorandum Decision and Order.

No exceptions to the Proposed Memorandum Decision and Order having been filed with the Department of Water Resources;

IT IS HEREBY ORDERED that the Proposed Memorandum Decision and Order be adopted as the Final Decision and Order of the Director, and that the terms and conditions imposed therein be incorporated into approved Application No. 96-7980.

IT IS FURTHER ORDERED that proof of completion of works and beneficial use shall be submitted on or before February 1, 1993.

Dated this 24 day of June, 1987.


A. KENNETH DUNN
Director

MICROFILMED

JUL 12 1988

BEFORE THE DIRECTOR OF THE DEPARTMENT
OF WATER RESOURCES OF THE
STATE OF IDAHO

IN THE MATTER OF APPLICATION FOR PERMIT)
NO. 96-7980 TO ESTABLISH A MINIMUM STREAM)
FLOW IN GROUSE CREEK IN THE NAME OF THE)
IDAHO WATER RESOURCE BOARD)

ORDER ISSUING
PROPOSED MEMORANDUM
DECISION

A. Kenneth Dunn, Director of the Department of Water Resources, having reviewed the attached proposed decision prepared by his appointee, NORMAN C. YOUNG, who conducted the hearing or who has read the record in the this case, hereby approves the same as a proposed decision pursuant to Idaho Code, §67-5211.

Each party to these proceedings who appeared at the hearing is given the opportunity, pursuant to Idaho Code, §§42-1701A and 67-5211, to file exceptions to the proposed decision and to present briefs and oral arguments. If no timely and proper exceptions are received, an order by the Director will be entered adopting the proposed decision as his final decision.

I.
EXCEPTIONS

A. To be considered by the Director, exceptions must:

1. be received by the Director on or before the 15th day following the day of service of this Order and the proposed decision,

2. specifically identify the portions of the proposed decision to which exceptions are made and specifically state the grounds for those exceptions, and

3. be sent to each of the parties who appeared or their attorneys.

II.
BRIEFS

A. Any briefs in support of exceptions to the proposed decision shall be filed with the Director at the same time that party's exceptions are filed with the Director.

B. All response briefs to the exceptions must be filed with the Director within 15 days after the exceptions were served upon the responding party.

MAILED

JUL 12 1988

III.

A. No oral arguments before the Director on the proposed decision will be held unless specifically requested by a party filing exceptions to the proposed decision and unless that request is filed with the Director concurrently with the filing of that party's exception.

B. If oral arguments have been properly requested by a party filing exceptions, any other party, upon reasonable notice to the Director, shall have the right to present oral argument in response to the exceptions filed.

C. Oral arguments before the Director on exceptions to the proposed decision shall be heard at the discretion of the Director, pursuant to Idaho Code, §42-1701A. If oral arguments are to be heard, the Director will, within a reasonable time, notify each party of the place, date and hour the oral arguments will take place and of the period of time allocated for the arguments of this case. Unless the Director orders otherwise, all oral arguments shall be heard in Boise, Idaho.

IV.

CERTIFICATE OF SERVICE

All exceptions, briefs, requests oral arguments and other matters filed with the Director in connection with the proposed decision shall be served on all other parties to these proceedings in accordance with Rule 7.2.

V.

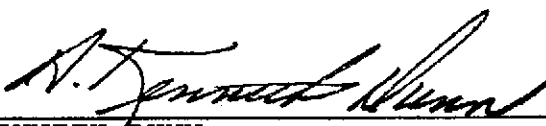
FINAL DECISION

Following the submission of all exceptions, briefs and oral arguments, if they are heard, the Director shall issue a final decision adopting, modifying or rejecting and replacing the proposed decision. Copies of the decision and order shall be served on all parties.

Dated this 20th day of APRIL, 1987.

RECEIVED

JUL 12 1988


A. KENNETH DUNN
Director

BEFORE THE DIRECTOR OF THE DEPARTMENT OF WATER RESOURCES
OF THE
STATE OF IDAHO

IN THE MATTER OF APPLICATION FOR PERMIT)
NO. 96-7980 TO ESTABLISH A MINIMUM STREAM)
FLOW IN GROUSE CREEK IN THE NAME OF THE)
IDAHO WATER RESOURCE BOARD)

PROPOSED
MEMORANDUM DECISION
AND ORDER

On June 19, 1981, the Idaho Water Resource Board (hereafter Board) filed with the Idaho Department of Water Resources (hereafter Department) an application for permit to preserve a minimum flow in Grouse Creek, tributary to the Pack River, in Bonner County. The application was filed by the Board at the request of the Idaho Department of Fish and Game in accordance with the provisions of Chapter 15, Title 42, Idaho Code.

A public meeting was held by the Board on September 29, 1983, in Sandpoint, Idaho, for the purpose of determining local public interest with respect to the application. On October 7, 1983, the Board adopted a resolution requesting the Director of the Department to proceed with administrative action on the application.

Notice describing the proposed appropriation and setting the time and place for the required hearing was published in the Sandpoint Daily Bee on October 26 and November 2, 1983. A public hearing was held at Sandpoint, Idaho on November 16, 1983.

Because of the similarities between this application and application for permit No. 96-7979, to appropriate a minimum stream

JUL 12 1988

flow for identical purposes from nearby Lightning Creek tributary to Clark Fork, a joint hearing was conducted for the two applications. Parties appearing in a formal capacity included members of the Board; representatives of the Idaho Department of Fish and Game; Tom Mehler representing the Lake Pend Oreille Idaho Club; Mike Ruskey representing the Idaho Panhandle Chapter of Trout Unlimited; Attorney Thomas E. Cooke representing Roland Derr; and Vicki Younger representing property owners in the Grouse Creek basin. Ted Clarke appeared for the purpose of presenting public interest views and comments.

Based upon sworn testimony, documentation and statements included in the record, and his understanding of the law, the Hearing Officer as a representative of the Director of the Department proposes the following Findings of Fact, Conclusions of Law, and Order.

FINDINGS OF FACT

1) On June 19, 1981, the Board filed Application for Permit No. 96-7980 to appropriate a minimum stream flow in Grouse Creek, which is tributary to the Pack River, Bonner County, pursuant to the provisions of Chapter 15, Title 42, Idaho Code.

2) Application for Permit No. 96-7980 proposes to appropriate a minimum stream flow in Grouse Creek within a reach extending from the confluence with Pack River in the SE1/4 SW1/4, Section 4, Township 58 North, Range 1 West, B.M., upstream approximately five (5) miles to the county road bridge in the SE1/4 NE1/4, Section 25, Township 59 North, Range 1 West, B.M. The proposed rate of flow is 14 cubic feet per second from January 1

RECORDED

JUL 12 1988

through March 31, 85 cubic feet per second in April and May, 67 cubic feet per second in June and July, and 14 cubic feet per second from August 1 through December 31.

3) The purpose of the proposed instream appropriation is to maintain trout spawning and rearing throughout the reach defined above.

4) Based upon testimony of the staff of the Department, a finding is made that various water right licenses and permits exist with points of diversion within the designated minimum stream flow reach. The sum of the rates of flow of these water rights is 6.66 cubic feet per second. In addition, one beneficial use right is claimed to divert 0.6 cubic feet per second in this reach. In comparison to measured stream flows in Grouse Creek, these diversions are not usually a significant portion of the stream flow.

5) All rights acquired under Application for Permit No. 96-7980 are for instream non-consumptive uses and will be subject to all vested water rights.

6) Based upon the sworn testimony, documentation, and statements comprising the record in this matter, a finding is made that the minimum stream flow proposed by Application No. 96-7980 is necessary to maintain trout spawning and rearing.

7) Based upon testimony presented at the hearing, a finding is made that the benefits to be derived from the minimum stream flow application will be enjoyed by members of the public as opposed to being limited to private use or enjoyment.

8) Based upon testimony and evidence submitted by the Idaho Department of Fish and Game, a finding is made that the flow requested

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JUL 12 1988

in the application is the minimum flow required to preserve the existing unique characteristics of the stream for the public benefits and is not the ideal or most desirable flow which could be utilized for that purpose.

9) Based upon testimony and evidence submitted concerning available flow measurement data, a finding is made that the minimum stream flow proposed for Grouse Creek is capable of being maintained.

CONCLUSIONS OF LAW

1) The proposed minimum stream flow appropriation will not interfere with any vested water right, permit, or right under an application having a priority date earlier than June 19, 1981.

2) The proposed minimum stream flow appropriation is in the public, as opposed to private, interest.

3) The proposed minimum stream flow appropriation is necessary to maintain trout spawning and rearing.

4) The minimum stream flow proposed to be appropriated is the minimum flow required for the purpose cited in Conclusion of Law No. 3 and not the ideal or most desirable flow.

5) The minimum stream flow proposed is capable of being maintained.

ORDER

IT IS, THEREFORE, HEREBY ORDERED that Application for Permit No.96-7980 is APPROVED subject to the following conditions:

1) Upon the future finding and order of the Director that gauging stations are required to maintain the approved minimum flow on Grouse Creek, such measuring devices shall be permanently installed and maintained as specified by the Department.

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JUL 12 1988

2) Proof of instream beneficial use of the minimum stream flow appropriated shall be submitted in a manner approved by the Department within five years after the permit approval is finally effective as herein provided. The proof submitted shall include at least three years of flow data for the water course. The frequency of the data accumulation must be submitted to the Director for review and approval.

3) The use of water under this permit shall be non-consumptive.

4) The use of water under this permit is subject to all prior rights.

5) The Director retains jurisdiction to review and amend any and all parameters of this permit and subsequent license. Prior to undertaking a review of the water right, the Director shall identify the reasons for exercising retained jurisdiction under this condition, and give notice thereof to the public generally and to specific persons or parties known by the Director to be interested. The Director shall thereafter conduct a hearing for the purpose of determining whether the minimum stream flow should be modified or amended in the public interest. The burden of proof at the hearing shall be upon the person or party seeking to establish that a particular parameter of the water right should be modified or amended to satisfy the public interest. Review of the water right under this condition may not occur prior to 15 years after issuance of either the permit or the license.

6) The application hereby approved by the Director shall be submitted to the Idaho Legislature by the fifth day of the next

regular legislative session and the Director's approval shall not become finally effective until approved by the Legislature pursuant to the procedure provided by Section 42-1503, Idaho Code.

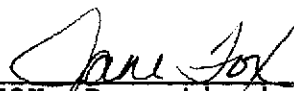
Dated this 9TH day of April, 1987.


NORMAN C. YOUNG
Hearing Officer

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JUL 12 1988

I hereby certify that on the 15th of April, 1987, I sent copies of the Proposed Memorandum Decision and Order to the following people:


JANE FOX, Receptionist

Water Resource Board
Gene Gray

Water Resource Board
Dave Rydalch

Dept. of Fish & Game
Steve Goddard
600 South Walnut
Boise, ID 83706

Tom Mehler
Lake Pend Oreille Trout Club
P.O. Box 1589
Sandpoint, ID 83864

Mike Ruskey
Idaho Panhandle Chapter of Trout Unlimited
P.O. 1821
Sandpoint, ID 83864

Cooke, Lamanna & Smith
Thomas E. Cooke
Attorney at Law
P.O. Box 789
Priest River, ID 83856

Vicki Younger
P.O. Box 149
Colburn, ID 83865

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JUL 12 1988

I hereby certify that on the 20th of April, 1987, I sent copies of the Proposed Memorandum Decision and Order and the Order Issuing Proposed Memorandum Decision to the following people:


JANE FOX, Receptionist

Water Resource Board
Gene Gray

Water Resource Board
Dave Rydalch

Dept. of Fish & Game
Steve Goddard
600 South Walnut
Boise, ID 83706

Tom Mehler
Lake Pend Oreille Trout Club
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Thomas E. Cooke
Attorney at Law
P.O. Box 789
Priest River, ID 83856

Vicki Younger
P.O. Box 149
Colburn, ID 83865

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JUL 12 1988

CERTIFICATE OF MAILING

I hereby certify that on the 24th day of June, 1987, I mailed a true and correct copy, by U.S. Mail, postage prepaid, of the Order Adopting Proposed Memorandum Decision and Order to:

Water Resource Board
Gene Gray
Route 1, Box 46-A
Payette, ID 83661

Water Resource Board
Dave Rydalch
Route 2, Box 108
St. Anthony, ID 83445

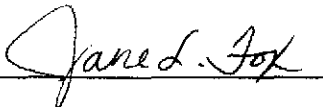
Department of Fish & Game
Steve Goddard
600 South Walnut
Boise, ID 83706

Tom Mehler
Lake Pend Oreille Trout Club
P.O. Box 1589
Sandpoint, ID 83864

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Vicki Younger
P.O. Box 149
Colburn, ID 83865


JANE L. FOX, Receptionist

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JUL 12 1988

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

1. Name of applicant Idaho Water Resource Board Phone 384-2215

Post office address Statehouse, Boise, Idaho 83720

2. Source of water supply Grouse Creek which is a tributary of Pack River

3. Location of reach is from SE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Section 4 Township 58N

Range 1 W B.M. Bonner County, upstream approximately 5 miles to the county road bridge in SE $\frac{1}{4}$ NE $\frac{1}{4}$, Section 25, T59N R1W, Bonner County.

4. Water will be used for the following purposes:

see No. 10

Amount for instream flow purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

5. Total quantity to be appropriated:

a. cubic feet per second and/or b. acre-feet per annum.

6. Proposed diverting works:

a. Description of ditches, flumes, pumps, headgates, etc.

b. Height of storage dam feet, active reservoir capacity acre-feet; total reservoir capacity acre-feet, materials used in storage dam:

Period of year when water will be diverted to storage to inclusive.
(Month/Day) (Month/Day)

c. Proposed well diameter is inches; proposed depth of well is feet.

7. Time required for the completion of the works and application of the water to the proposed beneficial

use is 5 years (minimum 1 year — maximum 5 years).

8. Description of proposed uses:

a. If water is **not** for irrigation:

(1) Give the place of use of water: SE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Section 4 Township 58N

Range 1 W B.M.

(2) Amount of power to be generated: horsepower under feet of head.

(3) List number of each kind of livestock to be watered

(4) Name of municipality to be served , or number of families to be supplied with domestic water

(5) If water is to be used for other purposes describe: To maintain trout spawning and rearing habitat from the stream mouth upstream a distance of approximately five miles.

b. If water is for irrigation, indicate acreage in each subdivision in the tabulation below:

[illegible]

Total number of acres to be irrigated _____

c. Describe any other water rights used for the same purposes as described above. None

9. a. Who owns the property at the point of diversion _____

b. Who owns the land to be irrigated or place of use _____

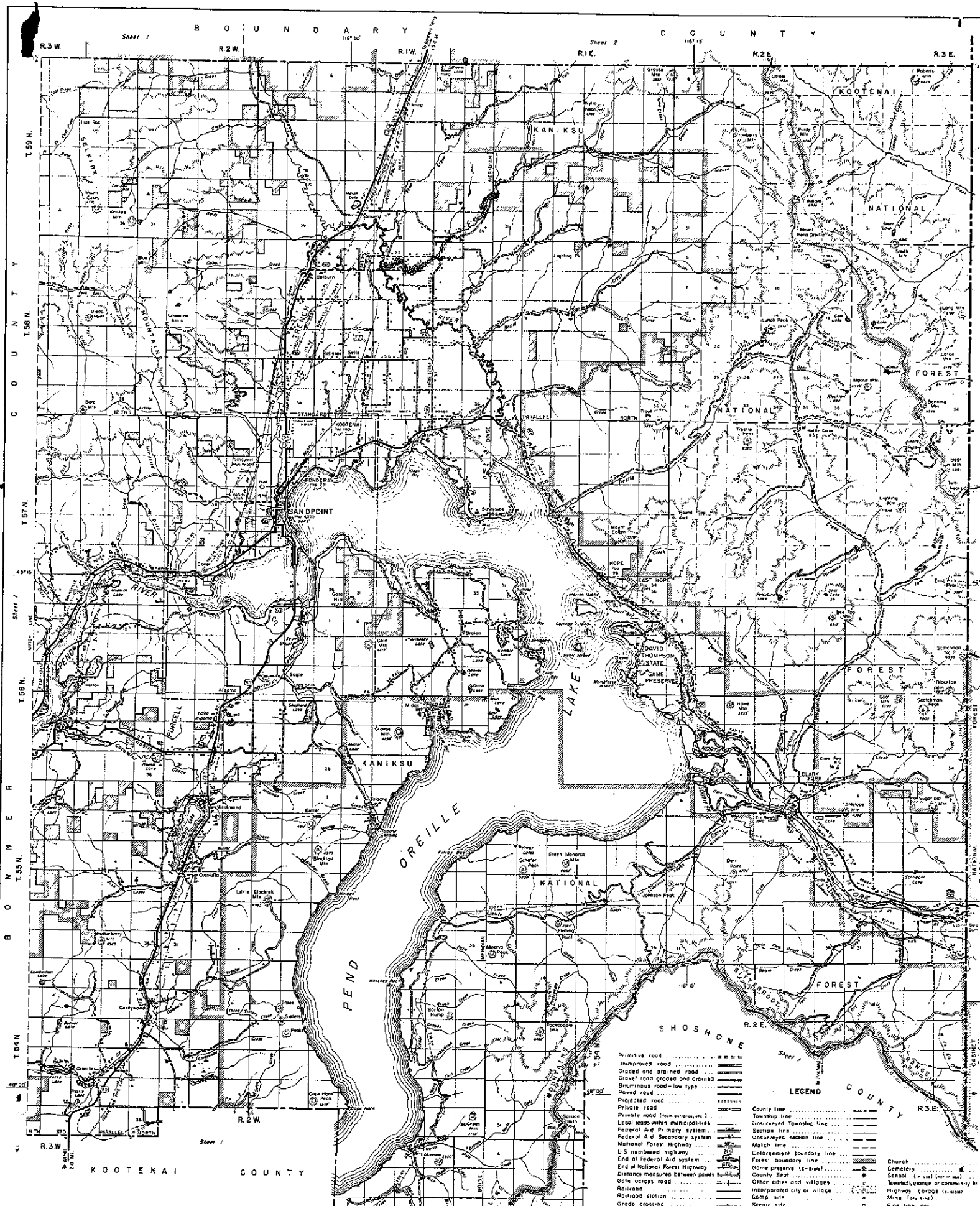
c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing

10. Remarks

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
14	14	14	85	85	67	67	14	14	14	14	14

100-443887-100

JUL 12 1988



[illegible]

BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth.

Mr. Reed Hansen
(Applicant)

Chairman

Idaho Water Resource Board

Received by LYS Date 7/6/87 Time 8:45 AM
Preliminary check by RSB Fee \$ NR
Received by Rest Date NR
Publication prepared by mm Date 9/8/83
Published in Starpoint Bee
Publication dates 9/14 + 21/83
Publication approved mm Date 10/11/83
Protests filed by: _____

Copies of protests forwarded by _____
Hearing held by _____ Date _____
Recommended for approval denial by _____

ACTION OF THE DIRECTOR, DEPARTMENT OF WATER RESOURCES

This is to certify that I have examined Application for Permit to appropriate the public waters of the State of Idaho No. 96-7980, and said application is hereby APPROVED.

1. Approval of said application is subject to the following limitations and conditions:

- a. SUBJECT TO ALL PRIOR WATER RIGHTS.
- b. Proof of construction of works and application of water to beneficial use shall be submitted on or before February 1, 1993.
- c. The rate of diversion, if water is to be used for irrigation under this permit, when combined with all other water rights for the same land shall not exceed 0.02 cubic feet per second for each acre of land.
- d. Other: Pursuant to PROPOSED MEMORANDUM DECISION AND ORDER and ORDER ADOPTING PROPOSED MEMORANDUM DECISION AND ORDER

Witness my hand this 24 day of June, 1987.

St. Bernard Dunn
Director

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JUL 12 1988

NAME OF STREAM: GROUSE CREEK, A TRIBUTARY OF PACK RIVER

LEGAL DESCRIPTION OF THE POINT OF THE STREAM WHERE STREAM FLOW IS REQUESTED:

At stream mouth, Bonner County, SE $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 4, T. 58 N., R. 1 W.

THE PROPOSED STREAM FLOW IN CUBIC FEET PER SECOND:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
14	14	14	85	85	67	67	14	14	14	14	14

THE PURPOSE FOR WHICH THE MINIMUM STREAM FLOW IS PROPOSED:

To maintain trout spawning and rearing habitat from the stream mouth upstream a distance of approximately five miles.

THE PERIOD OF TIME OR SEASON OF YEAR DURING WHICH APPROPRIATION IS PROPOSED:

See above.

EVIDENCE THAT THE APPROPRIATION WILL NOT INTERFERE WITH ANY VESTED WATER RIGHT, PERMIT, OR WATER APPLICATION OF EARLIER DATE OF PRIORITY:

The above requested flow is for instream nonconsumptive use and will be subject to all vested water rights, permits or water application of earlier dates of priority.

EVIDENCE THAT THE APPROPRIATION WOULD BE IN THE PUBLIC INTEREST AS OPPOSED TO PRIVATE INTEREST: The stretch of Grouse Creek from the mouth upstream to a point five miles is one of the major trout spawning and rearing streams in Northern Idaho and is one of the primary spawning tributaries of Pend Oreille Lake.

The requested instream water right on Grouse Creek will be held in trust for the people of Idaho by the Idaho Water Resource Board.

EVIDENCE OR JUSTIFICATION THAT THE APPROPRIATION IS NECESSARY FOR THE PURPOSES SHOWN ABOVE:

During 1977, personnel of the Idaho Fish and Game collected field data from Grouse Creek. Using this data with instream flow methodologies, the above requested flows were determined as necessary for maintaining trout spawning and rearing habitat in Grouse Creek. Methodologies, techniques and flow recommendations are presented in the following publication:

Cochnauer, Tim and Edwin Buettner. 1978. Stream Resource Maintenance Flow Determinations on Idaho Streams. Job Performance Report, Project F-69-R-3, Job II. 88 pp.

EVIDENCE THAT THE REQUESTED FLOW IS MINIMUM AND NOT THE IDEAL OR MOST DESIRABLE FLOW: The ideal flow would be bankfull discharge.

EVIDENCE THAT THE REQUESTED FLOW IS CAPABLE OF BEING MAINTAINED AS EVIDENCED BY RECORDS OF STREAM FLOWS:

No gaging station is located on Grouse Creek.

LOCATION OF EXISTING GAGING STATION THAT CAN BE USED IN THE ADMINISTRATION OF THIS APPROPRIATION: None

JUL 12 1988

AFFIDAVIT OF PUBLICATION

State of Idaho

ss.

County of Bonner,

Pete Thompson being first duly sworn on oath deposes and says that he is publisher of the Sandpoint Daily Bee, and News Bulletin, newspapers printed and published at Sandpoint, in Bonner County, Idaho; that the said newspapers have been continuously and uninterruptedly published in said Bonner County during a period of 12 months prior to the first publication of the hereto attached notice of publication in the case of _____

Legal Notice

as it was published in the regular and entire issue of the said paper for a period of 2 consecutive weeks, commencing on 14 day of 9, 1983 and ending on the 21 day of 9, 1983 and that said notice was published in said newspaper.

Pete Thompson

Subscribed and sworn to before me this 3 day of 10, 1983.

Deed M Thompson

Notary Public for Idaho,

Residing at Sandpoint, Idaho

RECORDED

JUL 12 1988

NOTICE OF APPLICATION FOR MINIMUM STREAM FLOW

Notice is hereby given that the Idaho Water Resource Board has on June 19, 1981, submitted two (2) Applications for Permit to the Department of Water Resources proposing the appropriation of water to preserve the minimum streamflows from the following sources of water which are further described as follows:

APPLICATION NO. 96-7979

Source: Lightning Creek, tributary to Pend Oreille Lake
Location of Minimum Streamflow Reach: SWNE Sec. 3, T55N, R02E, B.M., upstream approx. 8 miles to confluence with East Fork in the SWSW Sec. 32, T57N, R03E, B.M., Bonner County.

Rate of Flow and Season of Use:

Rate:	Period of Use
49.0 CFS	8/1 to 3/31
84.0 CFS	4/1 to 5/31
53.0 CFS	6/1 to 7/31

Use: To maintain trout spawning and rearing habitat.

APPLICATION NO. 96-7980

Source: Grouse Creek, tributary to Pack River.
Location of Minimum Streamflow Reach: SESW Sec. 4, T58N, R01W, B.M., upstream approx. 5 miles to the county road bridge in the SENE Sec. 25, T59N, R01W, B.M., Bonner County.

Rate of Flow and Season of Use:

Rate	Period of Use
14.0 CFS	8/1 to 3/31
85.0 CFS	4/1 to 5/31
67.0 CFS	6/1 to 7/31

Use: To maintain trout spawning and rearing habitat.

The Idaho Water Resource Board will hold a Public Meeting on the applications at 7:30 p.m., on Thursday, September 29, 1983, in the Sandpoint Community Hall 204 S. 1st. St., Sandpoint, Id., for the purpose of gathering information about public interest with regard to the above minimum stream flow applications. If issued, these permits will be subject to all prior water rights.

DONALD R. KRAMER

Chairman-Idaho Water Resource Board

Published in the Sandpoint Daily Bee on September 14 and 21, 1983.

OK
10/11/83

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OCT 7 1983

Department of Water Resources
Northern District Office

AFFIDAVIT OF PUBLICATION

State of Idaho

ss.

County of Bonner,

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Legal notice
as it was published in the regular and entire issue of the said paper for a period of 2 consecutive weeks, commencing on 26 day of 10, 1983 and ending on the 2 day of 11, 1983 and that said notice was published in said newspaper.

Pete Thompson

Subscribed and sworn to before me this 3 day of 11, 1983.

Abel M. Thompson

Notary Public for Idaho,

Residing at Sandpoint, Idaho

NOTICE OF APPLICATION FOR MINIMUM STREAM FLOW

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67.0 CFS	6/1 to 7/31

Use: To maintain trout

spawning and rearing habitat.

The Director of the Department of Water Resources will hold a public hearing on the applications at 9:00 a.m., on Wednesday, November 16, 1983, in the conference room of the Federal Building, 1500 Highway #2 (Dover Highway), Sandpoint, Idaho, for the purpose of hearing evidence in regard to the applications. The hearing will be held pursuant to the provisions of Sec. 42-1503, Idaho Code.

If issued, these permits will be subject to all prior water rights. Any party who wishes to formally appear in this proceeding for the purpose of presenting evidence or cross examining witnesses should file a notice of appearance with the Director, Department of Water Resources, Statehouse, Boise, Idaho, five (5) days prior to the hearing. Other parties will be given an opportunity to informally present their views and comments without the necessity of filing a notice of appearance.

A. KENNETH DUNN
Director

Published in the Sandpoint Daily Bee on October 26 and November 2, 1983.

Department of Water Resources
Boise, Idaho 83720

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upstream approx. 8 miles to confluence with East Fork in the
SWSW Sec. 32, T57N, R03E, B.M., Bonner County.

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APPLICATION NO. 96-7980

Source: Grouse Creek, tributary to Pack River.

Location of Minimum Streamflow Reach: SESW Sec. 4, T58N, R01W, B.M.,
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A. KENNETH DUNN
Director

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JUL 12 1983

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Use: To maintain trout spawning and rearing habitat.

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DONALD R. KRAMER
Chairman--Idaho Water Resource Board

Published in the Sandpoint Daily Bee on September 14 and 21, 1983.

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DONALD R. KRAMER
Chairman--Idaho Water Resource Board

Published in the Sandpoint Daily Bee on September 14 and 21,

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JUL 12 1988



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000

Phone: (208) 327-7900 FAX: (208) 327-7866

May 30, 1997

PHILIP E. BATT
GOVERNOR

KARL J. DREHER
DIRECTOR

STATE OF IDAHO
IDAHO WATER RESOURCE BOARD
STATEHOUSE
BOISE ID 83720

RE: WATER RIGHT NO. 96-07980

Dear Water Right Holder(s):

The Department of Water Resources (the Department) has issued the enclosed license confirming that a water right has been established in accordance with the permit referenced above. The license is a preliminary order issued by the Department pursuant to section 67-5243, Idaho Code. It can and will become a final order without further action of the Department unless a party petitions for reconsideration or files an exception and/or brief as further described below:

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the Department within fourteen (14) days of the service date of this order. The Department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See section 67-5243(3), Idaho Code.

EXCEPTIONS AND BRIEFS

Within twenty-one (21) days after (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding. Otherwise, this preliminary order will become a final order of the Department.

If any party appeals or takes exceptions to this preliminary order, opposing parties shall have twenty-one (21) days to respond to any party's appeal. Written briefs in support of or taking exceptions to the preliminary order shall be filed with the Department. The Department retains the right to review the preliminary order on its own motion.

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ORAL ARGUMENT

If the Department grants a petition to review the preliminary order, the Department shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Department will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Department orders otherwise, all oral arguments will be heard in Boise, Idaho.

CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Department in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with Rules of Procedure 302 and 303.

FINAL ORDER

The Department will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Department may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The Department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

Unless a different date is stated in a final order, the order is effective fourteen (14) days after its issuance if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:

- (a) the petition for reconsideration is disposed of; or
- (b) the petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

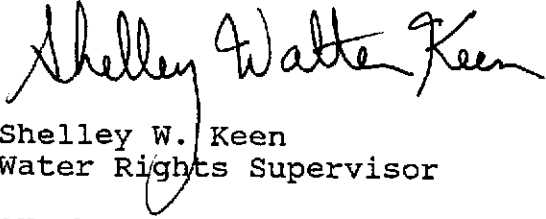
MICROFILMED

JUN 10 1987

MICROFILMED

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.

Sincerely,



Shelley W. Keen
Water Rights Supervisor

SK:ph

Enclosure

FILED
JUN 10 1997

CERTIFICATE OF MAILING

I hereby certify that on the 30th day of May, 1997, I mailed a true and correct copy, postage prepaid, of the foregoing PRELIMINARY ORDER (Approved License) to the person(s) listed below:

Water Right No. 96-07980

STATE OF IDAHO
IDAHO WATER RESOURCE BOARD
STATEHOUSE
BOISE ID 83720


Kari Lynn Townsend
Secretary

MICROFILMED
JUN 10 1997

MEMORANDUM

To: ~~Sharla Curtis~~ *File*
Through: Bill Graham *BS*
From: John Beal *JB*
Date: May 16, 1997
Re: Water Rights 97-7274 and 96-7980

Fish and Game personnel and I discussed these water rights and the proposed License Flows we discussed. Based upon this discussion you have the same options you presented to me earlier. Following is a brief discussion of each right.

Indian Creek (97-7274):

If you issue a preliminary license for 26 cfs in Oct to June, 19 cfs in July, 12 cfs in August and 9 cfs in September, it will probably be accepted. There is a small chance Parks and Recreation and/or Fish and Game may ask the Board to request additional time to take measurements from July through September. I doubt that they will and I think issuing the License is the action to take.

Grouse Creek (96-7980)

Fish and Game is concerned about the low flow in August of 9.5 cfs. All of the measurements for August in 1986 through 1990 were taken during the drought period. If we could issue the License for 14 cfs, I think everyone would be more comfortable. In talking to people ^{who} have seen this creek in normal years, 14 cfs is probably reasonable. If you issue the license for 9.5 cfs there is a good chance Fish and Game will ask us to request an extension of time and allow them to supply data for for the month of August for a none drought year. This is okay with us.

Permit No. 96-07980												
Summary of Stream Flow Data												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Permit	14.0	14.0	14.0	85.0	85.0	67.0	67.0	14.0	14.0	14.0	14.0	14.0
1986							19.0	5.7	17.2	30.0		
1987						68.6	23.5	9.5	5.8			
1988						64.9	19.6	7.1				
1990								4.9				
1993										14.2	15.0	26.2
1994	27.2	32.5	124.5									
License	14.0	14.0	14.0	85.0*	85.0*	67.0	23.5	9.5	14.0	14.0	14.0	14.0
* No flow measurements for April and May were supplied for 1987-1997. However, records from 1960-1977 indicate that flows in April and May ranged from 153 cfs to 1060 cfs, far exceeding the minimum stream flow request of 85 cfs.												

MEMORANDUM

TO: Files 36-08307, 96-07980, 97-07274 and 97-07275

FROM: Sharla

DATE: April 28, 1997

RE: License Issuance

The above referenced files have been reviewed for licensing. They were routed to John Beal to resolve some questions about data submittal and capability of maintaining flows requested. John's memos have been filed in the appropriate files.

Licenses have been drafted as follows:

36-08307:

270.0 cfs	1/1 - 12/31	Outflow estuary reach
150.0 cfs	1/1 - 12/31	Springs reach

These flows have been reduced based on the data submitted; the difference between the upper and lower measurements is the rate shown for springs reach.

If these lowered flows are unacceptable, the proof of beneficial use will have to be withdrawn and an extension of time filed to compile further data to warrant higher flows.

96-07980:

License as permitted with the exception of the flow for July; these flows have been dropped to the maximum reported rates. If this is not acceptable, an extension of time can be filed.

Proof of beneficial use has not yet been filed; if the above is acceptable and the b/u form is received, licensing can proceed.

97-07274:

License as suggested by John Beal with reduced flows for July through September. The spawning data has been received; 3 of the 5 measurements taken indicate flow is capable of being maintained in line with the suggested reductions.

97-07275:

License as permitted. The spawning data has been received; measurement information includes drought conditions, however, the flow data indicates that flow is capable of being maintained more than 60% of the time.

The draft licenses for these files should be routed to John Beal for approval and follow-up. If acceptable, they can then be routed to Norm so that they can be reviewed by the Board at the next meeting on May 16.

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RIGHT NO. 96-07980

Was flow data submittal a requirement
with proof submittal? Yes ☒ No

Data submitted fully complies with permit condition
(i.e. # of years of flow data sufficient) 3 yrs.

- July flow of 67 cfs not possible to maintain
 hit condition 3 yrs. - drop to 14 cfs
 (t)

Name Standardized
Total cfs & div. capacity listed as highest flow
P/D(s) beginning and ending descriptions listed
Use flows defined for entire year
P/U left blank (description in remarks)
Remarks/non-standard conditions
 Non-consumptive
 Watermaster control
 Jurisdiction retains to amend
 Description of reach(es)
 All other applicable permit conditions
 carried forward

✓
✓
✓
✓
✓
✓
N/A
✓
✓
✓

Printed license hand-edited

MEMORANDUM

To: ~~Sharla Curtis and Shelley Keen~~ *File*
From: John Beal *John Beal*
Date: April 21, 1997
Re: Water Right Permits No. 96-7980, Proof of Beneficial Use

The Proof of Beneficial Use is due for this permit on July 1, 1997. We have received new data from Fish and Game for the period October 1993 to March 1994. This is the final data they have collected.

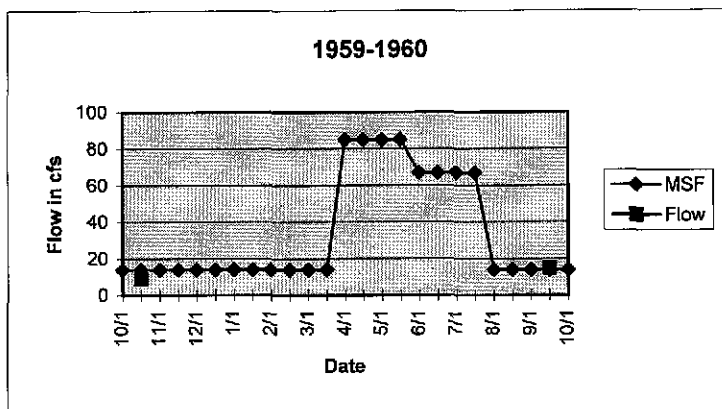
I have plotted this data and other data from 1986 to 1988 and 1959 to 1963 periods.

Do we need additional data? How much data will you need to have this permit licensed for the permitted amount? Can we request an additional extension of time (the Board received an extension in 1992).

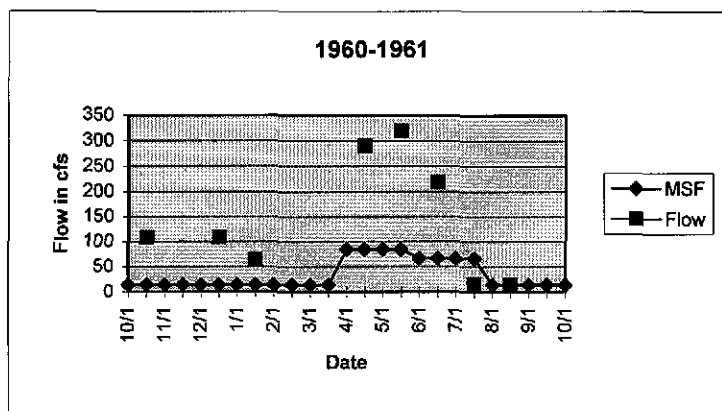
The 1986 to 1988 data was in a very dry period.

If you were to issue a license based upon this data, what would be the quantities.

59-60	MSF	Flow
10/1	14	9
	14	
11/1	14	
	14	
12/1	14	
	14	
1/1	14	
	14	
2/1	14	
	14	
3/1	14	
3/31	14	
4/1	85	
	85	
5/1	85	
5/31	85	
6/1	67	
	67	
7/1	67	
7/31	67	
8/1	14	
	14	
9/1	14	
	14	
10/1	14	14.8



60-61	MSF	Flow
10/1	14	108
	14	
11/1	14	
	14	
12/1	14	
	14	109
1/1	14	
	14	
2/1	14	
	14	
3/1	14	63.9
3/31	14	
4/1	85	
	85	
5/1	85	
5/31	85	290
6/1	67	
6/30	67	
7/1	67	
7/31	67	
8/1	14	16.1
	14	
9/1	14	
	14	
10/1	14	



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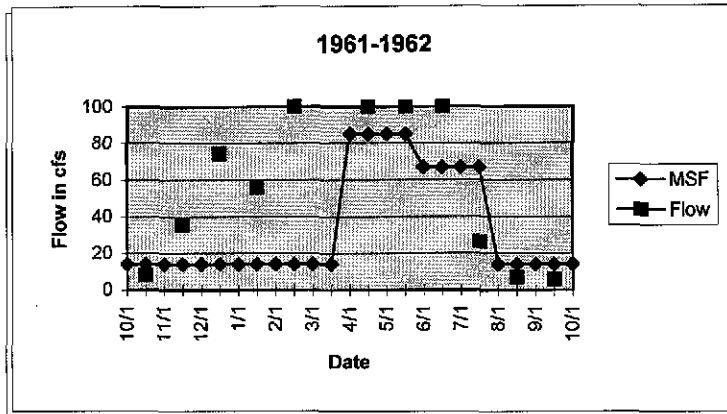
61-62	MSF	Flow
10/1	14	
	14	8.1
11/1	14	
	14	35.7
12/1	14	
	14	74.5
1/1	14	
	14	55.8
2/1	14	
	14	100
3/1	14	
3/31	14	
4/1	85	
	85	100
5/1	85	
5/31	85	100
6/1	67	
6/30	67	100
7/1	67	
7/31	67	26.4
8/1	14	
	14	6.8
9/1	14	
	14	5.7
10/1	14	

161

303

804

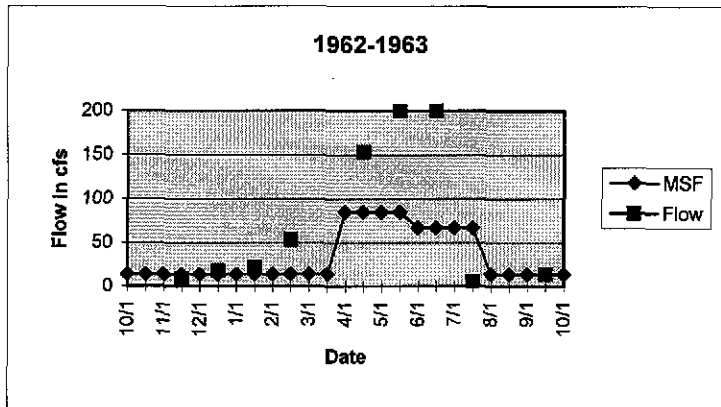
697



62-63	MSF	Flow
10/1	14	
	14	
11/1	14	
	14	8.7
12/1	14	
	14	18.3
1/1	14	
	14	21.8
2/1	14	
	14	53.2
3/1	14	
3/31	14	
4/1	85	
	85	153
5/1	85	
5/31	85	200
6/1	67	
6/30	67	200
7/1	67	
7/31	67	6
8/1	14	
	14	
9/1	14	
	14	14
10/1	14	

328

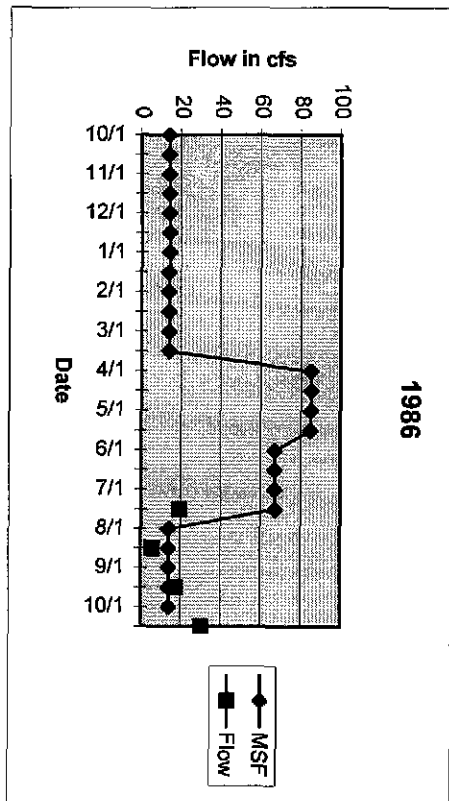
430



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JUN 10 1997

MSF	Flow
10/1	14
11/1	14
12/1	14
1/1	14
2/1	14
3/1	14
3/31	14
4/1	85
5/1	85
5/31	85
6/1	67
6/30	67
7/1	67
7/31	67
8/1	14
9/1	14
10/1	14

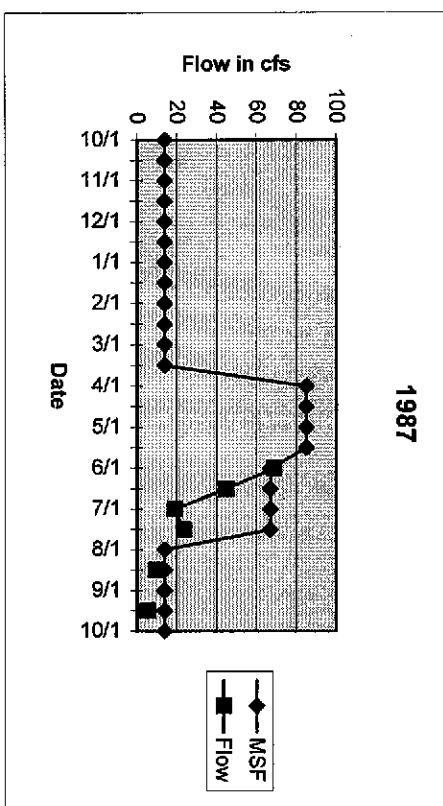
19
5.7
17.2
30



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JUN 10 1987

1987

MSF	Flow
10/1	14
11/1	14
12/1	14
1/1	14
2/1	14
3/1	14
3/31	14
4/1	85
5/1	85
5/31	85
6/1	67
6/30	67
7/1	67
7/31	67
8/1	14
9/1	14
10/1	14



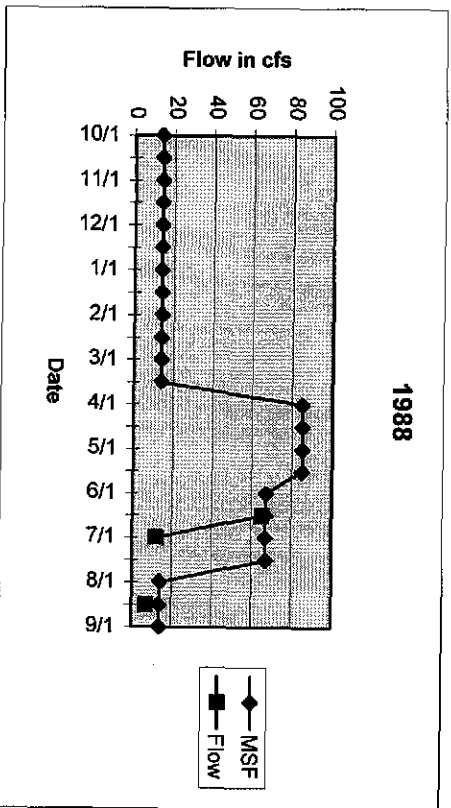
MICROFILMED
JUN 10 1997

1988

MSF

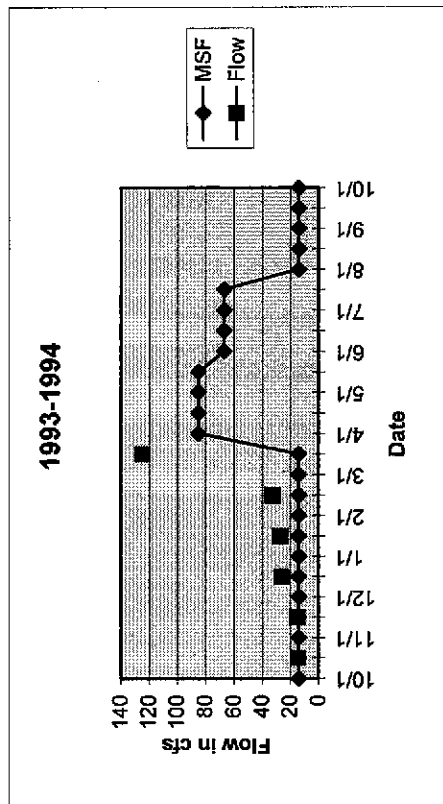
Flow

10/1	14	
11/1	14	
12/1	14	
1/1	14	
2/1	14	
3/1	14	
3/31	14	
4/1	85	
5/1	85	
5/31	85	
6/1	67	64.9
6/30	67	
7/1	67	12
7/31	67	
8/1	14	
9/1	14	7.1
10/1	14	



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93-94	MSF	Flow
10/1	14	14
11/1	14	14.2
12/1	14	15
1/1	14	26.2
2/1	14	27.2
3/1	14	32.5
3/31	14	124.5
4/1	85	
5/1	85	
5/31	85	
6/1	67	
6/30	67	
7/1	67	
7/31	67	
8/1	14	
9/1	14	
10/1	14	
11/1	14	
12/1	14	



JUN 10 1987

RECEIVED

10/1

Grouse Creek Stream Flows

Stream flows in Grouse Creek were measured monthly from October 1993 through March 1994. Due to ice and snow conditions during the December through February period, flow measurements were made approximately one mile upstream from the gage site (the standard site). Only one small, intermittent tributary enters Grouse Creek between the two sites, and was not expected to significantly influence flows. The alternate measuring site was less than desirable for taking measurements because of its location on an outside bend of the creek, but it was the only open water available.

Calculated stream flows were lowest in October and November, then increased with accumulated snowpack (Table 6). Peak flow occurred in March with the advent of spring runoff. Mild winter conditions probably contributed to the increased flows during the winter months.

Local Working Committees

During the reporting period I participated in 24 Local Working Committee (LWC) meetings for eight different LWCs, which cover 13 Stream Segments of Concern (SSOC). Two of the SSOC, Trestle Creek and the Moyie River, were newly designated in 1993. I was unable to attend the Buck Creek LWC meeting due to scheduling conflicts.

By far the most effort was required for the Trestle Creek LWC, which resulted in significant new site-specific BMPs (SSBMPs) (Table 7). The Trestle Creek LWC was comprised of a number of residents with strong concerns about the status of bull trout in the watershed. Trestle Creek is the most important bull trout spawning tributary to Lake Pend Oreille, and probably supports the highest densities of spawning bull trout in Idaho (Horner, personal communication). Because the LWC was informed the Forest Service would be conducting a comprehensive watershed survey in Trestle Creek in 1994, SSBMPs were adopted on an interim basis, with the objective of "fine tuning" them following completion of the Forest Service study.

Significant new SSBMPs were also adopted for the Lakeview streams, which are also important for bull trout spawning (Table 7). A major objective for both the Trestle Creek and Lakeview SSOC was to ensure long-term recruitment of large organic debris for habitat and channel stability purposes. Thus, site-specific riparian management plans are required for both areas.

The most significant result from the Moyie River LWC was an increase (to a 25-foot minimum) in the Class II stream protection zone (SPZ) with a requirement for retention of unmerchantable timber. The Idaho Forest Practices Committee, however, has since adopted a 30-foot minimum SPZ for Class II streams, thus the only significant change is the requirement for retention of unmerchantable timber.

JUN 10 1997

Table 6. Calculated stream flow measurements for Grouse Creek, October 1993 through March 1994.

Date	Estimated flow (cfs)
10/14/93	14.2
11/19/93	15.0
12/14/93	26.2
1/11/94	27.2
2/18/94	32.5
3/23/94	124.5

Note: December, January, and February flow measurements made at an alternate site due to ice conditions.

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GROUSE CREEK FLOW MEASUREMENTS

<u>1986</u>		
Date	Gage Ht.	Q
7/24	0.54	19.0
8/15	0.38	5.7
9/19	0.49	17.2
10/15	0.66	30.0

<u>1987</u>		
Date	Gage Ht.	Q
6/12	0.98	68.6
6/26	0.81	44.7
7/13	0.62	19.0
7/23	0.67	23.5
8/21	0.48	9.5
9/11	0.38	5.8

<u>1988</u>		
Date	Gage Ht.	Q
6/17	0.95	64.9
7/12	0.63	19.6
8/9	NR	7.1

<u>1989</u>		
Date	Gage Ht.	Q
ND	ND	ND

<u>1990</u>		
Date	Gage Ht.	Q
8/2	NR	4.9

NORTH FORK GROUSE CREEK

<u>1989</u>		
Date	Gage Ht.	Q
9/1	NR	3.6
10/26	NR	4.4

<u>1990</u>		
Date	Gage Ht.	Q
6/27*	NR	36.9

* Flow data from other sites on North Fork Grouse Creek for 6/27/90 ~ 15 cfs.

LIGHTNING CREEK

<u>1987</u>		
Date	Gage Ht.	Q
8/24	7.5	20.5
9/21	NR	6.4
10/16	3.04	4.7

<u>1988</u>		
Date	Gage Ht.	Q
7/13	NR	38.9
8/8	NR	17.4

N.R. = Not recorded

All Q in cfs

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TABLE 1. GROUSE CREEK, Miscellaneous Measurements During Month (cfs)

Water Year	¹⁴ <u>Oct</u>	¹⁴ <u>Nov</u>	¹⁴ <u>Dec</u>	¹⁴ <u>Jan</u>	¹⁴ <u>Feb</u>	¹⁴ <u>Mar</u>	⁸⁵ <u>Apr</u>	⁸⁵ <u>May</u>	⁶⁷ <u>Jun</u>	⁶⁷ <u>Jul</u>	¹⁴ <u>Aug</u>	¹⁴ <u>Sep</u>
1959	<u>9.0</u>											14.6
1960	108		109	63.9			290	319	219	<u>16.1</u>	14.4	
1961	<u>8.1</u>	35.7	74.5	55.8	161		303	884	697	<u>26.4</u>	<u>6.8</u>	<u>5.7</u>
1962		<u>8.7</u>	18.3	21.8	53.2		153	328	430	<u>5.0</u>		14.0
1963	24.7		88.8	62.9	111	80.9		484	58.6	<u>12.5</u>		<u>4.3</u>
1964	<u>6.8</u>	243	40.3		12.5	30.9	290	1060	264	<u>33</u>		<u>12.1</u>
1965	24		100	57.1		103	646		342	<u>21.8</u>		<u>13.1</u>
1974												<u>9.1</u>
1975												38.8
1976												27.6
1977						32	182*	230*		91	15	
1978											<u>6.3</u>	
1979												
1980												<u>7.6</u>

* Average of several measurements



State of Idaho
DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000

Phone: (208) 327-7900 FAX: (208) 327-7866

CECIL D. ANDRUS
GOVERNOR

R. KEITH HIGGINSON
DIRECTOR

June 16, 1992

Idaho Water Resource Board
1301 North Orchard
Statehouse Mail
Boise, ID 83720

Re: Permit No. ~~96~~-07980

Dear Permit Holder:

Enclosed is a copy of the approved request for extension of time. The time within which to submit proof of beneficial use is extended to July 1, 1997. Please note that the department has granted this extension based on due diligence. It is important that you work diligently toward the completion of this project during the construction period allowed. The department may not be able to grant additional requests.

If you have any questions or if I can be of any further assistance, please feel free to contact this office.

Sincerely,

A handwritten signature in cursive script that reads "Karen L. Gustafson".

Karen L. Gustafson
Secretary/Records Manager

Enclosure

C: IDWR-Regional Office

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JUN 29 1992

ANALYSIS SHEET
FOR
EXTENSION OF TIME

Permit No. 96-07980 Reviewed by Klg Date 6/15/92

BASIC INFORMATION

5/20/92 Date stamp received
yes Extension received timely
NA Fee received and receipted
yes Name and signature same as permit
no Address Change

BASIS FOR EXTENSION REQUEST

yes Has adequate work been completed to demonstrate due diligence?
Has the permit been involved in litigation?
Is supporting documentation needed to complete the file? Requested?
Is delay by a government agency?
Is supporting documentation needed to complete the file? Requested?
Is the project more than 25,000 acre feet for irrigation or 10,000 acre feet for a reservoir?

ACTION TAKEN

approve Based on due diligence - extend to 6/24/97

PRIORITY CALCULATION

Date extension received	<u>NA</u>	=	
Proof due date		=	
Number of days late		=	
Priority date		=	
New Priority Date		=	

DATA ENTRY

New Address _____
Change Proof Due Date 6/16/92 Klg
Change Priority Date _____

Form 804
11-91

For Office Use Only
\$15 Fee Received by _____
Date _____
Receipt No. _____

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

REQUEST FOR EXTENSION OF TIME
TO PROVIDE ADDITIONAL TIME IN WHICH TO SUBMIT PROOF OF
BENEFICIAL USE FOR A WATER RIGHT PERMIT

The Idaho Department of Water Resources will consider this form as a request that the permit holder(s) be granted an additional period of time in which to complete development of water right under the provisions of Section 42-204, Idaho Code.

Permit No. 96-7950

Name(s) of Permit Holder: Idaho Water Resource Board

Mailing Address: Statehouse, Boise, ID 83720

Date Proof Is Due 24 June 1992

Telephone No. 327-7900

Describe what work has been completed toward the development of this water right:
(This must be filled out! If no work has been completed, show "none".)

Some flow data has been collected, primarily for the period of June through
September.

Costing \$ _____

The permit holder(s) has been unable to complete the remainder of the work for the following reasons:

Existing flow data was submitted to Water Allocation staff for examination, and was
determined to be incomplete. Additional time is required to complete data collection.

Permit holder(s) request an extension to 24 June 19 97

FEE: \$15.00

F. James Zschalig
(Signature)*

*If other than permit holder, Power of Attorney must be supplied.

ACTION OF THE DEPARTMENT OF WATER RESOURCES

IT IS HEREBY ORDERED that the above request for extension of time be

MICROFILMED

JUN 29 1992

Signed this _____ day _____ 19 _____

MEMORANDUM

TO: BILL GRAHAM

GARY SPACKMAN *Gary*

FROM: GEORGE AUSTIGUY *GA*

RE: MINIMUM STREAM FLOW DATA ON GROUSE CREEK

DATE: APRIL 15, 1992

I have reviewed the flow data provided by Fish and Game for Grouse Creek and found it to be deficient in the frequency of measurements.

The order to adopt the minimum stream flow identifies a period of use of January 1 through December 31. The data provided addresses only a portion of the year, primarily June through September. Compliance with the order requires stream flows for each month of the year.

I recommend an extension be requested so that flow data can be acquired for the period of use identified in the decision.

RECEIVED
APR 22 1994

Bill

4/15

- DATA FOR LIGHTNING CREEK
LOOKS OKAY

- Grouse creek Data is
Deficient, Flow Data is
needed for all 12 months
(year would be
sufficient)

- George

Gary -

(1) Attached flow data for
MSF proofs of bene. use
on Lightning + Grouse
Creeks. Is this adequate?

(2) Has George finished
his flow determinations
for E. Fk. Rock Cr.?

Bill G.



IDAHO FISH & GAME

600 South Walnut / Box 25
Boise, Idaho 83707

March 20, 1992

Mr. Bill Graham
Idaho Department of Water Resources
STATEHOUSE MAIL
Boise, Idaho 83720

Re: Grouse and Lightning creeks flow data for minimum flow applications
96-7980 and 96-7979.

Dear Bill:

Enclosed are the flow data collected by Idaho Department of Fish and Game (IDFG) personnel as part of the permit approval conditions for the above-referenced minimum stream flow permits. Data collected by IDFG were collected during the current drought cycle and may not accurately reflect water conditions in the drainages during normal water years.

I have also included data collected by U.S. Geological Survey (USGS) personnel to supplement our records. Please review these data to determine if they are sufficient to meet the conditions of the above-referenced permits. If they are insufficient, please notify me as soon as possible, and I will submit a request for extension of time to provide additional data.

Thank you in advance for your assistance. If I can provide additional information, please call me at 334-2597.

Sincerely,

Cindy Robertson
Fishery Biologist

CR:kdd

Enclosures

cc: Chip Corsi, Region 1

Cecil D. Andrus / Governor
Jerry M. Conley / Director



Working for wildlife - since 1938

RECEIVED

APR 22 1994

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

293

TEMPER- ATURE (DEG C)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)
KOOTENAI RIVER BASIN--Continued												
12316800 - MISSION CREEK NEAR COPELAND, IDAHO (LAT 48 55 54 LONG 116 20 00)												
5.0	OCT , 1977						MAY , 1978					
	03...	1005	4.8	54	3.5	5.5	16...	1435	281	26	14.5	7.0
6.5	NOV						17...	1355	224	22	18.0	8.0
	14...	1100	7.1	34	6.0	3.5	JUL					
16.0	JAN , 1978						10...	1200	20	27	18.5	13.5
	11...	1435	5.0	32	-2.0	.0	SEP					
13.5	MAR						08...	1345	6.3	35	14.0	12.5
	07...	1220	4.5	35	7.0	1.5						
12321000 - SMITH CREEK NEAR PORTHILL IDAHO (LAT 48 57 40 LONG 116 33 15)												
	SEP , 1978											
	11...	1150	65	16	18.5	11.0						
12321500 - BOUNDARY CREEK NEAR PORTHILL, IDAHO (LAT 48 59 50 LONG 116 34 05)												
7.5	OCT , 1977						MAY , 1978					
	03...	1200	36	45	8.0	6.0	16...	1240	1110	22	16.0	6.5
16.5	DEC						JUL					
	01...	1230	54	41	2.0	.0	10...	1020	158	26	18.5	14.0
12.0	JAN , 1978						SEP					
	10...	1355	39	38	1.0	1.0	11...	1050	82	34	17.5	10.5
	APR											
	12...	1110	235	30	13.5	4.0						
PEND OREILLE RIVER BASIN												
12336000 - NEVADA CREEK NEAR FINN, MT (LAT 46 48 00 LONG 112 48 00)												
	SEP , 1978											
	09...	1900	883	30	19.0	15.5						
12392000 - CLARK FORK AT WHITEHORSE RAPIDS, NEAR CABINET, I (LAT 48 05 18 LONG 116 04 16)												
6.0	OCT , 1977						MAY , 1978					
	06...	0950	14800	220	9.5	10.0	22...	1300	9200	130	10.0	9.5
9.5	DEC						JUL					
	08...	1030	14900	181	4.0	7.5	21...	0915	35100	155	19.0	17.0
20.5	FEB , 1978						SEP					
	08...	1500	22100	169	8.5	2.0	07...	1140	17400	252	19.0	19.0
14.0	APR											
	11...	1240	31200	150	16.0	17.0						
12392100 - TRAPPER CREEK NEAR CLARK FORK, IDAHO (LAT 48 15 57 LONG 116 07 00)												
16.5	MAY , 1978						AUG , 1978					
	22...	1140	31	10	10.0	4.0	11...	0950	.01	22	23.0	21.0
12392155 - LIGHTNING CR AT CLARK FORK ID (LAT 48 08 52 LONG 116 11 24)												
6.0	AUG , 1978											
	11...	1040	25	25	23.0	19.0						
15.5												
11.0												
12392350 - GROUSE CR NR COLBURN ID (LAT 48 28 36 LONG 116 26 10)												
	AUG , 1978											
	11...	1236	6.2	34	23.0	19.0						
12392450 - RAPID LIGHTNING CR NR COLBURN ID (LAT 48 21 55 LONG 116 24 05)												
	AUG , 1978											
	11...	1200	32	35	23.0	19.0						
12392800 - HORNBY CREEK NEAR DOVER IDAHO (LAT 48 15 10 LONG 116 37 50)												
	AUG , 1978											
	11...	1330	.98	33	25.0	19.0						

APR 22 1994

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in a low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both high and low flow are given in a third table.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1976

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Bear River basin						
10091130	Swan Lake Creek near Swan Lake	Lat 42°20'31", long 111°59'05", in NE¼ sec.35, T.12 S., R.38 E., Bannock County, at county road crossing and 2.2 mi (3.5 km) north of Swan Lake.	-	1973-76	9- 9-76	.86
Tributaries between Great Salt Lake Desert and Bear River						
10172970	Rock Creek near Holbrook	Lat 42°13'51", long 112°43'45", in NW¼ sec.9, T.14 S., R.32 E., Oneida County, at county road crossing and 6.0 mi (9.7 km) northwest of Holbrook.	a44	1962-71b, 1973-76	9-10-76	1.42
Kootenai River basin						
12306800	Round Prairie Creek near Eastport	Lat 48°57'53", long 116°11'52", in SW¼ sec.21, T.65 N., R.2 E., Boundary County, Kaniksu National Forest, 0.4 mi (0.6 km) downstream from Robinson Lake, 2.5 mi (4.1 km) south of Eastport, and at mile 2.5 (4.1 km).	-	1974-76	9- 8-76	5.40
12310800	Trail Creek at Naples	Lat 48°34'28", long 116°23'20", in SW¼ sec.6, T.60 N., R.1 E., Boundary County, at railroad culvert, 0.4 mi (0.6 km) upstream from mouth, and at Naples.	a15	1961-71b, 1973-76b	9- 8-76	1.80
12321000	Smith Creek near Porthill	Lat 48°57'40", long 116°33'20", in SE¼ sec.26, T.65 N., R.2 W., Boundary County, Kaniksu National Forest, at forest bridge, 1.0 mi (1.6 km) south of Smith Creek ranger station, and 4.0 mi (6.4 km) southwest of Porthill.	a70	1928-61, 1973, 1975-76	9- 8-76	71.4
Pend Oreille River basin						
12392100	Trapper Creek near Clark Fork	Lat 48°15'57", long 116°07'00", in NE¼ sec.30, T.57 N., R.3 E., Bonner County, Kaniksu National Forest, at U.S. Forest Service road and 9.8 mi (15.7 km) north of Clark Fork.	1.12	1962-71b, 1974-76b	9- 9-76	.01
12392155	Lightning Creek at Clark Fork	Lat 48°08'52", long 116°11'24", in NW¼ sec.3, T.55 N., R.2 E., Bonner County, 100 ft (305 m) downstream from W.P. Railroad bridge, 1,600 ft (488 m) upstream from mouth, and 0.5 mi (0.8 km) west of Clark Fork.	a100	1974-76	9- 9-76	72.7
12392350	Grouse Creek near Colburn	Lat 48°20'36", long 116°26'10", in NE¼ sec.2, T.58 N., R.1 W., Bonner County, 2.0 mi (3.2 km) upstream from mouth and 4.0 mi (6.4 km) east of Colburn.	55.6	1958-65, 1974-76	9- 9-76	27.6
12392450	Rapid Lightning Creek near Colburn	Lat 48°21'55", long 116°24'05", in SE¼ sec.24, T.58 N., R.1 W., Bonner County, 0.3 mi (0.5 km) upstream from mouth and 6.0 mi (9.6 km) southeast of Colburn.	-	1958-65, 1974-76	9- 9-76	17.8
12392800	Hornby Creek near Dover	Lat 48°15'10", long 116°37'50", in SW¼ sec.30, T.57 N., R.2 W., Bonner County, at U.S. Highway 2 crossing and 1.2 mi (1.9 km) west of Dover.	a2.2	1961-71b, 1975-76	9-10-76	2.29
12392854	Brickell Creek near Spirit Lake	Lat 47°56'10", long 116°56'59", in NW¼ sec.15, T.53 N., R.5 W., Kootenai County, 0.7 mi (1.1 km) upstream from mouth and 4.5 mi (7.2 km) southwest of Spirit Lake.	-	1973-75	9-10-76	6.84
12392892	Blanchard Creek near Blanchard	Lat 47°59'32", long 117°04'14", in SE¼ sec.23, T.29 N., R.45 E. (Willamette meridian), Spokane County, Wash., at confluence with North Fork, 1.3 mi (2.1 km) west of Idaho-Washington State line, and 5.8 mi (9.3 km) southwest of Blanchard.	-	1973-76	9-11-76	.20
12392950	Indian Creek near Coolin	Lat 48°37'37", long 116°49'14", in NW¼ sec.23, T.61 N., R.4 W., Bonner County, Kaniksu National Forest, 1.5 mi (2.4 km) upstream from mouth and 11 mi (18 km) north of Coolin.	20	1948, 1973, 1975-76	10- 9-75, 9- 9-76	23.3, 26.9

See footnotes at end of table, p. 540.

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ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES

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WATER QUALITY DATA, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	AIR TEMPER- ATURE (DEG C)	DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	AIR TEMPER- ATURE (DEG C)
KOOTENAI RIVER BASIN--Continued											
12321500 - BOUNDARY CREEK NEAR PORTHILL, IDAHO (LAT 48 59 50 LONG 116 34 05)											
OCT . 1975						APR . 1976					
01...	1035	29	34	7.5	21.0	09...	1125	236	27	2.0	8.0
NOV						JUL					
18...	1015	--	24	.0	10.0	01...	1405	446	18	10.0	23.0
DEC						SEP					
23...	1325	149	25	1.0	10.0	08...	1220	102	24	18.0	21.5
PEND OREILLE RIVER BASIN											
12392000 - CLARK FORK AT WHITEHORSE RAPIDS, NEAR CABINET, I (LAT 48 05 18 LONG 116 04 16)											
OCT . 1975						MAY . 1976					
10...	0935	22100	201	13.0	9.0	12...	0920	95900	127	10.5	13.0
DEC						JUN					
16...	1115	--	116	4.0	4.0	24...	1445	52000	131	13.5	18.5
19...	1030	34700	134	2.5	1.0	SEP					
JAN . 1976						21...	1500	6770	200	26.5	23.0
30...	0855	32700	210	2.0	11.0						
MAR											
16...	1050	29900	194	4.0	5.0						
12392100 - TRAPPER CREEK NEAR CLARK FORK, IDAHO (LAT 48 15 57 LONG 116 07 00)											
MAY . 1976						SEP . 1976					
12...	1415	24	20	5.0	18.0	09...	0920	.00	17	7.0	9.5
JUN											
28...	1310	3.5	14	6.0	15.5						
12392155 - LIGHTNING CR AT CLARK FORK ID (LAT 48 08 52 LONG 116 11 24)											
SEP . 1976											
09...	1015	73	28	9.5	16.0						
12392350 - GROUSE CR NR COLBURN ID (LAT 48 20 36 LONG 116 26 10)											
SEP . 1976											
09...	1230	28	32	12.5	21.0						
12392450 - RAPID LIGHTNING CR NR COLBURN ID (LAT 48 21 55 LONG 116 24 05)											
SEP . 1976											
09...	1340	18	40	12.0	23.0						
12392800 - HORNBY CREEK NEAR DOVER IDAHO (LAT 48 15 10 LONG 116 37 50)											
SEP . 1976											
10...	0825	2.3	42	9.0	15.0						
12392854 - BRICKEL CREEK NEAR SPIRIT LAKE IDAHO (LAT 47 56 10 LONG 116 56 59)											
SEP . 1976											
10...	1230	6.8	37	9.0	25.0						
12392892 - BLANCHARD CR NR BLANCHARD ID (LAT 47 59 32 LONG 117 04 14)											
SEP . 1976											
10...	1055	.20	106	12.5	18.0						
12392950 - INDIAN CREEK NEAR COOLIN IDAHO (LAT 48 37 37 LONG 116 49 14)											
OCT . 1975						SEP . 1976					
09...	1100	23	14	5.0	9.5	09...	1345	27	13	7.0	24.5
12393500 - PRIEST R AT OTLT OF PRST LKE, N COOLIN, IDAHO (LAT 48 29 00 LONG 116 54 00)											
JUL . 1976											
12...	1445	66	14	12.0	17.0						

APR 22 1994

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Discharge measurements made at low-flow partial-record stations during water year 1975

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
Bear River basin						
10091130	Swan Lake Creek near Swan Lake	Lat 42°20'31", long 111°59'05", in NE¼NW¼ sec.35, T.12 S., R.38 E., Bannock County, at county road crossing and 2.2 mi (3.5 km) north of Swan Lake.	-	1973-75	9-19-75	1.45
Tributaries between Great Salt Lake Desert and Bear River						
10172970	Rock Creek near Holbrook	Lat 42°13'51", long 112°43'45", in NW¼ sec.9, T.14 S., R.32 E., Oneida County, at county road crossing and 6.0 mi (9.7 km) northwest of Holbrook.	a44	1962-71b, 1973-75	9-20-75	4.45
Kootenai River basin						
12306800	Round Prairie Creek near Eastport	Lat 48°57'53", long 116°11'52", in SW¼SE¼ sec.21, T.65 N., R.2 E., Boundary County, Kaniksu National Forest, 0.4 mi (0.6 km) downstream from Robinson Lake, 2.5 mi (4.1 km) south of Eastport, and at mile 2.5 (4.1 km).	-	1974-75	10- 1-74 8-27-75	27.9 5.77
12310800	Trail Creek at Naples	Lat 48°34'28", long 116°23'20", in SW¼SW¼ sec.6, T.60 N., R.1 E., Boundary County, at railroad culvert, 0.4 mi (0.6 km) upstream from mouth, and at Naples.	a16	1961-71b, 1973-75b	10-30-74 8-22-75	.56 .42
12321000	Smith Creek near Porthill	Lat 48°57'40", long 116°33'20", in SE¼NW¼ sec.26, T.65 N., R.2 W., Boundary County, Kaniksu National Forest, at forest bridge, 1.0 mi (1.6 km) south of Smith Creek ranger station, and 4.0 mi (6.4 km) southwest of Porthill.	a70	1928-61d, 1973,1975	10-23-74 8-21-75	11.8 29.8
Pend Oreille River basin						
12392100	Trapper Creek near Clark Fork	Lat 48°15'57", long 116°07'00", in NE¼ sec.30, T.57 N., R.3 E., Bonner County, Kaniksu National Forest, at U.S. Forest Service road and 9.8 mi (15.7 km) north of Clark Fork.	1.12	1962-71b, 1974-75	9-27-74 9- 3-75	0 .07
12392155	Lightning Creek at Clark Fork	Lat 48°08'52", long 116°11'24", in NW¼SW¼ sec.3, T.55 N., R.2 E., Bonner County, 100 ft (305 m) downstream from N.P. Railroad bridge, 1,600 ft (488 m) upstream from mouth, and 0.5 mi (0.8 km) west of Clark Fork.	a100	1974-75	9- 3-75	99.2
12392800	Hornby Creek near Dover	Lat 48°15'10", long 116°37'50", in SW¼SW¼ sec.30, T.57 N., R.2 W., Bonner County, at U.S. Highway 2 crossing and 1.2 mi (1.9 km) west of Dover.	a2.2	1961-71b,	9- 5-75	4.17
12392350	Grouse Creek near Colburn	Lat 48°20'36", long 116°26'10", in NE¼NW¼ sec.2, T.58 N., R.1 W., Bonner County, 2.0 mi (3.2 km) upstream from mouth and 4.0 mi (6.4 km) east of Colburn.	53.6	1958-65, 1974-75	9- 5-75	30.8
12392450	Rapid Lightning Creek near Colburn	Lat 48°21'55", long 116°24'05", in SE¼SW¼ sec.24, T.58 N., R.1 W., Bonner County, 0.3 mi (0.5 km) upstream from mouth and 6.0 mi (9.6 km) southeast of Colburn.	-	1958-65, 1974-75	9- 5-75	21.3
12392854	Brickel Creek near Spirit Lake	Lat 47°56'10", long 116°56'59", in NW¼SE¼ sec.15, T.53 N., R.5 W., Kootenai County, 0.7 mi (1.1 km) upstream from mouth and 4.5 mi (7.2 km) southwest of Spirit Lake.	-	1973-75	9- 3-75	8.38
12392892	Blanchard Creek near Blanchard	Lat 47°59'32", long 117°04'14", in SE¼NE¼ sec.23, T.29 N., R.45 E. (Willamette meridian), Spokane County, Wash., at confluence with North Fork, 1.3 mi (2.1 km) west of Idaho-Washington State line, and 5.8 mi (9.3 km) southwest of Blanchard.	-	1973-75	9- 3-75	6.54
12392950	Indian Creek near Coolin	Lat 48°37'37", long 116°49'14", in NW¼SE¼ sec.23, T.61 N., R.4 W., Bonner County, Kaniksu National Forest, 1.5 mi (2.4 km) upstream from mouth and 11 mi (18 km) north of Coolin.	20	1948,1973, 1975	10-30-74	5.52

See footnotes at end of table, p. 301.

APR 22 1994

State of Idaho
Department of Fish and Game
2320 Government Way
Coeur d'Alene, ID 83814

March 5, 1992

M E M O R A N D U M

FROM: CHIP CORSI 
Environmental Staff Biologist

TO: CINDY ROBERTSON
Senior Fishery Research Biologist

SUBJECT: FLOW MEASUREMENTS

Attached is a summary of the flow data in the files for Grouse and Lightning creeks. I hope this is what you're looking for--if not holler and I'll get (or try to, anyway) whatever else it is you need.

CEC:njk

Attachment

Attached are data collected by IDFG personnel from 1986 to 1990 in the Grouse and Lightning Creek drainages. The data from Grouse Creek were collected approximately 15 yards below the county road bridge (sect. 2, T58N, R1W). The data for Lightning Creek were collected approximated 75 yards below the Highway 200 bridge. (The data for the North Fork Grouse Creek are not relevant to the Grouse Creek flow data.)

RECEIVED

APR 22 1994

MAR 13 1992

GROUSE CREEK FLOW MEASUREMENTS

<u>1986</u>		
Date	Gage Ht.	Q
7/24	0.54	19.0
8/15	0.38	5.7
9/19	0.49	17.2
10/15	0.66	30.0

<u>1987</u>		
Date	Gage Ht.	Q
6/12	0.98	68.6
6/26	0.81	44.7
7/13	0.62	19.0
7/23	0.67	23.5
8/21	0.48	9.5
9/11	0.38	5.8

<u>1988</u>		
Date	Gage Ht.	Q
6/17	0.95	64.9
7/12	0.63	19.6
8/9	NR	7.1

<u>1989</u>		
Date	Gage Ht.	Q
ND	ND	ND

<u>1990</u>		
Date	Gage Ht.	Q
8/2	NR	4.9

NORTH FORK GROUSE CREEK

<u>1989</u>		
Date	Gage Ht.	Q
9/1	NR	3.6
10/26	NR	4.4

<u>1990</u>		
Date	Gage Ht.	Q
6/27*	NR	36.9

* Flow data from other sites on North Fork Grouse Creek for 6/27/90 $\approx$ 15 cfs.

LIGHTNING CREEK

<u>1987</u>		
Date	Gage Ht.	Q
8/24	7.5	20.5
9/21	NR	6.4
10/16	3.04	4.7

<u>1988</u>		
Date	Gage Ht.	Q
7/13	NR	38.9
8/8	NR	17.4

N.R. = Not recorded

All Q in cfs

APR 22 1994

MEMORANDUM

TO: BILL GRAHAM

GARY SPACKMAN *Gary*

FROM: GEORGE AUSTIGUY *GA*

RE: MINIMUM STREAM FLOW DATA ON GROUSE CREEK 96-7980

DATE: APRIL 15, 1992

I have reviewed the flow data provided by Fish and Game for Grouse Creek and found it to be deficient in the frequency of measurements.

The order to adopt the minimum stream flow identifies a period of use of January 1 through December 31. The data provided addresses only a portion of the year, primarily June through September. Compliance with the order requires stream flows for each month of the year.

I recommend an extension be requested so that flow data can be acquired for the period of use identified in the decision.

MICROFILMED

JUN 29 1992

IN THE HOUSE OF REPRESENTATIVES

HOUSE CONCURRENT RESOLUTION NO. 42

BY RESOURCES AND CONSERVATION COMMITTEE

1 A CONCURRENT RESOLUTION
2 APPROVING AN APPLICATION TO APPROPRIATE WATER FOR MINIMUM STREAMFLOW.

3 Be It Resolved by the Legislature of the State of Idaho:

4 WHEREAS, the Idaho Water Resource Board may apply for a permit to appro-
5 priate unappropriated waters of any stream to establish a minimum streamflow;
6 and

7 WHEREAS, under the provisions of Section 42-1503, Idaho Code, an approved
8 application shall not become finally effective until acted upon by the Legis-
9 lature, except that if the Legislature fails to act prior to the end of the
10 regular session to which the application was submitted, the application shall
11 be considered approved; and

12 WHEREAS, the Director of the Department of Water Resources approved Appli-
13 cation for Permit No. 96-7980 in a Memorandum Decision and Order dated June
14 24, 1987, authorizing the appropriation of a varied rate of flow by month
15 ranging from 14 cubic feet per second to 85 cubic feet per second on a reach
16 of Grouse Creek extending from the confluence with Pack River in the
17 SE1/4SW1/4, Section 4, Twp. 58N, Rge. 1W, B.M. upstream approximately five (5)
18 miles to the county road bridge in the SE1/4NE1/4, Section 25, Twp. 59N, Rge.
19 1W, B.M., Bonner County, Idaho.

20 NOW, THEREFORE, BE IT RESOLVED by the members of the Second Regular Ses-
21 sion of the Forty-ninth Idaho Legislature, the House of Representatives and
22 the Senate concurring therein, that the approved Application for Permit No.
23 96-7980 is hereby approved subject to the conditions and limitations contained
24 in the Memorandum Decision and Order of the Director of the Department of
25 Water Resources dated June 24, 1987.

JUL 12 1988

MINIMUM INSTREAM FLOW

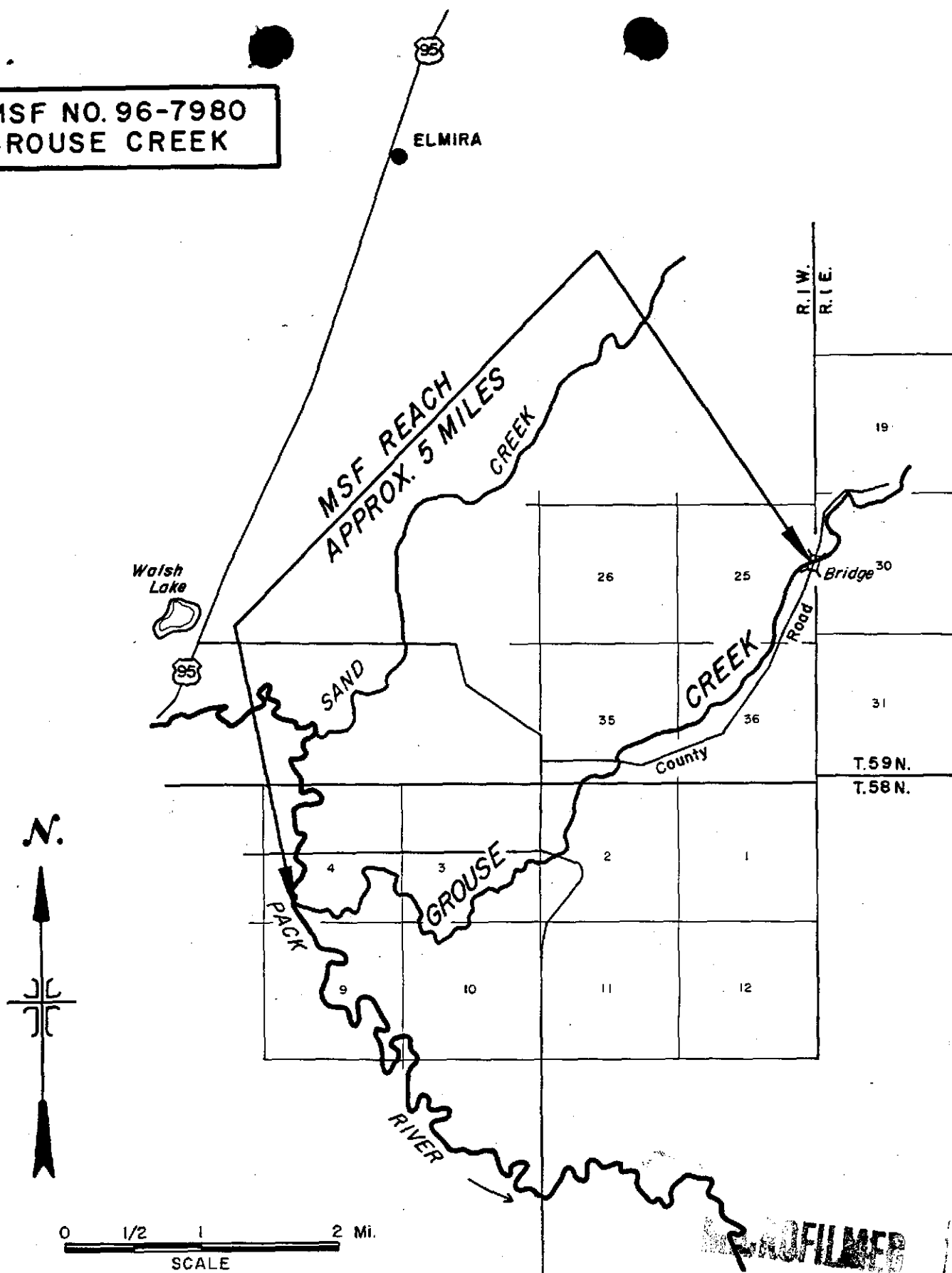
GROUSE CREEK

96-7980

- Applicant: Idaho Water Resource Board
- Sponsor: Dept. of Fish and Game
- Applic. Date: June 19, 1981
- Rate: Variable by month 14 cfs to 85 cfs
- Purpose: Maintain trout spawning and rearing
- Hearing:
 - November 16, 1983 in Sandpoint, Idaho
 - Joint hearing including Lightning Creek
(96-7979)
 - Attended by about 18 people
 - No real opposition
- Permit: Proposed decision issued April 9, 1987
Final decision issued June 24, 1987, since no
exceptions were filed.
- Special conditions:
 - Term condition to allow review of permit/license
after 15 years.
- General information
 - There are recorded water rights which total 7.26
cfs in the min str flow reach. The rights
are prior to the Board's minimum stream
flow filing.

JUL 12 1988

MSF NO. 96-7980
GROUSE CREEK



NO FILMER

JUL 12 1967

MINIMUM FLOWS (CFS)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
14	14	14	85	85	67	67	14	14	14	14	14

A CONCURRENT RESOLUTION
APPROVING AN APPLICATION TO APPROPRIATE WATER
FOR MINIMUM STREAMFLOW

Be It Resolved by the legislature of the State of Idaho:

WHEREAS, the Idaho Water Resource Board may apply for a permit to appropriate unappropriated waters of any stream to establish a minimum streamflow; and

WHEREAS, under the provisions of Section 42-1503, Idaho Code, an approved application shall not become finally effective until acted upon by the legislature, except that if the legislature fails to act prior to the end of the regular session to which the application was submitted, the application shall be considered approved; and

WHEREAS, the Director of the Department of Water Resources approved Application for Permit No. 96-7980 in a Memorandum Decision and Order dated June 24, 1987 authorizing the appropriation of a varied rate of flow by month ranging from 14 cubic feet per second to 85 cubic feet per second on a reach of Grouse Creek extending from the confluence with Pack River in the SE1/4SW1/4 Section 4, Twp. 58N, Rge. 1W, B.M. upstream approximately five (5) miles to the county road bridge in the SE1/4NE1/4, Section 25, Twp. 59N, Rge. 1W, B.M., Bonner County, Idaho.

NOW, THEREFORE, BE IT RESOLVED by the members of the Second Regular Session of the Forty Ninth Idaho Legislature, the Senate and the House of Representatives concurring therein, that the same is hereby approved subject to the conditions and limitations contained in the Memorandum Decision and Order of the Director of the Department of Water Resources dated June 24, 1987.

MICROFILMED

JUL 12 1988

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MICROFILMED

JUL 12 1988



State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 1301 North Orchard Street Boise, Idaho 83706-2237 • (208) 334-4440

CECIL D. ANDRUS
Governor

R. KEITH HIGGINSON
Director

January 13, 1987

*Received
1/14/88
js*

Senator James Risch, President
Senate Pro Tem
Statehouse
Boise, ID 83720

Re: Water Right Applications for Permit for Minimum Streamflow
Nos.: 96-7980, Grouse Creek; 41-7046, East Fork, Rock
Creek; 36-8307, Minnie Miller; 41-7074, Rock Creek, East
Fork; and 96-7979, Lightning Creek; 65-12733, South Fork and
Main Stem, Payette River.

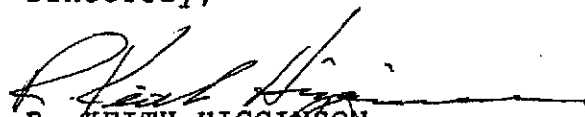
Dear Senator Risch:

Enclosed please find copies of the above referenced
Applications for Permit. Enclosed with the applications are the
decisions and orders which conclude the administrative processing
of the applications.

As you are aware, Section 42-1503, Idaho Code, requires that
the applications be reviewed by the legislature. As defined by
statute, each application "(i) shall not become finally effective
until affirmatively acted upon by concurrent resolution of the
Idaho Legislature; or (ii) except that if the legislature fails
to act prior to the end of the regular session to which the
application was submitted, the application shall be considered
approved."

This letter constitutes submittal of the applications to the
legislature for approval. Please advise me if you desire further
information or presentation on the nature of the applications.

Sincerely,


R. KEITH HIGGINSON
Director

GS:RKH:jf
Enclosures

CC: Legislative Council

RECEIVED

JUL 12 1988



State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 1301 North Orchard Street Boise, Idaho 83706-2237 • (208) 334-4440

CECIL D. ANDRUS
Governor

R. KEITH HIGGINSON
Director

January 13, 1987

Representative Tom Boyd, Speaker
House of Representatives
Statehouse
Boise, ID 83720

*Rec'd 1/14/88
C. Belman
AA to Speaker*

Re: Water Right Applications for Permit for Minimum Streamflow
Nos.: 96-7980, Grouse Creek; 41-7046, East Fork, Rock
Creek; 36-8307, Minnie Miller; 41-7074, Rock Creek, East
Fork; and 96-7979, Lightning Creek; 65-12733, South Fork and
Main Stem, Payette River.

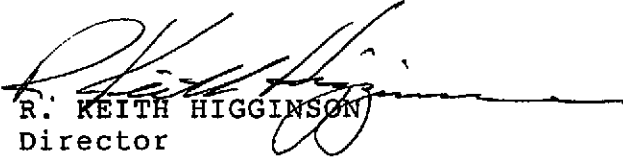
Dear Representative Boyd:

Enclosed please find copies of the above referenced
Applications for Permit. Enclosed with the applications are the
decisions and orders which conclude the administrative processing
of the applications.

As you are aware, Section 42-1503, Idaho Code, requires that
the applications be reviewed by the legislature. As defined by
statute, each application "(i) shall not become finally effective
until affirmatively acted upon by concurrent resolution of the
Idaho Legislature; or (ii) except that if the legislature fails
to act prior to the end of the regular session to which the
application was submitted, the application shall be considered
approved."

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legislature for approval. Please advise me if you desire further
information or presentation on the nature of the applications.

Sincerely,


R. KEITH HIGGINSON
Director

GS:RKH:jf
Enclosures

CC: Legislative Council

RECORDED

JUL 12 1988



State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

CECIL D. ANDRUS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

June 24, 1987

Idaho Water Resource Board
Statehouse
Boise, ID 83720

Re: Application for Permit No. 96-7980

Dear Applicant:

Enclosed is a copy of approved Application for Permit No. 96-7980 along with a copy of the Order Adopting Proposed Memorandum Decision and Order. We direct your attention to the conditions of approval as set forth in the Order.

Any person who does not agree with the decision of the Department may request a rehearing before the Director within twenty (20) days, or may appeal directly to the district court within thirty (30) days of the date of the decision is mailed.

Please note that the application will not ripen into a permit until finally approved by the Idaho Legislature.

Sincerely,

A handwritten signature in cursive script that reads "Gary Spackman".

GARY SPACKMAN, Supervisor
Water Allocation Section

GS:jf

Enclosures

CC: Protestants
(see certificate of mailing)

MICROFILMED

JUL 12 1988



State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

October 11, 1983

Robert L. Meinen, Deputy Director
Idaho Dept. of Parks and Recreation
Statehouse Mail
Boise, ID 83720

RE: Minimum Stream Flows

Dear Bob:

The purpose of this letter is to apprise you of the current status of minimum stream flow applications for permit pending action this fall.

As you are aware, one of the items on the agenda of the Idaho Water Resource board meeting on October 7, 1983, was minimum stream flows. The Board reviewed the status of the six minimum stream flow applications currently pending action. Discussion and information presented for five of the applications resulted in the adoption of a resolution calling for the Director of the Idaho Dept. of Water Resources to proceed with administrative actions on each of the applications. A copy of this resolution, which describes the water right numbers and the respective streams, is enclosed for your information. Note that Application No. 37-7892 on the Malad River, for which your agency was the requesting agency, is included in this group.

Discussion and information presented for Application No. 37-7919, Big Wood River, included the reading into the record of your letter dated October 6, 1983. Also, Mr. Ted Divine briefly presented his proposal to develop a hydropower site with a point of diversion about 1½ miles upstream from the lower end of the proposed minimum stream flow reach. Based on this information as well as the public input at the informal public meeting in Hailey on September 22, the Board resolved to hold this application pending further investigation (copy of resolution enclosed). I anticipate that Mr. Gray will be contacting you to explore the possibility of further studies on this stream.

In your letter dated October 6, 1983, you indicated that your agency was not advised of the minimum stream flow filing on the Big Wood River. Our standard processing checklist for a minimum stream flow

FILED
JUL 12 1988

Robert L. Meinen
October 11, 1983
Page 2

application calls for our regional office to send your agency a copy of any minimum stream flow application as soon as it is received. I checked on this one in particular and found that in fact it had not been so distributed. In the future we will insure that this distribution is accomplished.

The next administrative action for each of the five applications on which we have been requested to proceed is a hearing by the Director or his representative. These hearings have been tentatively scheduled as follows:

<u>App. No.</u>	<u>Source</u>	<u>Date</u>	<u>Time</u>	<u>Location</u>
37-7892	Malad River	Nov. 9	1:30 pm	Gooding
37-7920	"	"	"	"
37-7849	Silver Creek	Nov. 10	9:00 am	Hailey
37-7979	Lightning Cr.	Nov. 17	9:00 am	Sandpoint
37-7980	Grouse Creek	"	"	"

I will notify you when the details of these hearings have been confirmed.

Sincerely,

Dave

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosure

cc: Gene Gray

RECEIVED

JUL 12 1988

NOTICE OF APPLICATION FOR MINIMUM STREAM FLOW

Notice is hereby given that the Idaho Water Resource Board has on June 19, 1981, submitted two (2) Applications for Permit to the Department of Water Resources proposing the appropriation of water to preserve the minimum stream flows from the following sources of water which are further described as follows:

APPLICATION NO. 96-7979

Source: Lightning Creek, tributary to Pend Oreille Lake

Location of Minimum Streamflow Reach: SWNE Sec. 3, T55N, R02E, B.M.,
upstream approx. 8 miles to confluence with East Fork in the
SWSW Sec. 32, T57N, R03E, B.M., Bonner County.

Rate of Flow and Season of Use:	<u>Rate</u>	<u>Period of Use</u>
	49.0 CFS	8/1 to 3/31
	84.0 CFS	4/1 to 5/31
	53.0 CFS	6/1 to 7/31

Use: To maintain trout spawning and rearing habitat.

APPLICATION NO. 96-7980

Source: Grouse Creek, tributary to Pack River.

Location of Minimum Streamflow Reach: SESW Sec. 4, T58N, R01W, B.M.,
upstream approx. 5 miles to the county road bridge in the
SENE Sec. 25, T59N, R01W, B.M., Bonner County.

Rate of Flow and Season of Use:	<u>Rate</u>	<u>Period of Use</u>
	14.0 CFS	8/1 to 3/31
	85.0 CFS	4/1 to 5/31
	67.0 CFS	6/1 to 7/31

Use: To maintain trout spawning and rearing habitat.

The Director of the Department of Water Resources will hold a public hearing on the applications at 9:00 a.m., on Wednesday, November 16, 1983, in the conference room of the Federal Building, 1500 Highway #2 (Dover Highway), Sandpoint, Idaho, for the purpose of hearing evidence in regard to the applications. The hearing will be held pursuant to the provisions of Sec. 42-1503, Idaho Code.

If issued, these permits will be subject to all prior water rights. Any party who wishes to formally appear in this proceeding for the purpose of presenting evidence or cross examining witnesses should file a notice of appearance with the Director, Department of Water Resources, Statehouse, Boise, Idaho, five (5) days prior to the hearing. Other parties will be given an opportunity to informally present their views and comments without the necessity of filing a notice of appearance.

A. KENNETH DUNN
Director

Published in the Sandpoint Daily Bee on October 26 and November 2, 1983.

MICROFILMED

JUL 12 1988

State of Idaho
Department of Water Resources

APPLICATION FOR PERMIT ANALYSIS SHEET

INITIAL REVIEW BY: RSB

APPLICATION NUMBER: 967980

CHECK:

- ☒ Source.
☒ Point of diversion.
☒ County.
☒ Description of diverting works.
☒ Time required for beneficial use of water.
☒ Place of use or acres irrigated.
☒ Map.
☒ Signature.
☒ Fee.
☐ Yes ☒ No Field check required.
☐ Yes ☒ No Critical groundwater area.
☐ Yes ☒ No Request dam safety information. Sent by: _____ Date: _____
☒ Yes ☐ No* In form to receipt. NA

Field check by: _____

Date: _____

Comments: _____

*REQUEST THE FOLLOWING ADDITIONAL INFORMATION FROM THE APPLICANT: _____

SEND COPIES TO:

- ☐ Idaho State Health Department.
☐ Idaho Fish and Game Department.
☐ Idaho Department of Lands.
☐ U.S. Bureau of Land Management.
☐ U.S. Forest Service.
☐ Other _____

Copies sent by: _____ Date: _____

PROCESSING:

- ☐ Yes ☐ No Platted by: _____ Map No. _____
☐ Yes ☐ No Other rights on same place of use. _____
☒ Yes ☐ No* In form for advertising.
Final date for protests: _____
☐ Yes ☐ No Protests received. If yes, record information on 4th page of application.

FINAL REGIONAL PROCESSING REVIEW:

- ☐ Affidavit of publication received. Date: _____
☐ Application published correctly. If not, record action taken: _____
☐ Fee amount, receipt date & number, recorded on application.
☐ Publication dates and paper, recorded on application.
☐ Protests, dates, withdrawal, etc., recorded on application.
☐ Recommendation & initial, recorded on application.
☐ Yes ☐ No Measuring device required.
☐ Yes ☐ No Access port required.
☐ Yes ☐ No Will water be delivered by watermaster? If yes, what district? _____
Date of priority recommended. _____

Special conditions of approval or cover letter. _____

By: _____ Date: _____

STATE OFFICE REVIEW:

- ☐ See attached sheet for more information.

By: _____ Date: _____

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

NORTHERN REGION



Kenneth Duon
Director

Suite No. 9
4055 Government Way
Coeur d'Alene, Idaho 83814
(208) 667-6484

September 8, 1983

Sandpoint Daily Bee
P.O. Box 159
Sandpoint, Id. 83864

Gentlemen:

Enclosed is a legal notice which we would like printed in your newspaper on September 14 and 21, 1983.

After publication, please forward us an Affidavit of publication and your bill.

Thank you for your cooperation.

Sincerely,

Patricia M. Stypa
Secretary - O/C

MICROFILMED

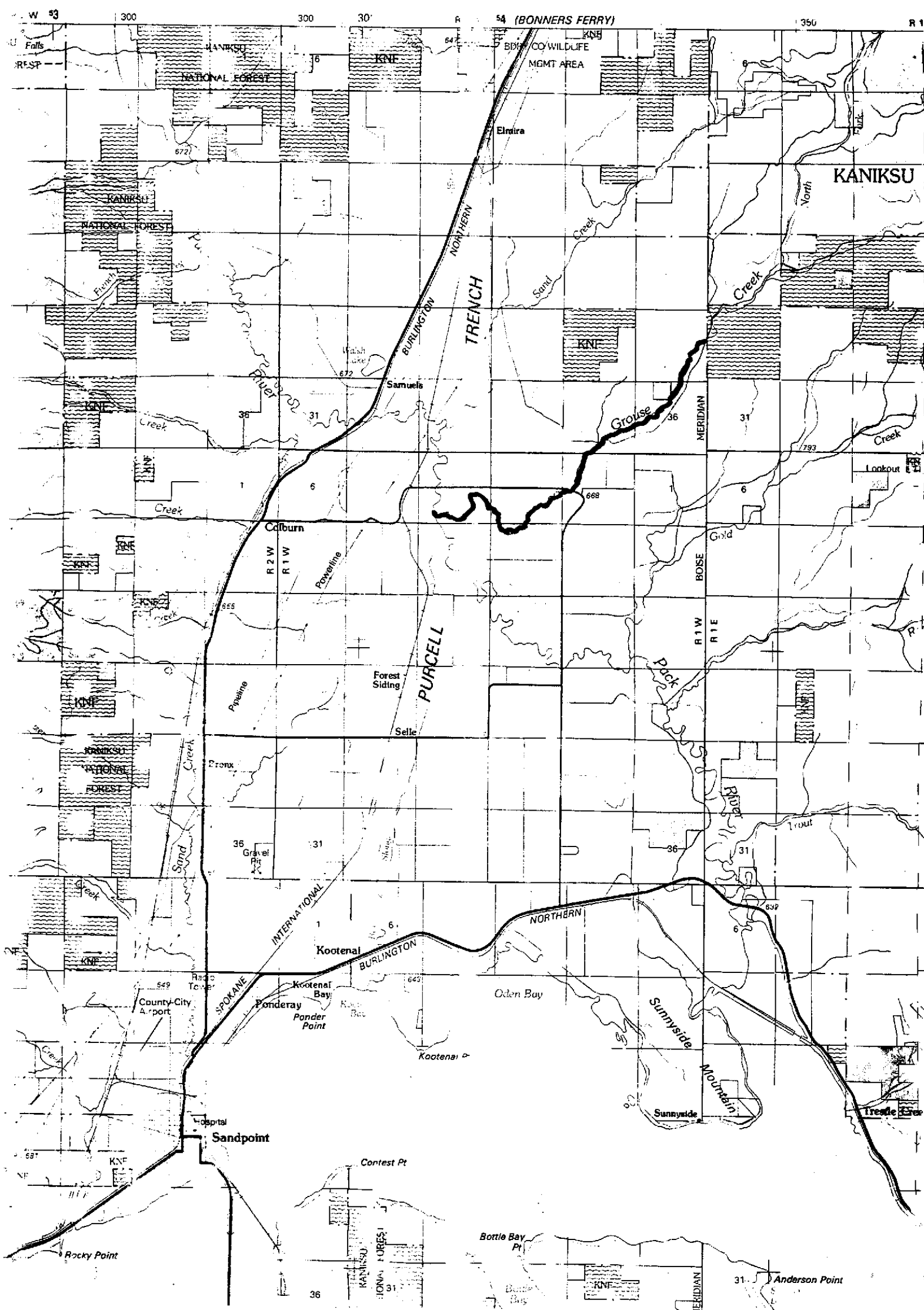
JUL 12 1988

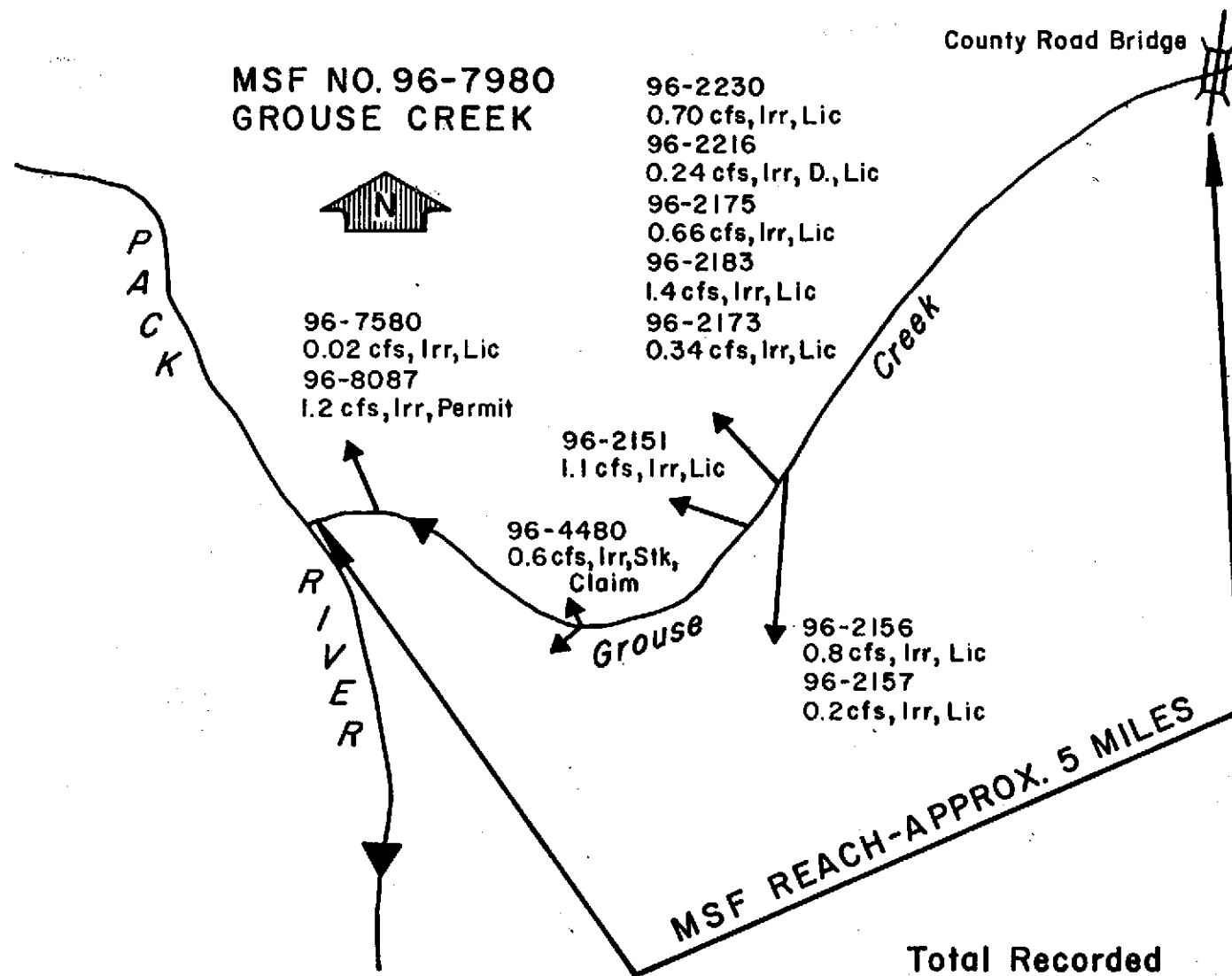
Attendance at Public Meeting
 Grouse Creek & Lightning
 Sandpoint 1/29/83 7:30 PM

NAME	Address	Telephone
SARAH PORTER	Sgt Daily Rec	263-9534
MIKE RUSKEY	P.O. 1021 SANDPOINT, ID	264-5835
Karen Pratt	Clark Fork Research Station	
Compton White	Clark Fork Ida Box 8	264-5864
Set White	Clark Fork Ida	266-1411
Allen & Tringale	Box 119 Hope, Id.	264-5754
Bob Skinnister	P.O. Box 122 Hope Id.	264-5747
Jana Mabe	P.O. Box 139 Sagle Id.	263-1012
Charlie Elliott	4675 Baldy Mtn. Rd, Sagle	263-7056
Dr. Catherine Brodie	P.O. Box 43, Clark Fork	266-1306
John D. Brodie	P.O. Box 456 Clark Fork	266-1306
JM B. Case	Box 780 COLEMAN CANYON	263-5443
FRANK KERNS JR.	Et 1 Box 160 SAMUELS, IDAHO	263-4077
George A. Miller	500 GROUSE CREEK RD SANDPOINT	263-6985
Alan W. McCall	300 GROUSE CREEK RD SAMUELS	263-2695
Roland W. Dehn	Box 176 CLARKS FORK ID	266-1213
Ulene Zarniak	2281 Intervenor St Riverside Ca	714-682-8994 22507

MICROFILMED

JUL 12 1988





**Total Recorded
Diversions=7.26 cfs**

IDAHO WATER RESOURCE BOARD FILING (cfs)

<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
14	14	14	85	85	67	67	14	14	14	14	14

FIGURE 1. AVERAGE MONTHLY DISCHARGE. RAPID LIGHTNING CR NR SAMUELS 1963-68

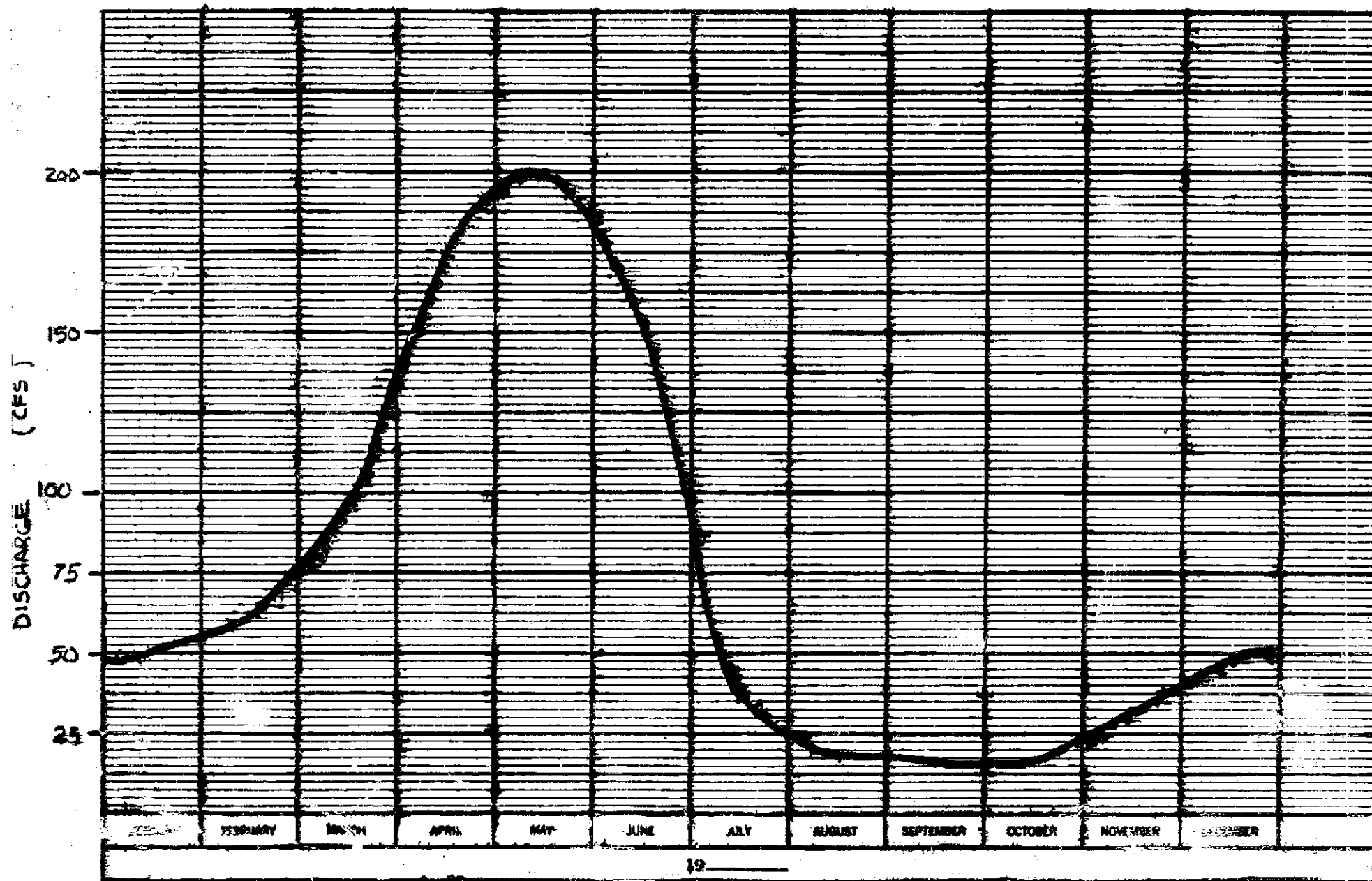
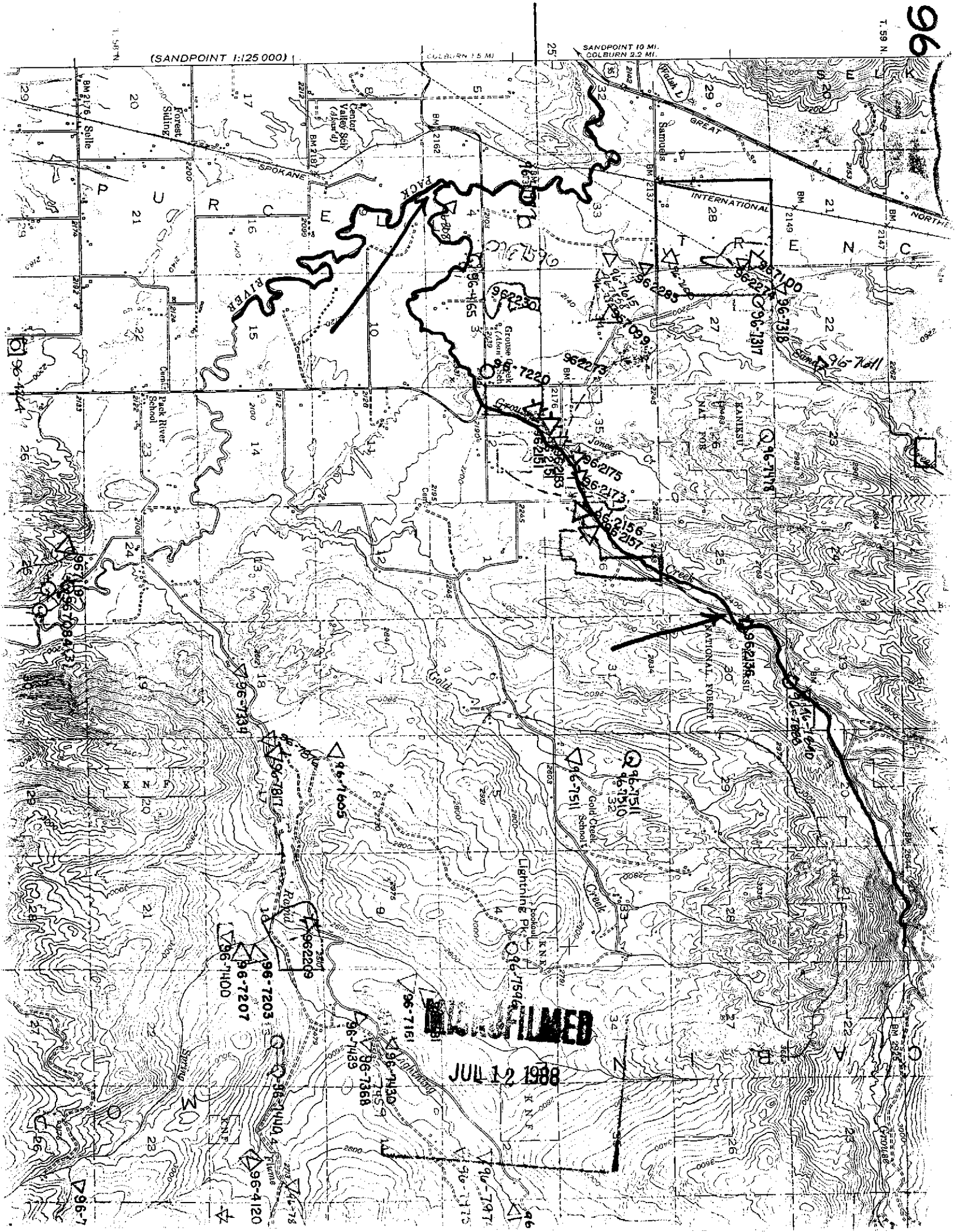


TABLE 1. GROUSE CREEK, Miscellaneous Measurements During Month (cfs)

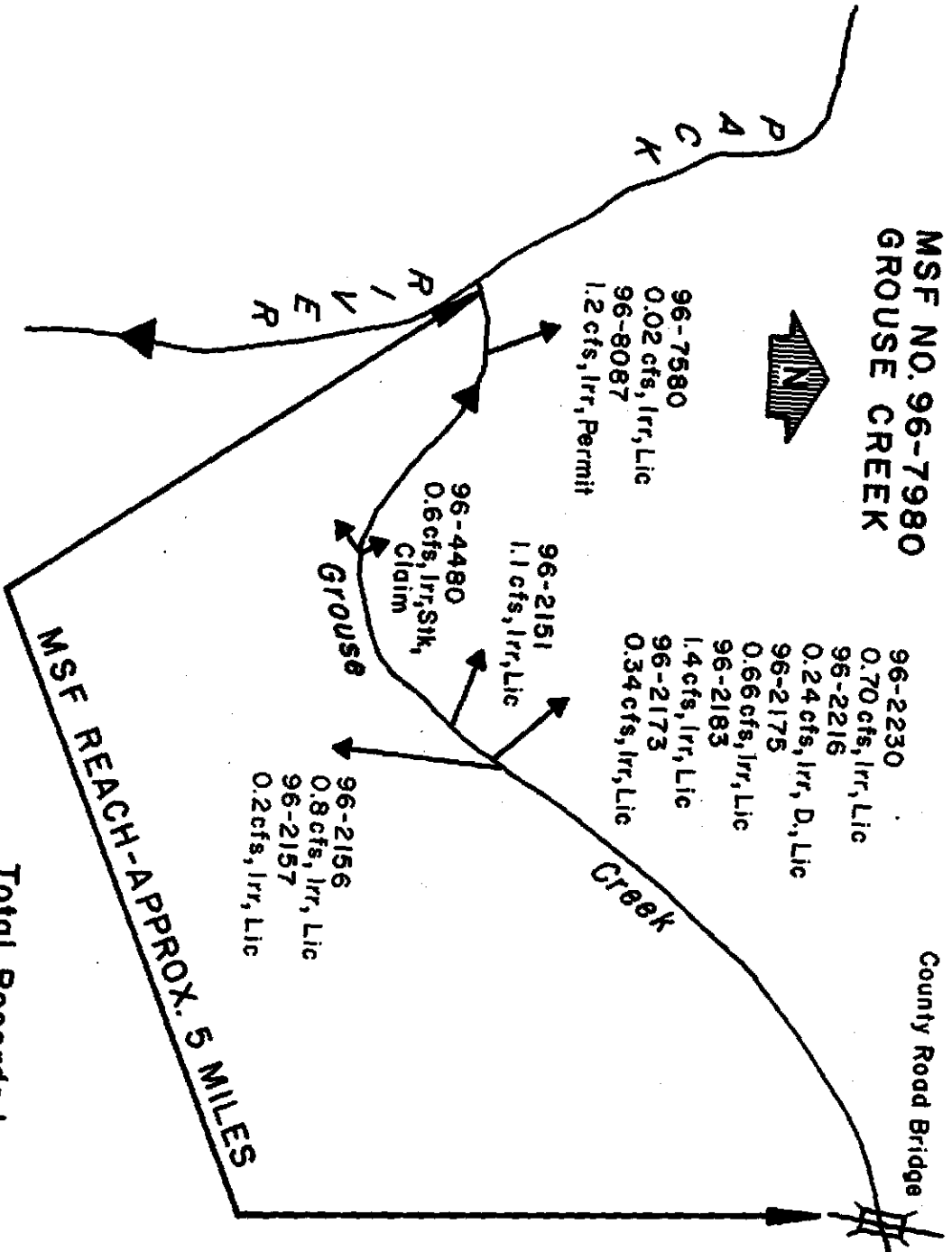
	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sept</u>
<u>Water</u> <u>Year</u>												
1959	<u>0.0</u>											<u>14.8</u>
1960	108		109	63.9			290	319	219	<u>16.1</u>	14.4	
1961	<u>0.1</u>	35.7	74.5	55.0	161		303	604	697	<u>26.4</u>	<u>6.8</u>	<u>5.7</u>
1962		<u>0.7</u>	18.3	21.0	53.2		153	328	430	<u>6.0</u>		<u>14.0</u>
1963	24.7		88.0	62.9	111	80.9		884	58.5	<u>12.5</u>		<u>4.5</u>
1964	<u>6.8</u>	243	40.3		22.5	30.9	290	1060	264	<u>33</u>		<u>12.1</u>
1965	24		100	57.1		103	646		342	<u>21.8</u>		<u>13.1</u>
1974												<u>9.1</u>
1975												<u>30.8</u>
1976												<u>27.6</u>
1977						22	162*	230*		91	15	
1978											<u>6.3</u>	
1979												
1980												<u>7.6</u>

* Average of several measurements

100



MSF NO. 96-7980 GROUSE CREEK



Total Recorded
Diversions=7.26 cfs

IDAHO WATER RESOURCE BOARD FILING (cfs)

Month	Year	Diversion (cfs)
JAN	14	
FEB	14	
MAR	14	
APR	85	
MAY	85	
JUN	67	
JUL	67	
AUG	14	
SEP	14	
OCT	14	
NOV	14	
DEC	14	



State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

CECIL D. ANDRUS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

June 24, 1987

Idaho Water Resource Board
Statehouse
Boise, ID 83720

Re: Application for Permit No. 96-7980

Dear Applicant:

Enclosed is a copy of approved Application for Permit No. 96-7980 along with a copy of the Order Adopting Proposed Memorandum Decision and Order. We direct your attention to the conditions of approval as set forth in the Order.

Any person who does not agree with the decision of the Department may request a rehearing before the Director within twenty (20) days, or may appeal directly to the district court within thirty (30) days of the date of the decision is mailed.

Please note that the application will not ripen into a permit until finally approved by the Idaho Legislature.

Sincerely,

A handwritten signature in cursive script, reading "Gary Spackman", is written over the typed name.

GARY SPACKMAN, Supervisor
Water Allocation Section

GS:jf

Enclosures

CC: Protestants
(see certificate of mailing)

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

1. Name of applicant Idaho Water Resource Board Phone 384-2215

Post office address Statehouse, Boise, Idaho 83720

2. Source of water supply Grouse Creek which is a tributary of Pack River

3. Location of reach is from SE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Section 4 Township 58N

Range 1 W B.M. Bonner County, upstream approximately 5 miles to the county road bridge in SE $\frac{1}{4}$ NE $\frac{1}{4}$, Section 25, T59N R1W, Bonner County.

4. Water will be used for the following purposes:

see No. 10

Amount for instream flow purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

5. Total quantity to be appropriated:

a. cubic feet per second and/or b. acre-feet per annum.

6. Proposed diverting works:

a. Description of ditches, flumes, pumps, headgates, etc.

b. Height of storage dam feet, active reservoir capacity acre-feet; total reservoir capacity acre-feet, materials used in storage dam:

Period of year when water will be diverted to storage to inclusive.
(Month/Day) (Month/Day)

c. Proposed well diameter is inches; proposed depth of well is feet.

7. Time required for the completion of the works and application of the water to the proposed beneficial use is 5 years (minimum 1 year — maximum 5 years).

8. Description of proposed uses:

a. If water is not for irrigation:

(1) Give the place of use of water: SE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Section 4 Township 58N

Range 1 W B.M.

(2) Amount of power to be generated: horsepower under feet of head.

(3) List number of each kind of livestock to be watered

(4) Name of municipality to be served , or number of families to be supplied with domestic water .

(5) If water is to be used for other purposes describe: To maintain trout spawning and rearing habitat from the stream mouth upstream a distance of approximately five miles.

b. If water is for irrigation, indicate acreage in each subdivision in the tabulation below:

[illegible]

Total number of acres to be irrigated _____

c. Describe any other water rights used for the same purposes as described above. None

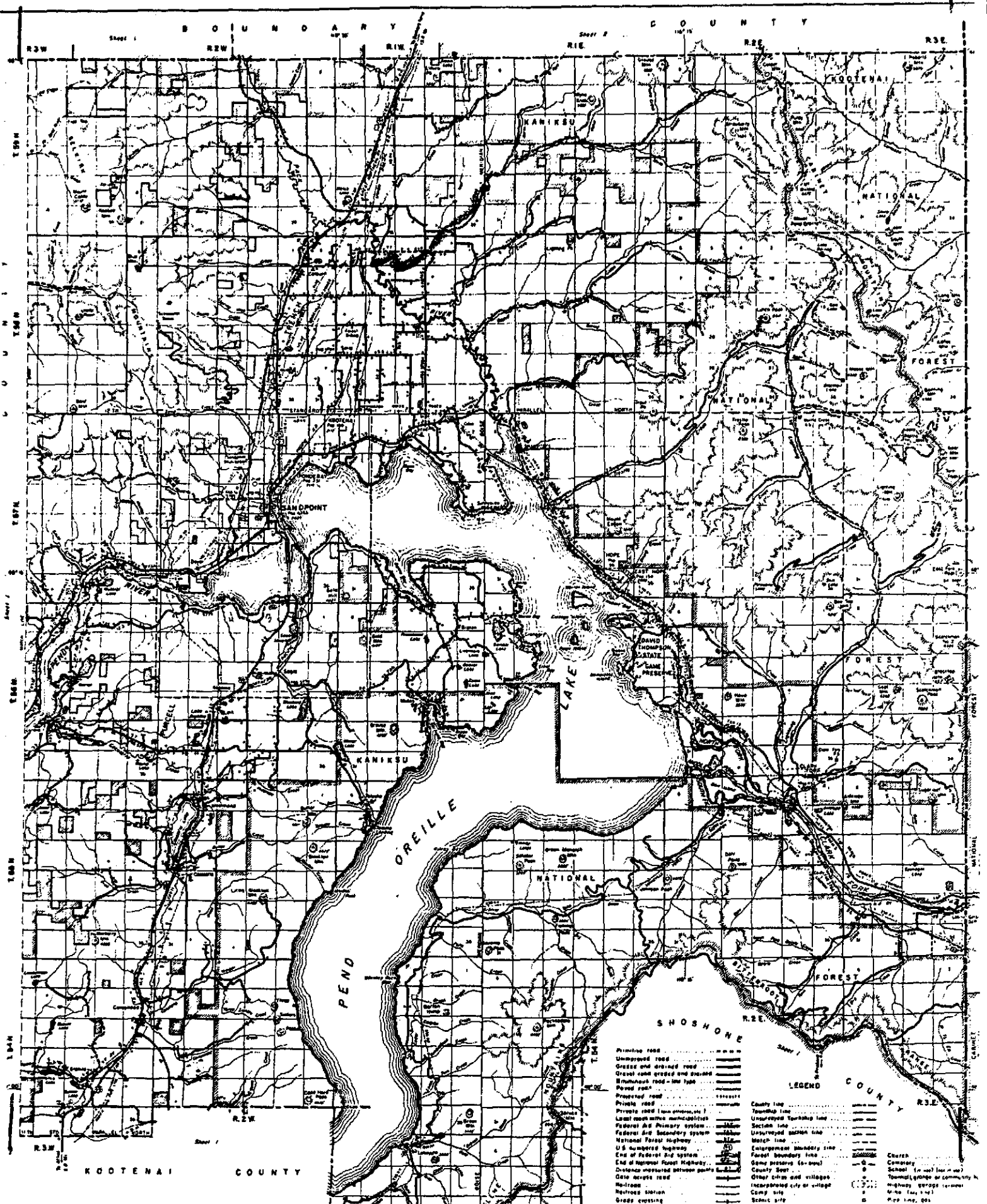
9. a. Who owns the property at the point of diversion _____

b. Who owns the land to be irrigated or place of use _____

c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing

10. Remarks

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
14	14	14	85	85	67	67	14	14	14	14	14



BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth.

M. Reed Hansen
(Applicant)

Chairman

Idaho Water Resource Board

Received by 142 Date 7/6/87 Time 8:45 AM
Preliminary check by RSB Fee \$ NR
Receipted by RSB Date NR
Publication prepared by RSB Date 7/8/83
Published in Starpoint Bee
Publication dates 7/14 + 21/83
Publication approved RSB Date 10/11/83
Protests filed by: _____

Copies of protests forwarded by _____
Hearing held by _____ Date _____
Recommended for approval denial by _____

ACTION OF THE DIRECTOR, DEPARTMENT OF WATER RESOURCES

This is to certify that I have examined Application for Permit to appropriate the public waters of the State of Idaho No. 96-7980, and said application is hereby APPROVED.

1. Approval of said application is subject to the following limitations and conditions:

- a. SUBJECT TO ALL PRIOR WATER RIGHTS.
- b. Proof of construction of works and application of water to beneficial use shall be submitted on or before February 1, 1993.
- c. The rate of diversion, if water is to be used for irrigation under this permit, when combined with all other water rights for the same land shall not exceed 0.02 cubic feet per second for each acre of land.
- d. Other: Pursuant to PROPOSED MEMORANDUM DECISION AND ORDER and ORDER ADOPTING PROPOSED MEMORANDUM DECISION AND ORDER

Witness my hand this 24 day of June, 1987.

[Signature]
Director

NAME OF STREAM: GROUSE CREEK, A TRIBUTARY OF PACK RIVER

LEGAL DESCRIPTION OF THE POINT OF THE STREAM WHERE STREAM FLOW IS REQUESTED:

At stream mouth, Bonner County, SE $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 4, T. 58 N., R. 1 W.

THE PROPOSED STREAM FLOW IN CUBIC FEET PER SECOND:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
14	14	14	85	85	67	67	14	14	14	14	14

THE PURPOSE FOR WHICH THE MINIMUM STREAM FLOW IS PROPOSED:

To maintain trout spawning and rearing habitat from the stream mouth upstream a distance of approximately five miles.

THE PERIOD OF TIME OR SEASON OF YEAR DURING WHICH APPROPRIATION IS PROPOSED:

See above.

EVIDENCE THAT THE APPROPRIATION WILL NOT INTERFERE WITH ANY VESTED WATER RIGHT, PERMIT, OR WATER APPLICATION OF EARLIER DATE OF PRIORITY:

The above requested flow is for instream nonconsumptive use and will be subject to all vested water rights, permits or water application of earlier dates of priority.

EVIDENCE THAT THE APPROPRIATION WOULD BE IN THE PUBLIC INTEREST AS OPPOSED TO PRIVATE INTEREST: The stretch of Grouse Creek from the mouth upstream to a point five miles is one of the major trout spawning and rearing streams in Northern Idaho and is one of the primary spawning tributaries of Pend Oreille Lake.

The requested instream water right on Grouse Creek will be held in trust for the people of Idaho by the Idaho Water Resource Board.

EVIDENCE OR JUSTIFICATION THAT THE APPROPRIATION IS NECESSARY FOR THE PURPOSES SHOWN ABOVE:

During 1977, personnel of the Idaho Fish and Game collected field data from Grouse Creek. Using this data with instream flow methodologies, the above requested flows were determined as necessary for maintaining trout spawning and rearing habitat in Grouse Creek. Methodologies, techniques and flow recommendations are presented in the following publication:

Cochnauer, Tim and Edwin Buettner. 1978. Stream Resource Maintenance Flow Determinations on Idaho Streams. Job Performance Report, Project F-69-R-3, Job II. 88 pp.

EVIDENCE THAT THE REQUESTED FLOW IS MINIMUM AND NOT THE IDEAL OR MOST DESIRABLE FLOW: The ideal flow would be bankfull discharge.

EVIDENCE THAT THE REQUESTED FLOW IS CAPABLE OF BEING MAINTAINED AS EVIDENCED BY RECORDS OF STREAM FLOWS:

No gaging station is located on Grouse Creek.

LOCATION OF EXISTING GAGING STATION THAT CAN BE USED IN THE ADMINISTRATION OF THIS APPROPRIATION: None

BEFORE THE DIRECTOR OF THE DEPARTMENT OF WATER RESOURCES
OF THE
STATE OF IDAHO

IN THE MATTER OF APPLICATION)
NO. 96-7979 TO ESTABLISH A)
MINIMUM STREAMFLOW IN LIGHTNING)
CREEK IN THE NAME OF THE IDAHO)
WATER RESOURCE BOARD)

ORDER ADOPTING PROPOSED
MEMORANDUM DECISION AND
ORDER

A. Kenneth Dunn, Director of the Department of Water Resources, issued a Proposed Memorandum Decision and Order approving Application No. 96-7979 on April 20, 1987, and served copies on the parties pursuant to Idaho Code § 67-5211.

More than fifteen days have passed since the service of the Proposed Memorandum Decision and Order.

No exceptions to the Proposed Memorandum Decision and Order having been filed with the Department of Water Resources;

IT IS HEREBY ORDERED that the Proposed Memorandum Decision and Order be adopted as the Final Decision and Order of the Director, and that the terms and conditions imposed therein be incorporated into approved Application No. 96-7979.

IT IS FURTHER ORDERED that proof of completion of works and beneficial use shall be submitted on or before February 1, 1993.

Dated this 24 day of June, 1987.


A. KENNETH DUNN
Director

CERTIFICATE OF MAILING

I hereby certify that on the 24th day of June, 1987, I mailed a true and correct copy, by U.S. Mail, postage prepaid, of the Order Adopting Proposed Memorandum Decision and Order to:

Water Resource Board
Gene Gray
Route 1, Box 46-A
Payette, ID 83661

Water Resource Board
Dave Rydalch
Route 2, Box 108
St. Anthony, ID 83445

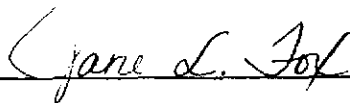
Department of Fish & Game
Steve Goddard
600 South Walnut
Boise, ID 83706

Tom Mehler
Lake-Pend Oreille Trout Club
P.O. Box 1589
Sandpoint, ID 83864

Mike Ruskey
Idaho Pandandle Chapter of Trout Unlimited
P.O. Box 1821
Sandpoint, ID 83864

Cooke, Lamanna, & Smith
Thomas E. Cooke
Attorney at Law
P.O. Box 789
Priest River, ID 83856

Vicki Younger
P.O. Box 149
Colburn, ID 83865


JANE L. FOX, Receptionist



State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

CECIL D. ANDRUS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

June 24, 1987

Idaho Water Resource Board
Statehouse
Boise, ID 83720

Re: Application for Permit No. 96-7979

Dear Applicant:

Enclosed is a copy of approved Application for Permit No. 96-7979 along with a copy of the Order Adopting Proposed Memorandum Decision and Order. We direct your attention to the conditions of approval as set forth in the Order.

Any person who does not agree with the decision of the Department may request a rehearing before the Director within twenty (20) days, or may appeal directly to the district court within thirty (30) days of the date of the decision is mailed.

Please note that the application will not ripen into a permit until finally approved by the Idaho Legislature.

Sincerely,

GARY SPACKMAN, Supervisor
Water Allocation Section

GS:jf

Enclosures

CC: Protestants
(see certificate of mailing)

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

1. Name of applicant Idaho Water Resource Board Phone 384-2215

Post office address Statehouse, Boise, Idaho 83720

2. Source of water supply Lightning Creek which is a tributary of Pend Oreille Lake

3. Location of reach is from SW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Section 3 Township 55 N

Range 2 E B.M. Bonner County, upstream approximately 8 miles to confluence with
East Fork in the SW $\frac{1}{4}$, SW $\frac{1}{4}$ Section 32, T57N, R3E, B.M., Bonner County.

4. Water will be used for the following purposes:

see No. 10

Amount for instream flow purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)

5. Total quantity to be appropriated:

a. cubic feet per second and/or b. acre-feet per annum.

6. Proposed diverting works:

a. Description of ditches, flumes, pumps, headgates, etc.

b. Height of storage dam feet, active reservoir capacity acre-feet; total reservoir
capacity acre-feet, materials used in storage dam:

Period of year when water will be diverted to storage to inclusive.
(Month/Day) (Month/Day)

c. Proposed well diameter is inches; proposed depth of well is feet.

7. Time required for the completion of the works and application of the water to the proposed beneficial
use is 5 years (minimum 1 year — maximum 5 years).

8. Description of proposed uses:

a. If water is not for irrigation:

(1) Give the place of use of water: SW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Section 3 Township 55 N
Range 2 E B.M.

(2) Amount of power to be generated: horsepower under feet of head.

(3) List number of each kind of livestock to be watered

(4) Name of municipality to be served , or number of families to be
supplied with domestic water .

(5) If water is to be used for other purposes describe: To maintain trout spawning and rearing
from the confluence with Clark Fork upstream a distance of 8 miles.

b. If water is for irrigation, indicate acreage in each subdivision in the tabulation below:

[illegible]

Total number of acres to be irrigated

c. Describe any other water rights used for the same purposes as described above. None

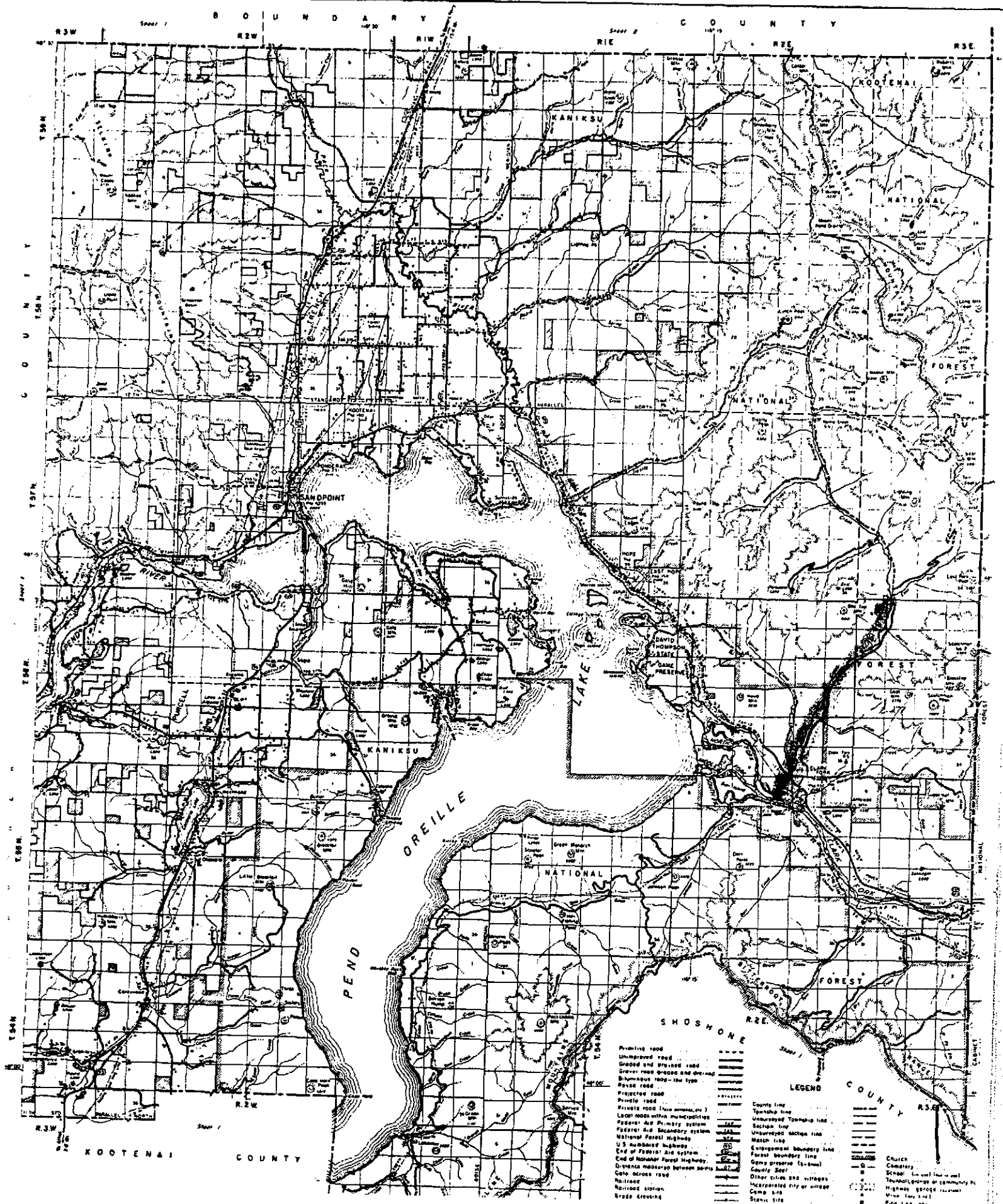
9. a. Who owns the property at the point of diversion _____

b. Who owns the land to be irrigated or place of use _____

c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing

10. Remarks

Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
49	49	49	84	84	53	53	49	49	49	49	49



BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth.

Will Reed Hansen
(Applicant)

Chairman

Idaho Water Resource Board

Received by 152 Date 7/4/51 Time 5:45 PM
6-19-81
Preliminary check by RyA Fee \$ NR
Receipted by RyA Date NR
Publication prepared by mm Date 9/8/83
Published in Longport Bee
Publication dates 9/14-21/83
Publication approved mm Date 10/11/83
Protests filed by: _____

Copies of protests forwarded by _____
Hearing held by _____ Date _____
Recommended for approval denial by _____

ACTION OF THE DIRECTOR, DEPARTMENT OF WATER RESOURCES

This is to certify that I have examined Application for Permit to appropriate the public waters of the State of Idaho No. 96-7979, and said application is hereby APPROVED.

1. Approval of said application is subject to the following limitations and conditions:

- a. SUBJECT TO ALL PRIOR WATER RIGHTS.
- b. Proof of construction of works and application of water to beneficial use shall be submitted on or before February 1, 19 93.
- c. The rate of diversion, if water is to be used for irrigation under this permit, when combined with all other water rights for the same land shall not exceed 0.02 cubic feet per second for each acre of land.
- d. Other: Pursuant to PROPOSED MEMORANDUM DECISION AND ORDER and ORDER ADOPTING
PROPOSED MEMORANDUM DECISION AND ORDER

Witness my hand this 24 day of June, 19 87

[Signature]
Director

NAME OF STREAM: Lightning Creek, a tributary of Pend Oreille Lake.

LEGAL DESCRIPTION OF THE POINT OF THE STREAM WHERE STREAM FLOW IS REQUESTED:

At mouth, Bonner County, SW $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 3, T. 55 N., R. 2 E.

THE PROPOSED STREAM FLOW IN CUBIC FEET PER SECOND:

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
49	49	49	84	84	53	53	49	49	49	49	49

THE PURPOSE FOR WHICH THE MINIMUM STREAM FLOW IS PROPOSED:

To maintain trout spawning and rearing from the point of requested flow upstream a distance of eight miles.

THE PERIOD OF TIME OR SEASON OF YEAR DURING WHICH APPROPRIATION IS PROPOSED:

See above.

EVIDENCE THAT THE APPROPRIATION WILL NOT INTERFERE WITH ANY VESTED WATER RIGHT, PERMIT, OR WATER APPLICATION OF EARLIER DATE OF PRIORITY:

The above requested flow is for instream nonconsumptive use and will be subject to all vested water rights or water applications of earlier dates of priority.

EVIDENCE THAT THE APPROPRIATION WOULD BE IN THE PUBLIC INTEREST AS OPPOSED TO PRIVATE INTEREST: Lightning Creek is an important tributary of Pend Oreille Lake and is a major spawning and rearing area for kamloops trout, Dolly Varden cutthroat trout and kokanee salmon. This stream is the most important tributary for world record gerrard kamloop trout. These fish are only found in Pend Oreille and Kootenai lakes. Recreational fishing is one of the prime sources of income for neighboring areas of Pend Oreille Lake. The requested water right will be held in trust for the people of Idaho by the Idaho Water Resource Board.

EVIDENCE OR JUSTIFICATION THAT THE APPROPRIATION IS NECESSARY FOR THE PURPOSES SHOWN ABOVE: During 1977, personnel of the Idaho Fish and Game collected field data from Lightning Creek. Using this data with instream flow methodologies, the above requested flows were determined as necessary for maintaining trout spawning and rearing habitat in Lightning Creek. Methodologies, techniques and flow recommendations are presented in the following publication:

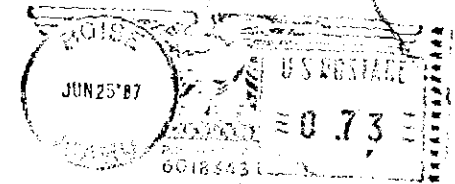
Cochnauer, Tim and Edwin Buettner. 1978. Stream Flow Investigations -- Stream Resource Maintenance Flow Determinations on Idaho Streams. Job Performance Report. Project F-69-R-3, Job II. Idaho Department of Fish and Game. 8 pp.

EVIDENCE THAT THE REQUESTED FLOW IS MINIMUM AND NOT THE IDEAL OR MOST DESIRABLE FLOW: The ideal flow would be bank full discharge.

EVIDENCE THAT THE REQUESTED FLOW IS CAPABLE OF BEING MAINTAINED AS EVIDENCED BY RECORDS OF STREAM FLOWS: No regularly recorded flow data is available.

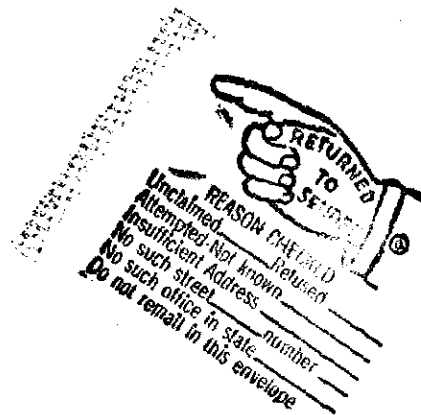
LOCATION OF EXISTING GAGING STATION THAT CAN BE USED IN THE ADMINISTRATION OF THIS APPROPRIATION: None

DEPARTMENT OF WATER RESOURCES
STATEHOUSE
BOISE, IDAHO 83720



RECEIVED
JUL 13 1987

Department of Water Resources



*MSF
3657
B.F.*

Vicki Younger
~~Box 149~~
~~Colburn, ID 83506~~

7310 Scenic Break Rd
Austin, Texas
78736

First Class

JUL 12 1987

MICROFILMED

BEFORE THE DIRECTOR OF THE DEPARTMENT
OF WATER RESOURCES OF THE
STATE OF IDAHO

IN THE MATTER OF APPLICATION FOR PERMIT)
NO. 96-7980 TO ESTABLISH A MINIMUM STREAM)
FLOW IN GROUSE CREEK IN THE NAME OF THE)
IDAHO WATER RESOURCE BOARD)

ORDER ISSUING
PROPOSED MEMORANDUM
DECISION

A. Kenneth Dunn, Director of the Department of Water Resources, having reviewed the attached proposed decision prepared by his appointee, NORMAN C. YOUNG, who conducted the hearing or who has read the record in this case, hereby approves the same as a proposed decision pursuant to Idaho Code, §67-5211.

Each party to these proceedings who appeared at the hearing is given the opportunity, pursuant to Idaho Code, §§42-1701A and 67-5211, to file exceptions to the proposed decision and to present briefs and oral arguments. If no timely and proper exceptions are received, an order by the Director will be entered adopting the proposed decision as his final decision.

I.
EXCEPTIONS

A. To be considered by the Director, exceptions must:

1. be received by the Director on or before the 15th day following the day of service of this Order and the proposed decision,

2. specifically identify the portions of the proposed decision to which exceptions are made and specifically state the grounds for those exceptions, and

3. be sent to each of the parties who appeared or their attorneys.

II.
BRIEFS

A. Any briefs in support of exceptions to the proposed decision shall be filed with the Director at the same time that party's exceptions are filed with the Director.

B. All response briefs to the exceptions must be filed with the Director within 15 days after the exceptions were served upon the responding party.

III.

A. No oral arguments before the Director on the proposed decision will be held unless specifically requested by a party filing exceptions to the proposed decision and unless that request is filed with the Director concurrently with the filing of that party's exception.

B. If oral arguments have been properly requested by a party filing exceptions, any other party, upon reasonable notice to the Director, shall have the right to present oral argument in response to the exceptions filed.

C. Oral arguments before the Director on exceptions to the proposed decision shall be heard at the discretion of the Director, pursuant to Idaho Code, §42-1701A. If oral arguments are to be heard, the Director will, within a reasonable time, notify each party of the place, date and hour the oral arguments will take place and of the period of time allocated for the arguments of this case. Unless the Director orders otherwise, all oral arguments shall be heard in Boise, Idaho.

IV.

CERTIFICATE OF SERVICE

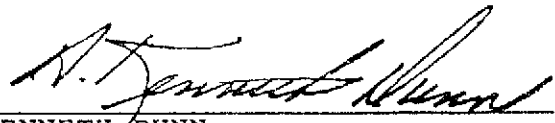
All exceptions, briefs, requests oral arguments and other matters filed with the Director in connection with the proposed decision shall be served on all other parties to these proceedings in accordance with Rule 7.2.

V.

FINAL DECISION

Following the submission of all exceptions, briefs and oral arguments, if they are heard, the Director shall issue a final decision adopting, modifying or rejecting and replacing the proposed decision. Copies of the decision and order shall be served on all parties.

Dated this 20th day of APRIL, 1987.



A. KENNETH DUNN
Director

BEFORE THE DIRECTOR OF THE DEPARTMENT OF WATER RESOURCES
OF THE
STATE OF IDAHO

IN THE MATTER OF APPLICATION FOR PERMIT)
NO. 96-7980 TO ESTABLISH A MINIMUM STREAM)
FLOW IN GROUSE CREEK IN THE NAME OF THE)
IDAHO WATER RESOURCE BOARD)

PROPOSED
MEMORANDUM DECISION
AND ORDER

On June 19, 1981, the Idaho Water Resource Board (hereafter Board) filed with the Idaho Department of Water Resources (hereafter Department) an application for permit to preserve a minimum flow in Grouse Creek, tributary to the Pack River, in Bonner County. The application was filed by the Board at the request of the Idaho Department of Fish and Game in accordance with the provisions of Chapter 15, Title 42, Idaho Code.

A public meeting was held by the Board on September 29, 1983, in Sandpoint, Idaho, for the purpose of determining local public interest with respect to the application. On October 7, 1983, the Board adopted a resolution requesting the Director of the Department to proceed with administrative action on the application.

Notice describing the proposed appropriation and setting the time and place for the required hearing was published in the Sandpoint Daily Bee on October 26 and November 2, 1983. A public hearing was held at Sandpoint, Idaho on November 16, 1983.

Because of the similarities between this application and application for permit No. 96-7979, to appropriate a minimum stream

flow for identical purposes from nearby Lightning Creek tributary to Clark Fork, a joint hearing was conducted for the two applications. Parties appearing in a formal capacity included members of the Board; representatives of the Idaho Department of Fish and Game; Tom Mehler representing the Lake Pend Oreille Idaho Club; Mike Ruskey representing the Idaho Panhandle Chapter of Trout Unlimited; Attorney Thomas E. Cooke representing Roland Derr; and Vicki Younger representing property owners in the Grouse Creek basin. Ted Clarke appeared for the purpose of presenting public interest views and comments.

Based upon sworn testimony, documentation and statements included in the record, and his understanding of the law, the Hearing Officer as a representative of the Director of the Department proposes the following Findings of Fact, Conclusions of Law, and Order.

FINDINGS OF FACT

1) On June 19, 1981, the Board filed Application for Permit No. 96-7980 to appropriate a minimum stream flow in Grouse Creek, which is tributary to the Pack River, Bonner County, pursuant to the provisions of Chapter 15, Title 42, Idaho Code.

2) Application for Permit No. 96-7980 proposes to appropriate a minimum stream flow in Grouse Creek within a reach extending from the confluence with Pack River in the SE1/4 SW1/4, Section 4, Township 58 North, Range 1 West, B.M., upstream approximately five (5) miles to the county road bridge in the SE1/4 NE1/4, Section 25, Township 59 North, Range 1 West, B.M. The proposed rate of flow is 14 cubic feet per second from January 1

through March 31, 85 cubic feet per second in April and May, 67 cubic feet per second in June and July, and 14 cubic feet per second from August 1 through December 31.

3) The purpose of the proposed instream appropriation is to maintain trout spawning and rearing throughout the reach defined above.

4) Based upon testimony of the staff of the Department, a finding is made that various water right licenses and permits exist with points of diversion within the designated minimum stream flow reach. The sum of the rates of flow of these water rights is 6.66 cubic feet per second. In addition, one beneficial use right is claimed to divert 0.6 cubic feet per second in this reach. In comparison to measured stream flows in Grouse Creek, these diversions are not usually a significant portion of the stream flow.

5) All rights acquired under Application for Permit No. 96-7980 are for instream non-consumptive uses and will be subject to all vested water rights.

6) Based upon the sworn testimony, documentation, and statements comprising the record in this matter, a finding is made that the minimum stream flow proposed by Application No. 96-7980 is necessary to maintain trout spawning and rearing.

7) Based upon testimony presented at the hearing, a finding is made that the benefits to be derived from the minimum stream flow application will be enjoyed by members of the public as opposed to being limited to private use or enjoyment.

8) Based upon testimony and evidence submitted by the Idaho Department of Fish and Game, a finding is made that the flow requested

in the application is the minimum flow required to preserve the existing unique characteristics of the stream for the public benefits and is not the ideal or most desirable flow which could be utilized for that purpose.

9) Based upon testimony and evidence submitted concerning available flow measurement data, a finding is made that the minimum stream flow proposed for Grouse Creek is capable of being maintained.

CONCLUSIONS OF LAW

1) The proposed minimum stream flow appropriation will not interfere with any vested water right, permit, or right under an application having a priority date earlier than June 19, 1981.

2) The proposed minimum stream flow appropriation is in the public, as opposed to private, interest.

3) The proposed minimum stream flow appropriation is necessary to maintain trout spawning and rearing.

4) The minimum stream flow proposed to be appropriated is the minimum flow required for the purpose cited in Conclusion of Law No. 3 and not the ideal or most desirable flow.

5) The minimum stream flow proposed is capable of being maintained.

ORDER

IT IS, THEREFORE, HEREBY ORDERED that Application for Permit No.96-7980 is APPROVED subject to the following conditions:

1) Upon the future finding and order of the Director that gauging stations are required to maintain the approved minimum flow on Grouse Creek, such measuring devices shall be permanently installed and maintained as specified by the Department.

2) Proof of instream beneficial use of the minimum stream flow appropriated shall be submitted in a manner approved by the Department within five years after the permit approval is finally effective as herein provided. The proof submitted shall include at least three years of flow data for the water course. The frequency of the data accumulation must be submitted to the Director for review and approval.

3) The use of water under this permit shall be non-consumptive.

4) The use of water under this permit is subject to all prior rights.

5) The Director retains jurisdiction to review and amend any and all parameters of this permit and subsequent license. Prior to undertaking a review of the water right, the Director shall identify the reasons for exercising retained jurisdiction under this condition, and give notice thereof to the public generally and to specific persons or parties known by the Director to be interested. The Director shall thereafter conduct a hearing for the purpose of determining whether the minimum stream flow should be modified or amended in the public interest. The burden of proof at the hearing shall be upon the person or party seeking to establish that a particular parameter of the water right should be modified or amended to satisfy the public interest. Review of the water right under this condition may not occur prior to 15 years after issuance of either the permit or the license.

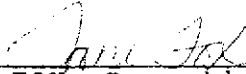
6) The application hereby approved by the Director shall be submitted to the Idaho Legislature by the fifth day of the next

regular legislative session and the Director's approval shall not become finally effective until approved by the Legislature pursuant to the procedure provided by Section 42-1503, Idaho Code.

Dated this 9TH day of April, 1987.


NORMAN C. YOUNG
Hearing Officer

I hereby certify that on the 20th of April, 1987, I sent copies of the Proposed Memorandum Decision and Order and the Order Issuing Proposed Memorandum Decision to the following people:


JANE FOX, Receptionist

Water Resource Board
Gene Gray

Water Resource Board
Dave Rydalch

Dept. of Fish & Game
Steve Goddard
600 South Walnut
Boise, ID 83706

Tom Mehler
Lake Pend Oreille Trout Club
P.O. Box 1589
Sandpoint, ID 83864

Mike Ruskey
Idaho Panhandle Chapter of Trout Unlimited
P.O. 1821
Sandpoint, ID 83864

Cooke, Lamanna & Smith
Thomas E. Cooke
Attorney at Law
P.O. Box 789
Priest River, ID 83856

Vicki Younger
P.O. Box 149
Colburn, ID 83865

DEPARTMENT OF WATER RESOURCES
STATEHOUSE
BOISE, IDAHO 83720

RE-UNITED
TO
SENDER

REASON CHECKED

Unclaimed _____ Refused _____
Address unknown _____
Insufficient Address _____
No such street _____ number _____
No such office in state _____
Do not remain in this envelope

RECEIVED

MAY 07 1987

Department of Water Resources

MNF
3651
B.F.

VICKI YOUNGER

7310 Scenic Brook Rd
Austin, Texas
78736

RECEIVED
JUL 1 1987

BEFORE THE DIRECTOR OF THE DEPARTMENT
OF WATER RESOURCES OF THE
STATE OF IDAHO

IN THE MATTER OF APPLICATION FOR PERMIT)
NO. 96-7979 TO ESTABLISH A MINIMUM STREAM)
FLOW IN LIGHTNING CREEK IN THE NAME OF)
THE IDAHO WATER RESOURCE BOARD)

ORDER ISSUING
PROPOSED MEMORANDUM
DECISION

A. Kenneth Dunn, Director of the Department of Water Resources, having reviewed the attached proposed decision prepared by his appointee, NORMAN C. YOUNG, who conducted the hearing or who has read the record in this case, hereby approves the same as a proposed decision pursuant to Idaho Code, §67-5211.

Each party to these proceedings who appeared at the hearing is given the opportunity, pursuant to Idaho Code, §§42-1701A and 67-5211, to file exceptions to the proposed decision and to present briefs and oral arguments. If no timely and proper exceptions are received, an order by the Director will be entered adopting the proposed decision as his final decision.

I.
EXCEPTIONS

A. To be considered by the Director, exceptions must:

1. be received by the Director on or before the 15th day following the day of service of this Order and the proposed decision,

2. specifically identify the portions of the proposed decision to which exceptions are made and specifically state the grounds for those exceptions, and

3. be sent to each of the parties who appeared or their attorneys.

II.
BRIEFS

A. Any briefs in support of exceptions to the proposed decision shall be filed with the Director at the same time that party's exceptions are filed with the Director.

B. All response briefs to the exceptions must be filed with the Director within 15 days after the exceptions were served upon the responding party.

III.

A. No oral arguments before the Director on the proposed decision will be held unless specifically requested by a party filing exceptions to the proposed decision and unless that request is filed with the Director concurrently with the filing of that party's exception.

B. If oral arguments have been properly requested by a party filing exceptions, any other party, upon reasonable notice to the Director, shall have the right to present oral argument in response to the exceptions filed.

C. Oral arguments before the Director on exceptions to the proposed decision shall be heard at the discretion of the Director, pursuant to Idaho Code, §42-1701A. If oral arguments are to be heard, the Director will, within a reasonable time, notify each party of the place, date and hour the oral arguments will take place and of the period of time allocated for the arguments of this case. Unless the Director orders otherwise, all oral arguments shall be heard in Boise, Idaho.

IV.

CERTIFICATE OF SERVICE

All exceptions, briefs, requests oral arguments and other matters filed with the Director in connection with the proposed decision shall be served on all other parties to these proceedings in accordance with Rule 7.2.

V.

FINAL DECISION

Following the submission of all exceptions, briefs and oral arguments, if they are heard, the Director shall issue a final decision adopting, modifying or rejecting and replacing the proposed decision. Copies of the decision and order shall be served on all parties.

Dated this 20th day of APRIL, 19 87.


A. KENNETH DUNN
Director

BEFORE THE DIRECTOR OF THE DEPARTMENT OF WATER RESOURCES
OF THE
STATE OF IDAHO

IN THE MATTER OF APPLICATION FOR PERMIT	)	
	)	
NO. 96-7979 TO ESTABLISH A MINIMUM STREAM	)	PROPOSED
	)	MEMORANDUM DECISION
FLOW IN LIGHTNING CREEK IN THE NAME OF	)	AND ORDER
	)	
THE IDAHO WATER RESOURCE BOARD	)	

On June 19, 1981, the Idaho Water Resource Board (hereafter Board) filed with the Idaho Department of Water Resources (hereafter Department) an application for permit to preserve a minimum flow in Lightning Creek, tributary to Clark Fork, in Bonner County. The application was filed by the Board at the request of the Idaho Department of Fish and Game in accordance with the provisions of Chapter 15, Title 42, Idaho Code.

A public meeting was held by the Board on September 29, 1983, in Sandpoint, Idaho, for the purpose of determining local public interest with respect to the application. On November 7, 1983, the Board adopted a resolution requesting the Director of the Department to proceed with administrative action on the application.

Notice describing the proposed appropriation and setting the time and place for the required hearing was published in the Sandpoint Daily Bee on October 26 and November 2, 1983. A public hearing was held at Sandpoint, Idaho on November 16, 1983.

Because of the similarities between this application and application for permit No. 96-7980, to appropriate a minimum stream

flow for identical purposes from nearby Grouse Creek tributary to the Pack River, a joint hearing was conducted for the two applications. Parties appearing in a formal capacity included members of the Board; representatives of the Idaho Department of Fish and Game; Tom Mehler representing the Lake Pend Oreille Idaho Club; Mike Ruskey representing the Idaho Panhandle Chapter of Trout Unlimited; Attorney Thomas E. Cooke representing Roland Derr; and Vicki Younger representing property owners in the Grouse Creek basin. James E. White and Ted Clarke appeared for the purpose of presenting public interest views and comments.

Based upon sworn testimony, documentation and statements included in the record, and his understanding of the law, the Hearing Officer as a representative of the Director of the Department proposes the following Findings of Fact, Conclusions of Law, and Order.

FINDINGS OF FACT

1) On June 19, 1981, the Board filed Application for Permit No. 96-7979 to appropriate a minimum stream flow in Lightning Creek, which is tributary to Clark Fork just upstream from Lake Pend Oreille, Bonner County, pursuant to the provisions of Chapter 15, Title 42, Idaho Code.

2) Application for Permit No. 96-7979 proposes to appropriate a minimum stream flow in Lightning Creek within a reach extending from the confluence with Clark Fork in the SW1/4 NE1/4, Section 3, Township 55 North, Range 2 East, B.M., upstream approximately eight (8) miles to the confluence with the East Fork in the SW1/4 SW1/4, Section 32, Township 57 North, Range 3 East, B.M. The proposed rate of flow is 49 cubic feet per second from January 1

through March 31, 84 cubic feet per second in April and May, 53 cubic feet per second in June and July, and 49 cubic feet per second from August 1 through December 31.

3) The purpose of the proposed instream appropriation is to maintain trout spawning and rearing throughout the reach defined above.

4) Based upon testimony of the staff of the Department, it is found that no other water rights had been filed for the use of Lightning Creek at the time of the hearing. However, testimony at the hearing indicated that there may be an intent to divert water from Lightning Creek for beneficial use in the future.

5) The proposed uses under Application for Permit No. 96-7979 are instream and non-consumptive.

6) Based upon the sworn testimony, documentation, and statements comprising the record in this matter, it is found that the minimum stream flow proposed by Application for Permit No. 96-7979 is necessary to maintain trout spawning and rearing.

7) Based upon testimony presented at the hearing, it is found that the benefits to be derived from the minimum stream flow application would be enjoyed by members of the public as opposed to being limited to private use or enjoyment.

8) Based upon testimony and evidence submitted by the Idaho Department of Fish and Game, it is found that the flow requested in the application is the minimum flow required to preserve the existing unique characteristics of the stream for the public benefits and is not the ideal or most desirable flow which could be utilized for that purpose.

9) Based upon testimony and evidence submitted concerning available flow measurement data, a finding is made that the minimum stream flows proposed for Lightning Creek are generally capable of being maintained. This testimony noted that flow data is limited for Lightning Creek.

ANALYSIS

Based upon testimony at the hearing and information in the file, there is one primary item of contention with respect to the proposed application. Section 42-1503, Idaho Code, requires that approval of an application for permit for a minimum stream flow must be based upon, among other things, a finding that the requested flows are "capable of being maintained as evidenced by records of stream flows and water levels and the existing or future establishment of necessary gauging stations and bench marks". The question concerns whether this requirement has been satisfied.

The record shows few recorded flow measurements on Lightning Creek. United States Geological Survey measurements identified in publications of Water Resources Data for Idaho, include six individual measurements made at a location near the railroad bridge about one-half mile upstream from the mouth. These measurements are tabulated as follows:

<u>Date</u>	<u>Flow</u> (cubic feet per second)
10-5-73	24.6
9-27-74	33.6
9-3-75	99.2
9-9-76	72.7
7-19-77	26.4
8-11-78	24.9

Of these measurements, the two made in early September indicate flows at this point sufficient to satisfy the minimum stream flow request.

One other flow measurement on Lightning Creek was documented by Idaho Department of Fish and Game personnel for a transect about seven (7) miles upstream from the mouth. The testimony indicates the flow to have been 58 cubic feet per second on July 26, 1977, which is five (5) feet per second more than the minimum flow requested.

The testimony and evidence established that the available measurements were made during months which are typically part of the low flow period of the annual flow regime cycle for streams in the Lightning Creek area.

Information presented at the hearing established that Lightning Creek does not have a homogeneous surface flow regime throughout the minimum flow reach, to the extent that in some portions of the reach there could be adequate flow to satisfy the minimum stream flow request while at the same time there is not sufficient flow to do so in other portions of the reach. The information, although not conclusive, indicates that the portion of the minimum flow reach for which most of the flow data are available is a section exhibiting significant percolation losses. For this reason, the existing flow data underestimate the flow rates occurring upstream over most of the requested reach.

The available flow data, when evaluated using information presented at the hearing concerning location and timing of the measurements, does indicate that the flow rates requested are generally capable of being maintained over most of the reach requested.

Public interest is a dynamic factor subject to change as the needs and desires of the people in an area and throughout Idaho

evolve. A perpetual commitment of a significant amount of water from a stream or river system to a use without a workable method of changing the terms of that use could at some future time adversely affect the public interest. Approval of a minimum stream flow should provide for a periodic review of the continued public interest.

CONCLUSIONS OF LAW

1) The proposed minimum stream flow appropriation will not interfere with any vested water right, permit, or right under an application having a priority date earlier than June 19, 1981.

2) The proposed minimum stream flow appropriation is in the public, as opposed to private, interest.

3) The proposed minimum stream flow appropriation is necessary to maintain trout spawning and rearing.

4) The proposed minimum stream flow appropriation is the minimum flow required for the purpose cited in Conclusion of Law No. 3 and not the ideal or most desirable flow.

5) The proposed minimum stream flow appropriation is generally capable of being maintained over most of the reach requested.

ORDER

IT IS, THEREFORE, HEREBY ORDERED that Application for Permit No. 96-7979 (Lightning Creek) is APPROVED subject to the following conditions:

1) Measuring devices of a type and at locations approved by the Director shall be installed to monitor the flows of Lightning Creek.

2) Proof of instream beneficial use of the minimum stream flow appropriated shall be submitted in a manner approved by the Department within five years after the permit approval is finally effective as herein provided. The proof submitted shall include at least three years of flow data. The frequency of the data accumulation shall be approved in advance by the Director.

3) The use of water under this permit shall be non-consumptive.

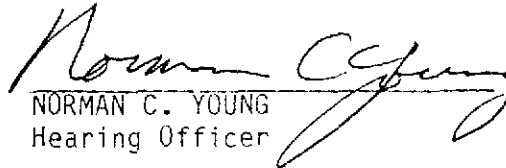
4) The use of water under this permit is subject to all prior rights.

5) The Director retains jurisdiction to review and amend any and all parameters of this permit and subsequent license. Prior to undertaking a review of the water right, the Director shall identify the reasons for exercising retained jurisdiction under this condition, and give notice thereof to the public generally and to specific persons or parties known by the Director to be interested. The Director shall thereafter conduct a hearing for the purpose of determining whether the minimum stream flow should be modified or amended in the public interest. The burden of proof at the hearing shall be upon the person or party seeking to establish that a particular parameter of the water right should be modified or amended to satisfy the public interest. Review of the water right under this condition may not occur prior to 15 years after issuance of either the permit or the license.

6) The application hereby approved by the Director shall be submitted to the Idaho Legislature by the fifth day of the next regular legislative session and the Director's approval shall not

become finally effective until approved by the legislature pursuant to
the procedure provided by Section 42-1503, Idaho Code.

Dated this 9TH day of April, 1987.


NORMAN C. YOUNG
Hearing Officer

I hereby certify that on the 20th of April, 1987, I sent copies of the Proposed Memorandum Decision and Order and the Order Issuing Proposed Memorandum Decision to the following people:


JANE FOX, Receptionist

Water Resource Board
Gene Gray

Water Resource Board
Dave Rydalch

Dept. of Fish & Game
Steve Goddard
600 South Walnut
Boise, ID 83706

Tom Mehler
Lake Pend Oreille Trout Club
P.O. Box 1589
Sandpoint, ID 83864

Mike Ruskey
Idaho Panhandle Chapter of Trout Unlimited
P.O. 1821
Sandpoint, ID 83864

Cooke, Lamanna & Smith
Thomas E. Cooke
Attorney at Law
P.O. Box 789
Priest River, ID 83856

Vicki Younger
P.O. Box 149
Colburn, ID 83865

DEPARTMENT OF WATER RESOURCES
STATEHOUSE
BOISE, IDAHO 83720

Celebrate
1987
2500 CENTENNIAL BLVD.

BOISE
MAY 1987
90



REASON CHECKED
Unclaimed _____
Refused _____
Attempted-Not known _____
Insufficient Address _____
No such street _____ number _____
No such office in state _____
Do not remain in this envelope

MANF
3657
@ J

RECEIVED

MAY 21 1987

Department of Water Resources

JUL 12 1988

RECEIVED

Vicki Younger
7310 Scenic Brook Rd.
Austin, TX

78736

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF MINIMUM STREAM FLOW
APPLICATIONS NOS. 37-7849, 37-7892,
37-7920, 96-7979 AND 96-7980

A RESOLUTION

WHEREAS, pursuant to Chapter 15, Title 42, Idaho Code, the Idaho Water Resource Board (Board) has the authority to appropriate the unappropriated waters of streams in Idaho for the purpose of establishing minimum stream flows; and,

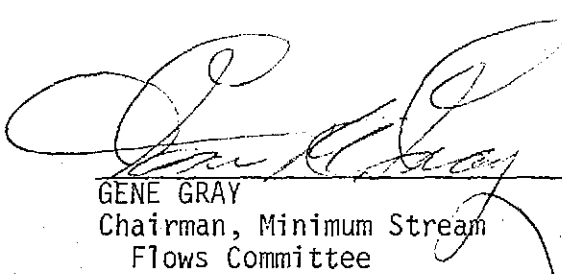
WHEREAS, the Board has submitted to the Director of the Idaho Department of Water Resources (Director) five applications to appropriate water for minimum stream flows identified as follows: No. 37-7849, Silver Creek; No. 37-7892, Malad River; No. 37-7920, Malad River; No. 96-7979, Lightning Creek; and No. 96-7980, Grouse Creek; and,

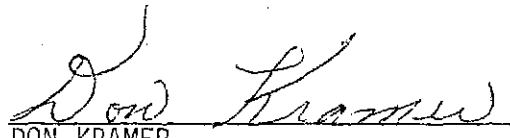
WHEREAS, in accordance with the adopted guidelines on minimum stream flow applications, the Board has conducted informal public meetings to determine public interest with respect to said applications; and,

WHEREAS, the Board has reviewed the public comments and has determined that each of the said applications is reasonable and in the public interest;

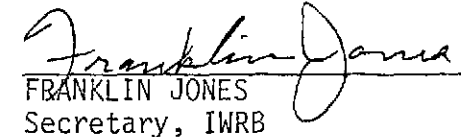
NOW, THEREFORE, BE IT Resolved that the Board request the Director to proceed with administrative actions on each of the five said applications.

Dated this 7th day of October, 1983.


GENE GRAY
Chairman, Minimum Stream
Flows Committee


DON KRAMER
Chairman, IWRB

Attest:


FRANKLIN JONES
Secretary, IWRB

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FIGURE 1. AVERAGE MONTHLY DISCHARGE, RAPID LIGHTNING CR. NR SAMUELS 1963-68



TABLE 1. GROUSE CREEK, Miscellaneous Measurements During Month (cfs)

<u>Water Year</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>
1959	9.0											14.8
1960	108		109	63.9			290	319	219	16.1	14.4	
1961	8.1	35.7	74.5	55.8	161		303	804	697	26.4	6.4	5.7
1962		8.7	18.3	21.8	53.2		153	328	430	6.0		14.0
1963	24.7		88.8	62.9	111	80.9		484	58.6	12.5		4.3
1964	6.8	243	40.3		32.5	30.9	290	1060	264	33		12.1
1965	24		100	57.1		103	846		342	21.8		13.1
1974												9.1
1975												30.8
1976												27
1977						32	182*	230*		91	15	
1978											6.3	
1979												
1980												7.6

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* Average of several measurements

On September 21, 1983 copies of the attached letters and materials were sent to the legislators, property owners and waterusers identified on the attached mailing labels.

Sharla Curtis
SHARLA CURTIS

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MINIMUM STREAM FLOW
Fact Sheet

Water Right No.: 96-7979

Source: Lightning Creek

Applicant: Idaho Water Resource Board

Requesting Agency: Idaho Department of Fish and Game

Date Application Filed: June 19, 1981

<u>Rate of Flow:</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
	49	49	84	84	53	53	49	49	49	49	49	49 cfs

Location of Reach: From the confluence with Clark Fork within the SW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 3, Township 55 North, Range 2 East, upstream approximately 8 miles to the confluence with the East Fork in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 32, Township 57 North, Range 3 East.

Purpose: To maintain trout spawning and rearing.

Public Meeting: Thursday, September 29, 1983, at the Sandpoint Community Hall, 204 S. 1st in Sandpoint, 7:30 p.m.

Water Right No.: 96-7980

Source: Grouse Creek

Applicant: Idaho Water Resource Board

Requesting Agency: Idaho Department of Fish and Game

Date Application Filed: June 19, 1981

<u>Rate of Flow:</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
	14	14	14	85	85	67	67	14	14	14	14	14 cfs

Location of Reach: From the confluence with the Pack River within the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 4, Township 58 North, Range 1 West, upstream about 5 miles to the county road bridge in the SE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 25 Township 59 North, Range 1 West.

Purpose: To maintain trout rearing and spawning habitat.

Public Meeting: Thursday, September 29, 1983, at the Sandpoint Community Hall, 204 S. 1st in Sandpoint, 7:30 p.m.

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JUL 12 1988



State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS

Governor

A. KENNETH DUNN

Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

September 16, 1983

Senator Kermit V. Kiebert
Box 187
Hope, ID 83836

RE: Public Meeting Regarding Water Rights for Minimum Stream Flows

Dear Senator Kiebert:

The Idaho Water Resource Board is planning to hold a public meeting to solicit public input and reaction to two minimum streamflow applications for water rights proposed in or near your legislative district.

One application on Grouse Creek and one application on Lightning Creek will be reviewed at a meeting at the Sandpoint Community Hall at 7:30 p.m. on Thursday, September 29. Please find enclosed a fact sheet regarding the applications and a brochure which describes the minimum streamflow procedure.

On behalf of the Idaho Water Resource Board, you are cordially invited to attend.

Sincerely,

A handwritten signature in dark ink, appearing to read "David R. Tuthill, Jr.", is written over the typed name.

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosures

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State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS

Governor

A. KENNETH DUNN

Director

Mailing address:

Statehouse

Boise, Idaho 83720

(208) 334-4440

September 16, 1983

Rep. Tim Tucker
K. V. Ranch
Porthill, ID 83853

RE: Public Meeting Regarding Water Rights for Minimum Stream Flows

Dear Representative Tucker:

The Idaho Water Resource Board is planning to hold a public meeting to solicit public input and reaction to two minimum streamflow applications for water rights proposed in or near your legislative district.

One application on Grouse Creek and one application on Lightning Creek will be reviewed at a meeting at the Sandpoint Community Hall at 7:30 p.m. on Thursday, September 29. Please find enclosed a fact sheet regarding the applications and a brochure which describes the minimum streamflow procedure.

On behalf of the Idaho Water Resource Board, you are cordially invited to attend.

Sincerely,

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosures

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JUL 12 1988



State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS

Governor

A. KENNETH DUNN

Director

Mailing address:

Statehouse

Boise, Idaho 83720

(208) 334-4440

September 16, 1983

Rep. James F. Stoicheff
615 Lakeview
Sandpoint, ID 83864

RE: Public Meeting Regarding Water Rights for Minimum Stream Flows

Dear Representative Stoicheff:

The Idaho Water Resource Board is planning to hold a public meeting to solicit public input and reaction to two minimum streamflow applications for water rights proposed in or near your legislative district.

One application on Grouse Creek and one application on Lightning Creek will be reviewed at a meeting at the Sandpoint Community Hall at 7:30 p.m. on Thursday, September 29. Please find enclosed a fact sheet regarding the applications and a brochure which describes the minimum streamflow procedure.

On behalf of the Idaho Water Resource Board, you are cordially invited to attend.

Sincerely,

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosures

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September 16, 1983

Re: Minimum Stream Flow Application on Grouse Creek

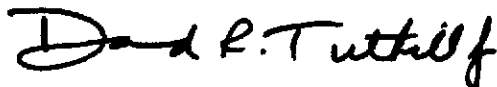
Dear Wateruser:

The Idaho Water Resource Board will be holding a public meeting to solicit public input regarding a proposed minimum streamflow water right on a reach of Grouse Creek. According to the records of this Department, you have a water right for which the point of diversion is located in or near the proposed minimum streamflow reach.

Information describing the application and the time and place of the meeting is shown on the enclosed fact sheet. Also enclosed is a brochure which describes the minimum streamflow procedure.

At the meeting you will have an opportunity to learn more about the application and to express your views. On behalf of the Idaho Water Resource Board, you are cordially invited to attend.

Sincerely,



DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosures

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September 16, 1983

Re: Minimum Stream Flow Application on Grouse Creek

Dear Property Owner:

The Idaho Water Resource Board will be holding a public meeting to solicit public input regarding a proposed minimum streamflow water right on a reach of Grouse Creek. According to the records at the county courthouse, you are one of the owners of property adjacent to the reach where the minimum streamflow is proposed.

Information describing the application and the time and place of the meeting is shown on the enclosed fact sheet. Also enclosed is a brochure which describes the minimum streamflow procedure.

At the meeting you will have an opportunity to learn more about the application and to express your views. On behalf of the Idaho Water Resource Board, you are cordially invited to attend.

Sincerely,

David R. Tuthill Jr.

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosures

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W

96-7980

Ben Nickerson
Samuels, ID 83862

Mike F. Harrington
Jack & Grace Popplewell
Samuels, ID 83862

W. W. & J. F. McNall
Samuels, ID 83862

Anthony H. Edwards
Samuels, ID 83862

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George W. Langford
Samuels, ID 83862

Alfred R. Krebs
Samuels, ID 83862

Harvey & Betty Rutherford
Box 168
Samuels, ID 83862

F. M. Balison
Rt. 1, Box 166
Samuels, ID 83862

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Frank & Judith Kerns
Rt. 1, Box 160
Samuels, ID 83862

Monroe C. Noble
Samuels, ID 83862

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JUL 12 1988

Irene V. Stonedahl
9150 Malad
Boise, ID 83704

Rocco Tucci
543 N. Lamb Blvd. #50
Las Vegas, NV 89110

Compton White
Box 8
Clark Fork, ID 83811

Esther Widgren
Box 4
Clark Fork, ID 83811

Roy Wood
Box 1621
Sandpoint, ID 83864

returned

Cleone B. Zavislak
2281 Mt. Vernon
Riverside, CA 92507

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F. M. Balison
Rt. 1, Box 166
Samuels, ID 83862

Leo Bunker
Box 837
Sandpoint, ID 83864

Jack W. & Carol Dollahite
409 Magnolia
Costa Mesa, CA 92627

James M. Dunn
Rt. 1, Box 156
Samuels, ID 83862

Dale G. Gosney
Rt. 1, Box 170
Samuels, ID 83862

Frank Kerns, Jr.
Rt. 1, Box 160
Samuels, ID 83862

Harold A. Krebs
Rt. 1, Box 22
Samuels, ID 83862

J. Francis McNall
Rt. 1, Box 25
Samuels, ID 83862

Dennis M. McNall
Rt. 1, Box 26
Samuels, ID 83862

George A. Miller
Rt. 1, Box 27
Samuels, ID 83862

James McNall
Box 1622
Sandpoint, ID 83864

Floyd Pulham
Box 52
Naalehu, HI 96772

Harvey F. Rutherford
Rt. 1, Box 168
Samuels, ID 83862

Jerry L. & Dorothea Van Doyen
HCR 66 Box 38
Sandpoint, ID 83864

George Weiss
Rt. 1, Box 155
Samuels, ID 83864

Dave Reynolds
Star Rt. Box 338
Hope, ID 83836

Allen W. Rolfson
Rt. 2, Sunyside Rd.
Prescott, AZ 86301

Mark Samson
1603 Manitou
Boise, ID 83706

Merle Samson
2409 Robert St.
Boise, ID 83705

Joseph Schmidt
4634 Good Dr.
New Orleans, LA 70127

Dan G. Taylor
1531 Lily St.
El Cajon, CA 92021

Bernard Silva
94437 Nui St.
Mililani Town, HI 96789

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Grouse Creek Land Owners

F.M. Balison	Route 1, Box 166 - Samuels, ID 83862
Leo Bunker	P.O. Box 837 - Sandpoint, ID 83864
Jack W. and Carol Dollahite	409 Magnolia - Costa Mesa, CA 92627
James M. Dunn	Route 1, Box 156 - Samuels, ID 83862
Dale G. Gosney	Rt. Box 170 - Samuels, ID 83862
Frank Kerns, Jr.	Route 1, Box 160 - Samuels, ID 83862
Harold A. Krebs	Route 1, Box 22 - Samuels, ID 83862
J. Francis McNall	Route 1, Box 25 - Samuels, ID 83862
Dennis M. McNall	Route 1, Box 26 - Samuels, ID 83862
James McNall	Box 1622 - Sandpoint, ID 83864
George A. Miller	Route 1, Box 27 - Samuels, ID 83862
Floyd Pulham	P.O. Box 526 - Naalehu, HI 96772
Harvey F. Rutherford	Route 1, Box 168 - Samuels, ID 83864
Jerry L. and Dorothea Van Doyen	HCR 66 Box 38 - Sandpoint, ID 83864
George Weiss	Route 1, Box 155 - Samuels, ID 83864

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JUL 12 1988

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SEP 19 1983

Department of Water Resources

Dave Reynolds

Allen W. Rolfson

Mark Samson

Merle Samson

Joseph Schmidt

Dan G. Taylor

Bernard Silva

Irene V. Stonedahl

Rocco Tucci

U.S.F.S.

Compton White

Esther Widgren

Roy Wood

Cleone B. Zavislak

Star Route, Box 338 - Hope, ID 83836

Route 2, Sunnyside Rd. - Prescott, AZ 86301

1603 Manitou - Boise, ID 83706

2409 Robert Street - Boise, ID 83705

4634 Good Drive - New Orleans, LA 70127

1531 Lily Street - El Cajon, CA 92021

94437 Nui Street - Mililani Town, HI 96789

9150 Malad - Boise, ID 83704

543 N. Lamb Blvd. #50 - Las Vegas, NV 89110

Address unavailable

P.O. Box 8 - Clark Fork, ID 83811

Box 4 - Clark Fork, ID 83811

P.O. Box 1621 - Sandpoint, ID 83864

2281 Mt. Vernon - Riverside, CA 92507

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JUL 12 1988



FOR IMMEDIATE RELEASE

September 9, 1983

State of Idaho, Statehouse, Boise, Idaho 83720

Phone: (208) 334-4440

NEWS RELEASE

BOISE---Minimum stream flow applications on Lightning and Grouse Creeks in Bonner County will be discussed at a public meeting September 29 at 7:30 p.m., Sandpoint Community Hall, 204 South First, Sandpoint.

In application #96-7979, the Idaho Water Resource Board (IWRB) seeks variable flows each month in the year to maintain trout spawning and rearing. The proposed reach of Lightning Creek extends from the confluence with the Clark Fork upstream eight miles.

The application seeks the following flows: January through March, 49 cubic feet per second (cfs); April, May, 84 cfs; June, July, 53 cfs, with 49 cfs between August and December.

A second minimum stream flow application, #96-7980, also seeks a varying flow, from the mouth of Grouse Creek upstream about five miles to the county road bridge. According to Gene M. Gray, vice chairman, Idaho Water Resource Board, the flows would maintain trout spawning and rearing habitat in the five mile reach.

The requested rates of flow are: January through March, 14 cubic feet per second; April, May, 85 cfs; June, July, 67 cfs, with 14 cfs sought for August through December. Both applications were filed by the Idaho Water Resource Board at the request of the Idaho Department of Fish and Game. Staff from that agency will attend the meeting to answer questions and discuss the applications.

more

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Lightning/Grouse Creeks

page 2

Gray encourages anyone who wishes to comment on either the Lightning Creek or Grouse Creek applications to attend the meeting. The board, he said, has the option of changing or withdrawing the applications, based on public comment, although it may choose to pursue the applications as filed.

As required by law, the Idaho Department of Water Resources will schedule public hearings on the two applications, probably in November, Gray said. After the hearings, the applications, unless withdrawn by the board, are reviewed by the director of the Idaho Department of Water Resources for approval or denial. If approved, the applications are then sent to the Idaho Legislature, which may approve or reject them.

Gray stressed that the minimum stream flow applications, if approved, are junior to older, established water rights with earlier priorities.

-30-

Kay Weaver
Information Specialist

MAIL ROOM

JUL 12 1988

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NOTICE OF APPLICATION FOR MINIMUM STREAM FLOW

SEP 14 1983

Department of Water Resources

Notice is hereby given that the Idaho Water Resource Board has on June 19, 1981, submitted two (2) Applications for Permit to the Department of Water Resources proposing the appropriation of water to preserve the minimum streamflows from the following sources of water which are further described as follows:

APPLICATION NO. 96-7979

Source: Lightning Creek, tributary to Pend Oreille Lake

Location of Minimum Streamflow Reach: SWNE Sec. 3, T55N, R02E, B. M., upstream approx. 8 miles to confluence with East Fork in the SWSW Sec. 32, T57N, R03E, B. M., Bonner County.

Rate of Flow and Season of Use:	<u>Rate</u>	<u>Period of Use</u>
	49.0 CFS	8/1 to 3/31
	84.0 CFS	4/1 to 5/31
	53.0 CFS	6/1 to 7/31

Use: To maintain trout spawning and rearing habitat.

APPLICATION NO. 96-7980

Source: Grouse Creek, tributary to Pack River.

Location of Minimum Streamflow Reach: SESW Sec. 4, T58N, R01W, B. M., upstream approx. 5 miles to the county road bridge in the SENE Sec. 25, T59N, R01W, B. M., Bonner County.

Rate of Flow and Season of Use:	<u>Rate</u>	<u>Period of Use</u>
	14.0 CFS	8/1 to 3/31
	85.0 CFS	4/1 to 5/31
	67.0 CFS	6/1 to 7/31;

Use: To maintain trout spawning and rearing habitat.

The Idaho Water Resource Board will hold a Public Meeting on the applications at 7:30 p.m., on Thursday, September 29, 1983, in the Sandpoint Community Hall 204 S. 1st St., Sandpoint, Id., for the purpose of gathering information about public interest with regard to the above minimum stream flow applications. If issued, these permits will be subject to all prior water rights.

DONALD R. KRAMER
Chairman--Idaho Water Resource Board

Published in the Sandpoint Daily Bee on September 14 and 21, 1983.

MAINTAINED
JUL 12 1988

ATTENDANCE ROSTER

MSF-Lightning Creek 96-7979 & GROUSE CR 96-7980
Hearing
November 17, 1983

DUAL HEARING

Do you wish
to make a
statement?

NAME

ADDRESS

REPRESENTING



MIKE RUSKEY	P.O. 1821 SANDPOINT, ID.	TROUT UNLIMITED (yes)
Karen Pratt (Pratt)	2320 Government Way Coeur d'Alene Id	Fish and Game (yes)
Jan Mehler	P.O. Box 1589, Sandpt. Id	LPOIC
Grace Kierman	2320 Govt. Way Coeur d'Alene, ID	IDA FFG
James E. White	Box 158 Clark Fork, Idaho	INDIVIDUAL
Patterson R. Burkin	PO Box 432 Clark Fork, Id.	Individual
John R. Burkin	" " " " " "	" "
Carl Mayo	PO BX 128 Colburn Id	Self
John Andrechak	600 Grouse Cr. Rd	
Marilyn McIntyre	PO BX 184 Colburn Id	Self no
Jim Kelly	"	Self no
Ted Clark	Box 11 Kootenai ID	BANNER CO SPORTSMEN
Bob Chapman	Box 149 Colburn, ID 83865	Grouse Creek Yes
Mick Redman	Box 31 Colburn Id 83865	Grouse Creek
C. Nichols	K.SPT Radio	NO
Terri Redman	Box 125 Colburn ID, 83865	Grouse Creek
Thomas E. Cooke (Cooke)	Box C Sandpoint, Idaho 83864	Rolland Derr
Caland Hurr (Derr)	Box 176 CLARKS Fork Id	83811

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list
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Id Dept of Water Resources
Hearing on 96-7979 & 96-7980
FULL PARTY MAILING LIST

Nov 17, 1983

- ✓ Idaho Water Resource Board
Statehouse
Boise Id 83720
- ✓ Idaho Department of Fish and Game
Attn: Mr. Steve Goddard
Statehouse
Boise Id 83720
- Lake Pend D'Orielle Trout Club
c/o Tom Mehler
P.O. Box 1589
Sandpoint Id 83864
- ✓ Trout Unlimited, Idaho Panhandle Chapter
c/o Mike Ruskey
P.O. Box 1821
Sandpoint Id 83864
- ✓ Mr. Thomas Cooke
Box C
Sandpoint, Id 83864
- Ms. Vicki Younger
Box 149
Colborn Id 83865

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See
Slides in file

96-7980 SLIDES



State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

November 30, 1983

John Andrechak
600 Grouse Creek Rd.
Colburn, ID 83865

RE: Minimum Streamflow Application No. 96-7980, Grouse Creek

Dear Mr. Andrechak:

Enclosed please find 30 copies of a brochure entitled Minimum Streamflows. Per a request by Mr. Norm Young, we would appreciate it if you could make these brochures available to other property owners in the Grouse Creek drainage.

Sincerely,

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:ns

Enclosures

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DEPARTMENT OF WATER RESOURCES
STATE OF ID
BOISE, IDAHO 83720

Photos
Exhibits TM-1, TM-2, TM-3

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TWP 57N R3E BM
BONNER COUNTY

ROLLAND DERR
TRACT

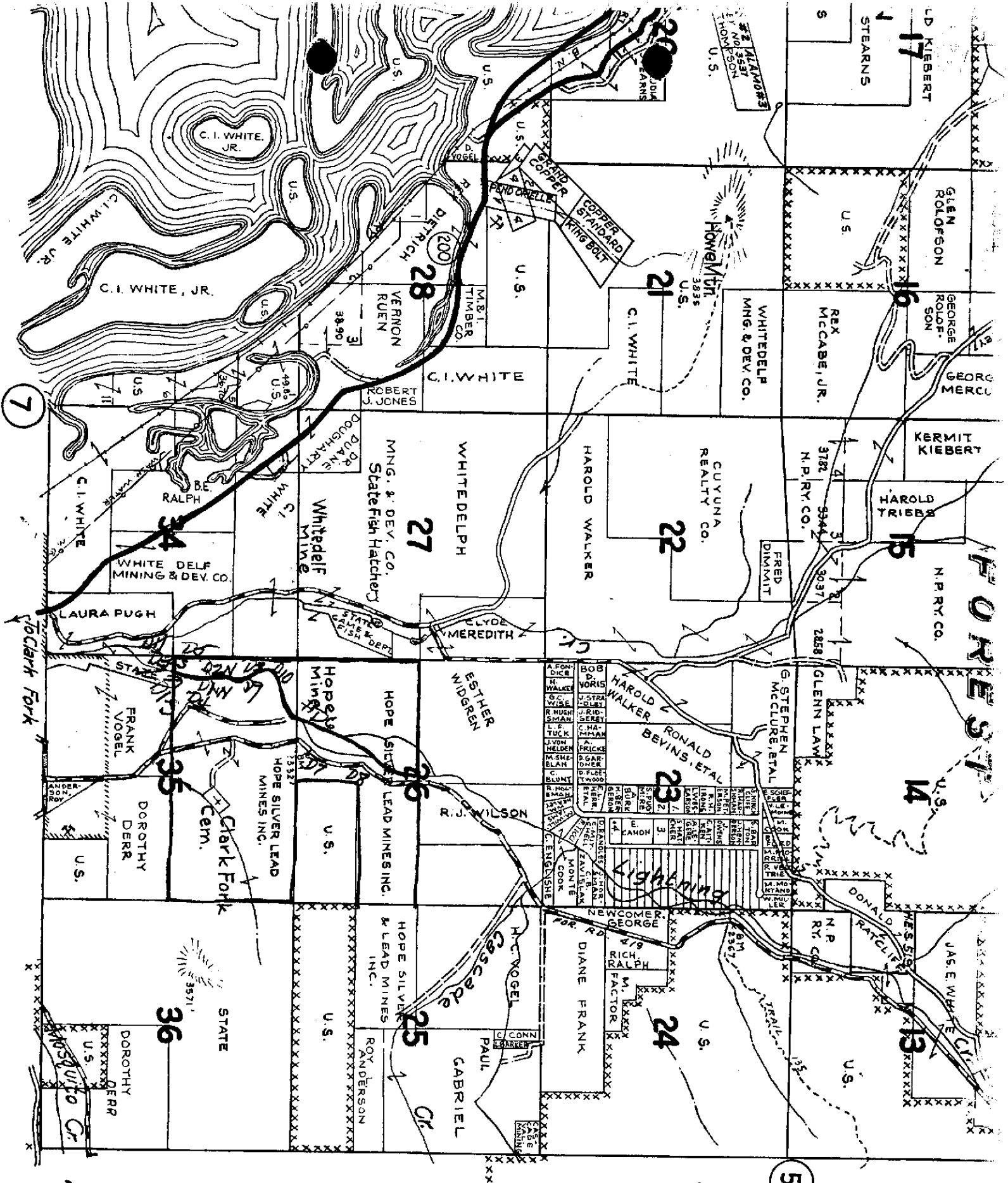
LIGHTENING CREEK
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- IMPROVED ROADS
- DIRT ROADS
- INFERIOR ROADS
- RAILROADS
- TRAILS
- INTERMITTENT CREEKS
- NATL FOREST BDRY.



Don
ca

DEPARTMENT OF PUBLIC RESOURCES
STATEHOUSE
BOISE, IDAHO 83720

Photos
Exhibits D-1 thru D-11

Note Filmed: See Photos in file

Tim Cochnauer
Principal Fishery Research Biologist
Idaho Department of Fish and Game
Coeur d'Alene, Idaho

Education:

1967: Bachelor of Science, University of Oklahoma, Norman, Oklahoma.
1973: Master of Science, University of Oklahoma, Norman, Oklahoma.
Present: Doctorate student in Fishery Management, University of Idaho, Moscow, Idaho.

Instream Flow Work Experience:

Idaho Department of Fish and Game: Project Leader, Instream Flow Investigations, 1974-79. Identified flow needs for fish and wildlife resources on approximately 100 streams or stream reaches in Idaho. Portions of these studies were funded by the U.S. Fish and Wildlife Service, Idaho Department of Water Resources and U.S. Bureau of Reclamation.

Idaho Department of Fish and Game: Project Leader, U.S. Bureau of Land Management Instream Flow Investigations. Ongoing study. A four-year study to determine instream flow needs on 60 streams located on BLM lands throughout Idaho.

Intragovernmental Personnel Assignment to U.S. Fish and Wildlife Cooperative Instream Flow Group, 1977. Assisted in development of new methodologies for determining instream needs for fish and wildlife resources.

Conference, Workshop and Seminar Participation:

American Fisheries Society Instream Flow Needs Conference, 1976, Boise, Idaho.

Pacific Fishery Biologists Instream Flow Session, 1976, Ocean Shores, Washington.

U.S. Fish and Wildlife Service Instream Flow State-of-the-Art Workshop, 1975, Logan, Utah.

Idaho Water Resource Research Institute Instream Flow Seminar, 1978, Moscow, Idaho.

U.S. Fish and Wildlife Service Instream Flow Conference for Idaho, 1977, Boise, Idaho.

U.S. Fish and Wildlife Service Instream Flow Computer Programs Workshop, 1977, Salt Lake City, Utah.

American Fisheries Society, Nevada Chapter, Instream Flow Seminar, 1977, Las Vegas, Nevada.

Idaho Department of Fish and Game. Instream Flow Training Workshop for Regional Managers and Biologists, 1981, Lewiston, Idaho

U.S. Fish and Wildlife Service Instream Flow Strategies and Application Workshop, 1982, Portland, Oregon.

Handwritten signature and date stamp: JUL 12 1988

Instream Flow Publications:

- Bovee, Ken D. and Tim Cochnauer. 1977. Development and evaluation of weighted criteria, probability of use curves for instream flow assessments; fisheries. Instream Flow Information Paper No. 3. Cooperative Instream Flow Service Group, Fort Collins, Colo. 49 p.
- Cochnauer, Tim. 1976. Idaho Department of Fish and Game instream flow program status. In: Instream Flow Needs and Competing Uses for Water. Proceedings of a Joint Water Resources Seminar of the University of Idaho and Washington State University. Pp. 49-79.
- _____. 1976. Stream resource maintenance flow studies, 1976. Job Performance Report, F-69-R-1, Job II. Idaho Department of Fish and Game. 44 p.
- _____. 1976. Instream flow techniques for large rivers. Instream Flow Needs, Vol. II, American Fisheries Society, 1976.
- _____. 1977. Snake River stream resource maintenance flow studies, 1975-76. A Report with Recommendations to the US Bureau of Reclamation, Boise Office. Idaho Department of Fish and Game. 14 p.
- _____. 1977. Stream resource maintenance flow studies, 1977. Job Performance Report, F-69-R-2, Job II. Idaho Department of Fish and Game. 85 p.
- _____. 1977. Stream resource maintenance flow determinations for Box Canyon Springs. Idaho Department of Fish and Game. 10 p.
- _____. 1977. Snake River (American Falls Dam to Lake Walcott) stream flow study, 29 October - 10 November 1977. Idaho Department of Fish and Game. 31 p.
- _____. 1980. Snake River fisheries investigations, survey of fish populations and status of white sturgeon populations in the Snake River. Job Performance Report, Project F-73-R-2. Idaho Department of Fish and Game. 21 p.
- _____. 1980. Stream flow investigations. Job Completion Report. Idaho Department of Fish and Game. 16 p.
- _____ and Edwin Buettner. 1978. Stream flow investigations--stream resource maintenance flow determinations on Idaho streams. Job Performance Report, Project F-69-R-3, Job No. II. Idaho Department of Fish and Game. 88 p.
- Cochnauer, Tim and Bill Horton. 1981. A reference workbook for determining instream flow needs in Idaho. Idaho Department of Fish and Game. In Press.
- Cochnauer, Tim and Neil R. Hoyt. 1979. Stream flow investigations--stream resource maintenance flow determinations on Idaho streams. Job Performance Report, Project F-73-R-1. Idaho Department of Fish and Game. 50 p.

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Cochnauer, Tim and L. Brent Mabbott. 1981. Instream flow study, Bureau of Land Management. Annual Report, April 1981. Idaho Department of Fish and Game.

Cochnauer, Tim and Robert G. White. 1975. Stream resource maintenance flow studies, 1975. A Cooperative Study; Idaho Department of Water Resources, Idaho Department of Fish and Game and Idaho Cooperative Fishery Research Unit. 136 p.

Horton, William D. and Tim Cochnauer. 1979. Instream flow methodology evaluation, biological criteria determination, and water quality needs for selected Idaho streams. Stream Evaluation Project--Phase II, BOS, Western Water Allocation Projects, Contract No. 14-16-0001-77090. 177 p.

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Miscellaneous:

Since September 1974, I have been employed as a Fishery Research Biologist for the Idaho Department of Fish and Game. During the period 1974-79, I was assigned as the project leader on the Department's stream flow investigations project. My main duties were to formulate a program for developing instream flow needs for fish and wildlife resources on major streams throughout Idaho, and implement that program in subsequent years. During the five years of the project approximately 100 stream resource maintenance flow recommendations were developed and 50 applications for instream flow water rights were prepared in accordance with legislation that designated fish and wildlife resources as a beneficial use of water. I have attended Department of Water Resources' hearings on applications for stream flow water rights, and have appeared as an expert witness in support of the applications when reviewed by legislative committees.

During this period I was responsible for administering seven contracts to develop instream flow needs for streams on priority lists of several federal and state agencies. I have worked with the Idaho Department of Water Resources, Idaho Department of Parks and Recreation, U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, U.S. Bureau of Land Management, and U.S. Forest Service in coordinating stream flow studies and providing technical assistance to their personnel.

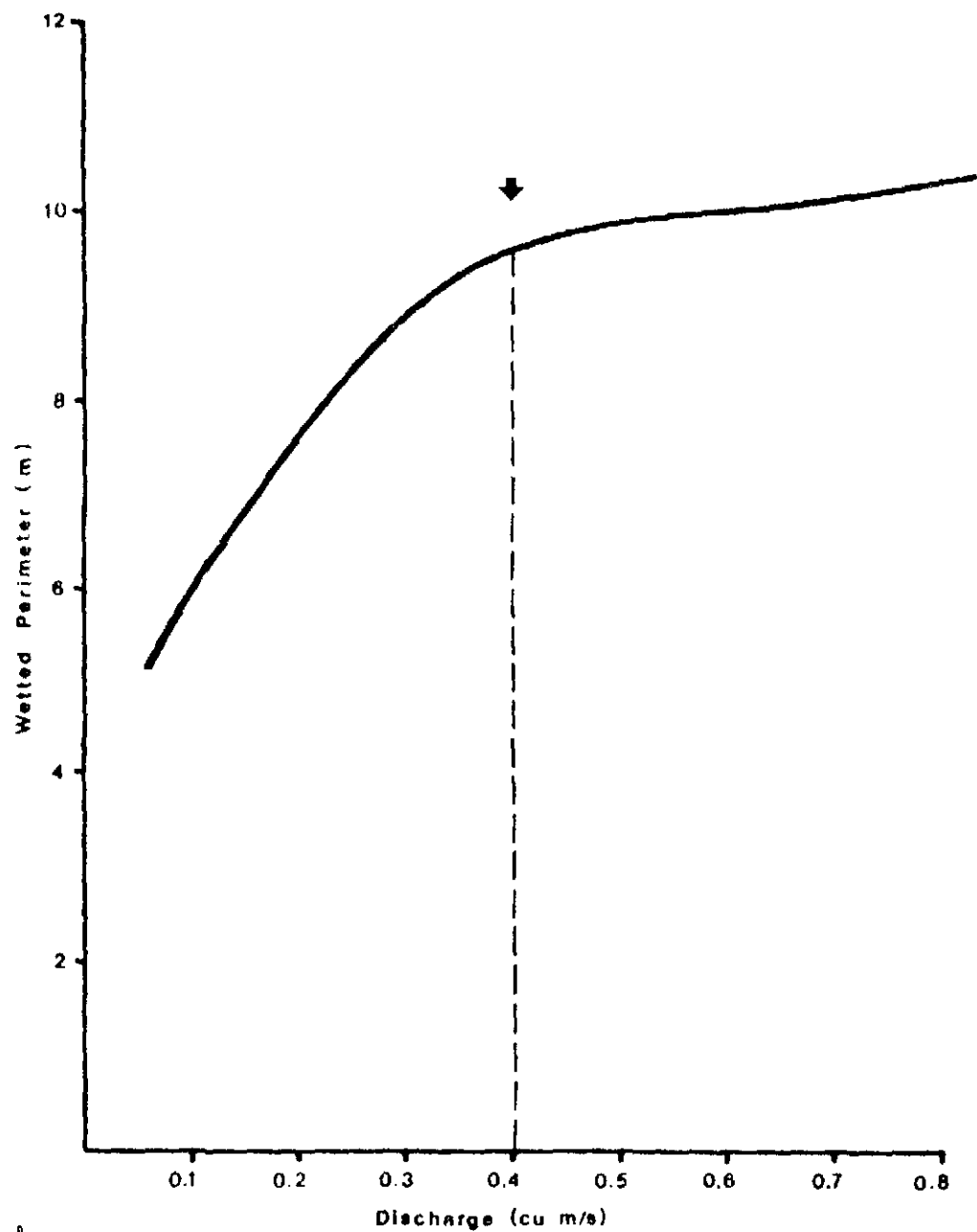
A major component in the assessment of instream flow needs is the evaluation of habitat loss with decreases in discharge for fish species of concern. Since 1974 I have been involved in the development of habitat requirements for most game fish species found in Idaho. In 1977, I was assigned to the U.S. Fish and Wildlife Service's Cooperative Instream Flow Service Group in Fort Collins, Colorado. One of major responsibilities at Fort Collins was to develop habitat curves for sixty cold and warm water game fish species. In 1977 and 1978, I was involved in field investigations to collect habitat requirement information for game fish species on 21 Idaho streams. Working as the project leader on the Department's stream flow investigations for five years and remaining as a technical consultant after that period has allowed me to become very familiar with the habitat requirements for game fish in Idaho and how that habitat is impacted by development.

During 1979-81, I was assigned as the project biologist on Department's Snake River investigations project. The objectives of this project have been to assess fish populations and collect white sturgeon life history data from the Snake River.

Since 1981, I have been assigned as a principal fishery research biologist coordinating research projects on northern Idaho lakes and supervising research projects on rivers and streams throughout the state. I have also continued to coordinate instream flow studies throughout the state.

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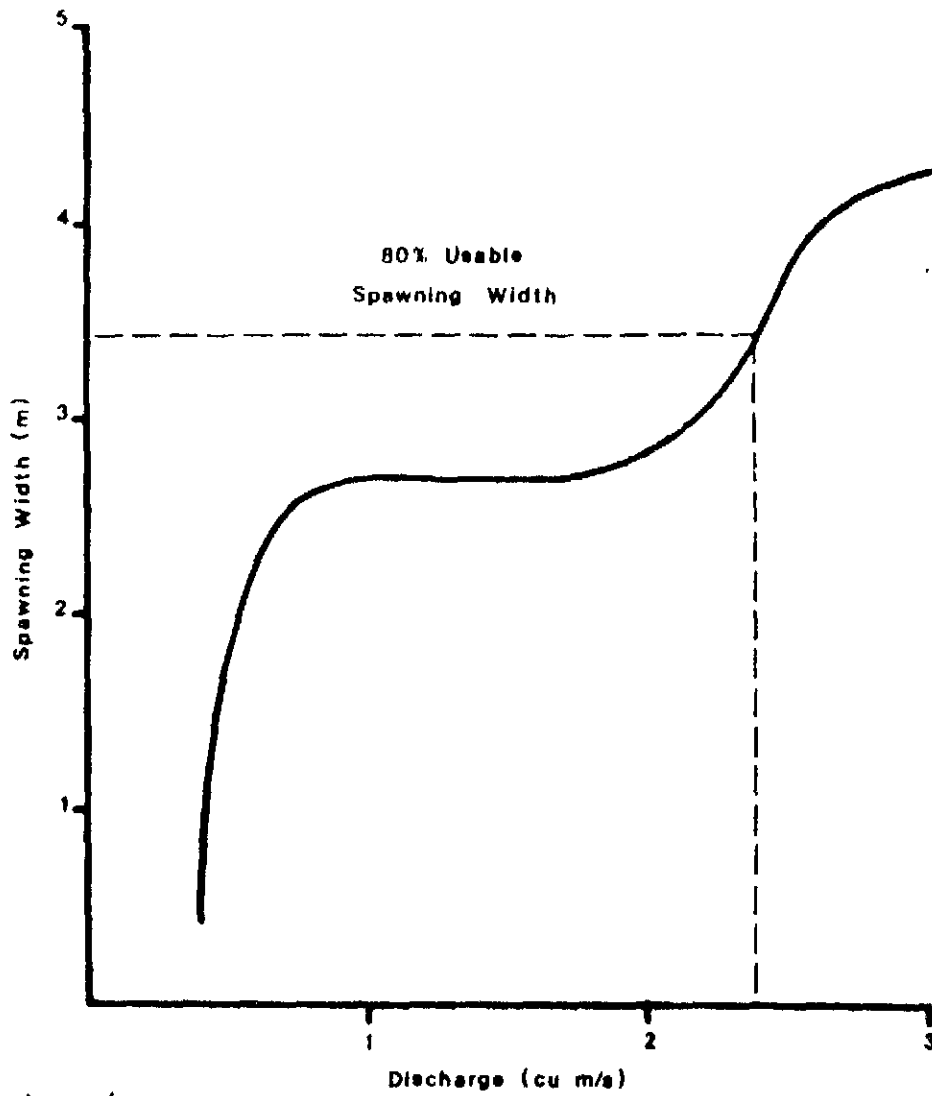
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front
Rearing habitat curve for Grouse Creek (1 cu m/s = 35 cfs)

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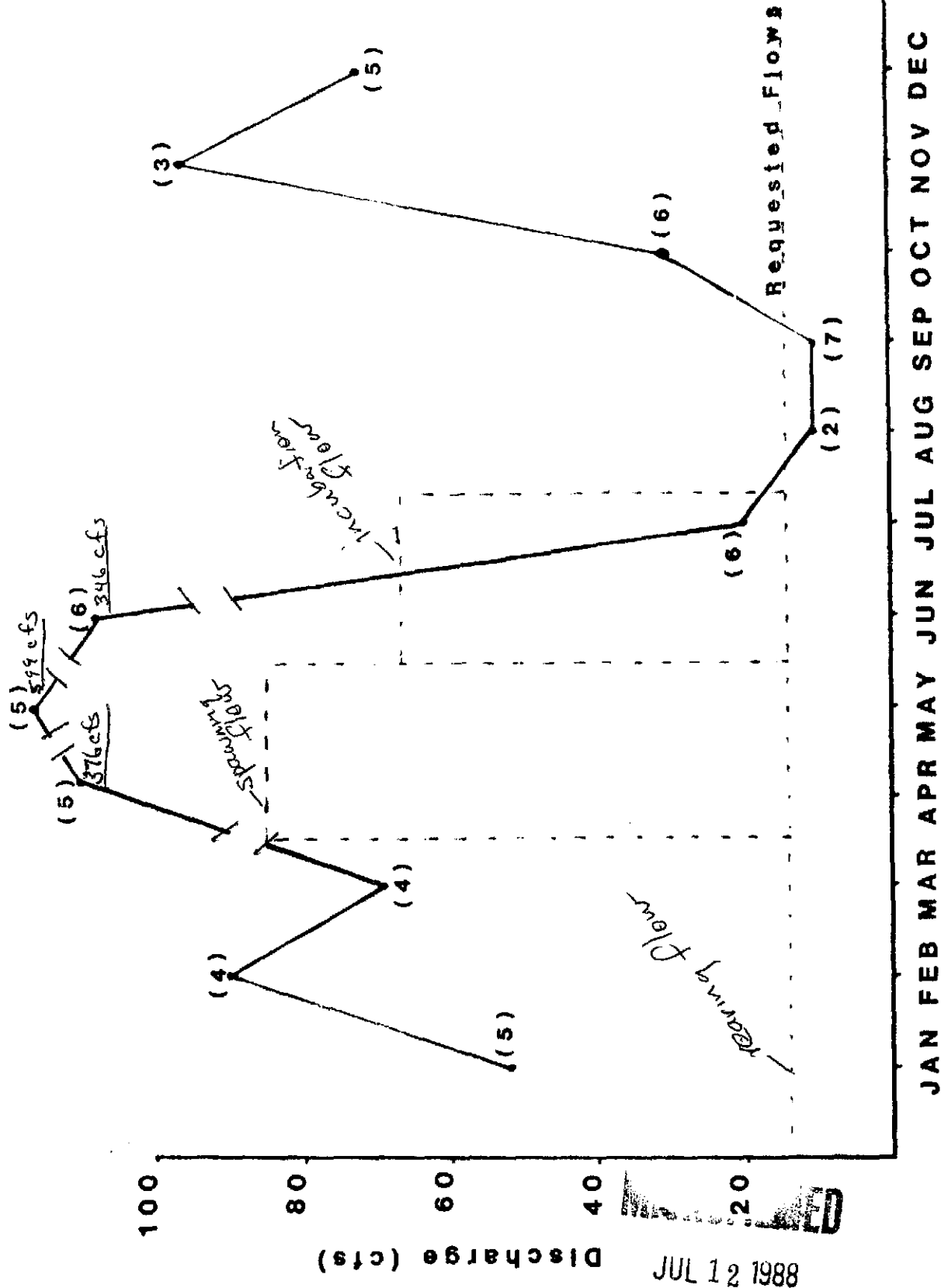
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*Kanboop*

Spawning habitat curve for Grouse Creek (1 cu m/s = 35 cfs)

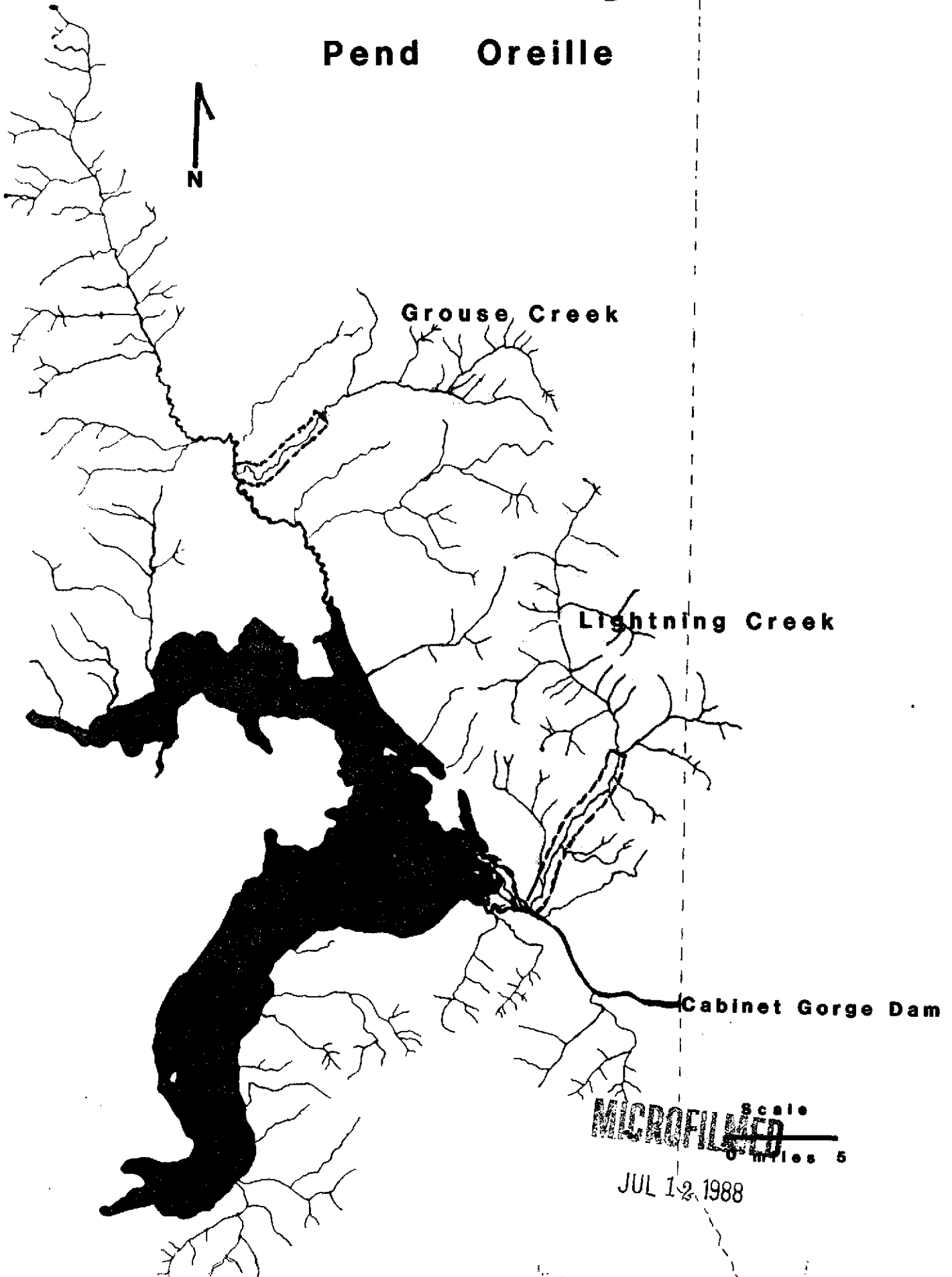
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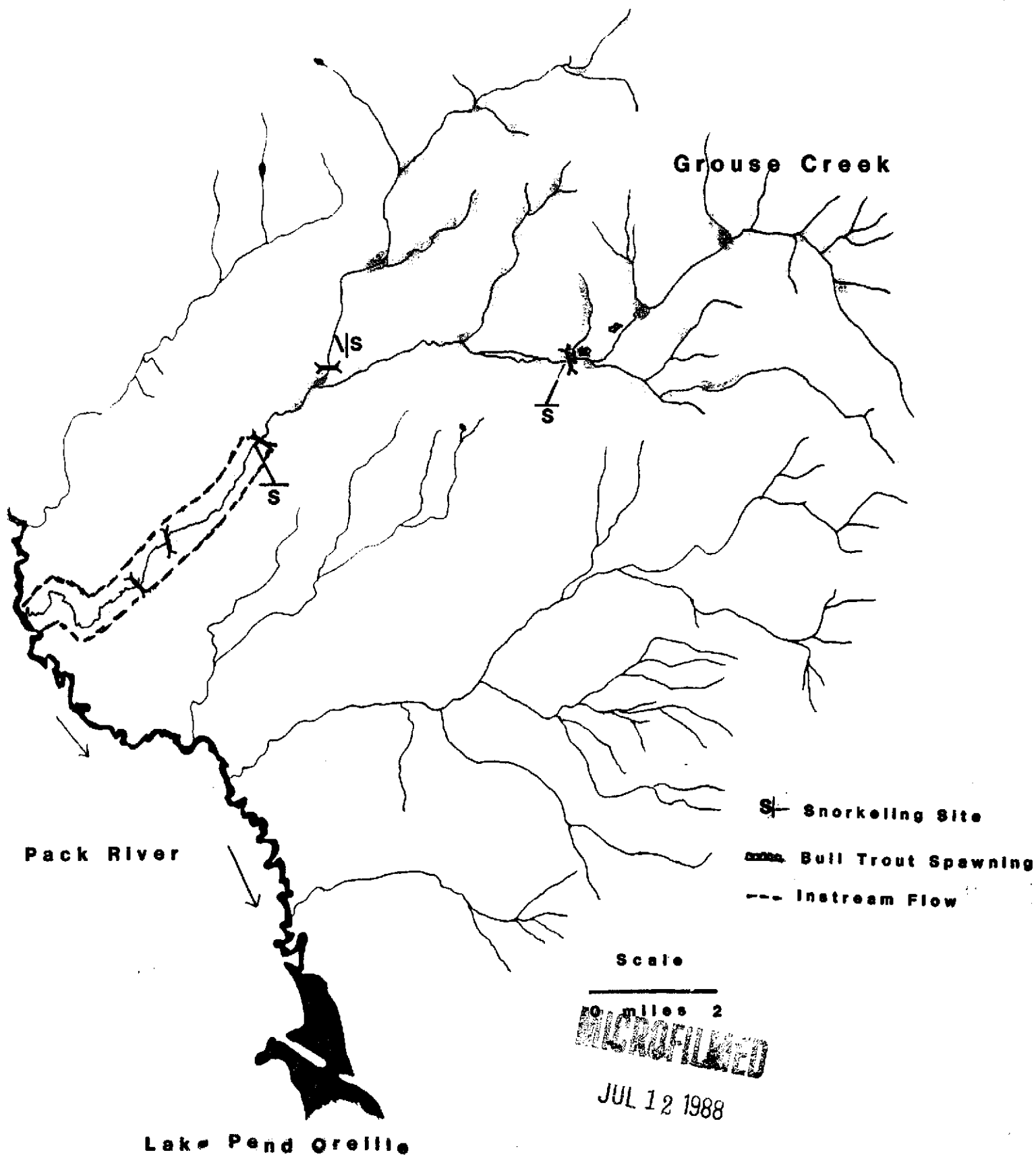
Miscellaneous streamflow measurements (solid line) for Grouse Creek near Colburn, Idaho. Measurements were taken 2 miles upstream from the mouth. Requested instream flows are also given (dashed line). Information is taken from U.S.G.S. data and datapoints are averages. Numbers in parentheses are numbers of measurements.

Pend Oreille



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0 miles 5

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IDAHO DEPARTMENT OF FISH AND GAME

Joseph C. Greenley, Director

FEDERAL AID TO FISH AND WILDLIFE RESTORATION

Job Performance Report

Projects F-53-R-12 & 13

LAKE AND RESERVOIR INVESTIGATIONS

Job IV-f. Kamloops Life History Studies in Pend Oreille Lake

by

William Goodnight
Regional Fishery Manager

Bruce Reininger
Biological Aide

Job IV-g. Separation of Kamloops Stocks in Pend Oreille Lake by Electrophoresis

by

Richard L. Wallace
Associate Professor of Zoology
University of Idaho

Arthur W. Rourke
Associate Professor of Zoology
University of Idaho

Age and Growth Characteristics of Pend Oreille Lake Kamloops

by

Robert Anderson
Biologist
Washington Water Power Company

January, 1978

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GENERAL INTRODUCTION

Kamloops studies were conducted during 1976 and 1977 at Pend Oreille Lake. The Idaho Department of Fish and Game utilized Dingell-Johnson funds for the majority of their effort in gathering Kamloops life history data (F-53-R-12 and 13, Job IV-f). Washington Water Power Company supplied a biological aide to assist in these studies.

The Department furnished Kamloops scale samples to Bob Anderson (Biologist for Washington Water Power Company) and he conducted the appropriate analysis.

The Department furnished equipment needed for a biochemical study of various groups of Kamloops from Pend Oreille Lake to determine if more than one stock of fish was present (F-53-R-12, Job IV-g). Dr. Richard Wallace and Dr. Arthur Rourke of the University of Idaho donated time and space to conduct these studies.

Results of these three segments are reported separately but because they are closely related, we have combined them under one cover.

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JOB PERFORMANCE REPORT

State of Idaho Name: LAKE AND RESERVOIR INVESTIGATIONS
Project No. F-53-R-12 & 13 Title: Kamloops Life History Studies in
Job No. IV-f Pend Oreille Lake
Period Covered: 1 March 1976 to 28 February 1977

ABSTRACT

During 1976 and 1977 we collected life history data on Kamloops trout in the Pend Oreille Lake drainage. We made trend counts of adult spawners in the major tributaries, snorkeled the tributary streams to evaluate abundance and movement of juvenile Kamloops and radio tagged adult fish to assess the presence of overwintering in the Clark Fork River.

Lightning Creek appeared to be the most significant spawning tributary on the lake; supporting about the same number of spawning adults as was found in the entire Pack River drainage. We estimated the total lake spawning escapement in 1977 to approximate 200 to 300 Kamloops.

Snorkeling data from the tributary streams showed an initial downstream movement of Kamloops fry from the upper spawning gravels to lower nursery areas. The presence of 1 to 2-year old fish in the lower tributaries, coupled with scale analysis data, indicated that a majority of the Kamloops juveniles reared in the tributaries before migrating to the lake.

Although the radio tagging data was not conclusive, it does indicate that fall-run Kamloops overwintered in the Clark Fork River in preparation for spawning the following spring.

Authors:

Bill Goodnight
Regional Fishery Manager

Bruce Reininger
Biological Aide

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RECOMMENDATIONS

Continue to monitor Kamloops escapement in trend areas of Lightning Creek (Spring Creek) and the Pack River drainage (North Fork of Grouse Creek).

Continue to preserve the remaining quality Kamloops spawning and rearing habitat by seeking land exchanges such as that which occurred on the North Fork of Grouse Creek between private landholders and the U.S. Forest Service.

Periodically check angler pressure on the Lightning Creek and Pack River drainages to assess the harvest of juvenile Kamloops.

Attempt to locate adult Kamloops in the Clark Fork River in the fall and winter months.

Set up a project to monitor the wild Kamloops program at the Clark Fork Hatchery by: (1) evaluating diets and spacial requirements for obtaining best growth and maximizing fecundity of first generation brood stock, and (2) evaluating survival of hatchery-released Kamloops through differential marking of known size and aged Kamloops and monitoring their return as adults.

OBJECTIVES

To estimate the relative abundance of predatory fish species in Pend Oreille Lake.

To locate major spawning areas in the tributaries of Pend Oreille Lake that are used by Kamloops trout and assess relative abundance of spawning fish.

To assess the presence of overwintering adult Kamloops in the Clark Fork River.

To locate major rearing areas that are utilized by sub-adult Kamloops in the tributaries of Pend Oreille Lake and evaluate the relative abundance of rearing fish.

To assess the size and age composition of sub-adult Kamloops rearing in the tributaries and evaluate age of migration to the lake.

To assess the age composition of adult Kamloops trout in the lake and note evidence of repeat spawning through scale analysis.

INTRODUCTION

Gerrard stock rainbow trout (Kamloops) were introduced into Pend Oreille Lake in the early 1940s. Eggs were obtained from the Gerrard spawning site on the Lardeau River, tributary to Kootenay Lake in British Columbia.

Gerrard stock rainbow are noted for attaining large size and having a voracious appetite for kokanee, their principle diet. Hartman (1969) speculated that physical factors at the Gerrard spawning site (substrate size

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water velocity, male aggression intensified by restricted spawning area) have provided genetic selection pressure enhancing the evolution or retention of large size.

Upon introduction of Kamloops to Pend Oreille Lake, a large population of kokanee enabled them to realize their size potential. First releases of yearling Kamloops in 1941 resulted in the world's record rainbow being harvested in 1947 (16.8 kg, 37 lb). In 1956, 101 Kamloops were caught which exceeded 9.1 kg (20 lb) and 220 which exceeded 8.4 kg (18.5 lb).

During the past 20 years, heavy reliance has been placed on hatchery broodstock to maintain the Kamloops fishery. An intensive marking program from 1968-1974 indicated a low contribution of hatchery fish to the trophy catch. This information revealed the dependancy of the fishery on wild reproduction, the need for information regarding the status of wild populations, and the need for different hatchery programs to supplement wild reproduction.

During the early 1960s, a fishery developed in the Clark Fork River during October and November. Average weight of fish caught ranged from 6.8 to 8.2 kg (15-18 lb) and 60-70% of the catch exceeded 6.8 kg (15 lb). The fishery lasted up to 6 weeks annually and yielded up to 220 fish. This fishery was the source of much controversy and disagreement as to why these fish entered the Clark Fork River in the fall. Some individuals felt they were fall spawners, others felt they were overwintering in preparation for spawning in the spring and others felt they were simply feeding on spawning runs of kokanee.

Since 1973, the average size of trophy Kamloops (>6.7 cm, 17 in) taken in the lake has declined steadily from nearly 5.4 kg (12 lb) to 3.2 kg (7 lb). This alarming decline in size also aroused additional concern for Kamloops populations and the need to ascertain population status.

TECHNIQUES USED

Downstream Migration

Kray-Meeke traps were used to help determine the age at migration of sub-adult Kamloops from the Pack River and Lightning Creek systems. One trap was placed in the North Fork of Grouse Creek, approximately 46 m (50 yd) upstream from the confluence with Grouse Creek, a tributary of the Pack River (Fig. 1). Two other traps were placed side by side in Spring Creek, approximately 46 m (50 yd) upstream from the confluence with Lightning Creek, and a fourth trap was located in Lightning Creek itself above the mouth of Spring Creek (Fig. 2). All of these locations are known Kamloops spawning areas. The North Fork of Grouse Creek trap was installed on 13 June and removed 9 August 1976. The traps in Spring and Lightning creeks were installed 29 June and removed 30 August 1976. On two occasions, 29 July and 5 August, one of the traps were removed from Spring Creek and placed in Granite Creek to check for migrating Kamloops fry. The trap was checked and removed after approximately 24 hours and replaced in Spring Creek. All traps were fished 24 hours a day and generally checked once a day.

In order to estimate the total number of fish migrating downstream past the

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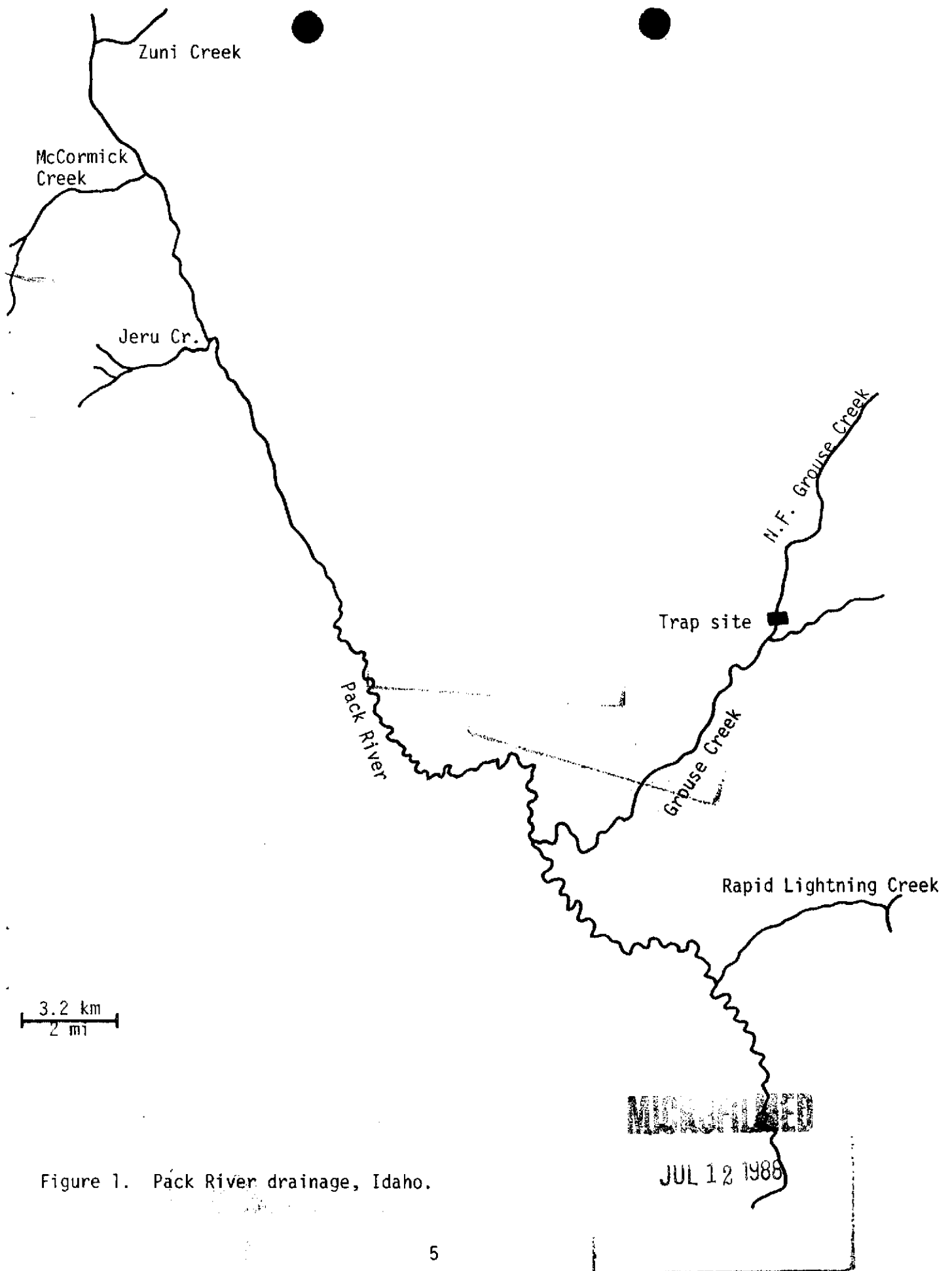


Figure 1. Pack River drainage, Idaho.

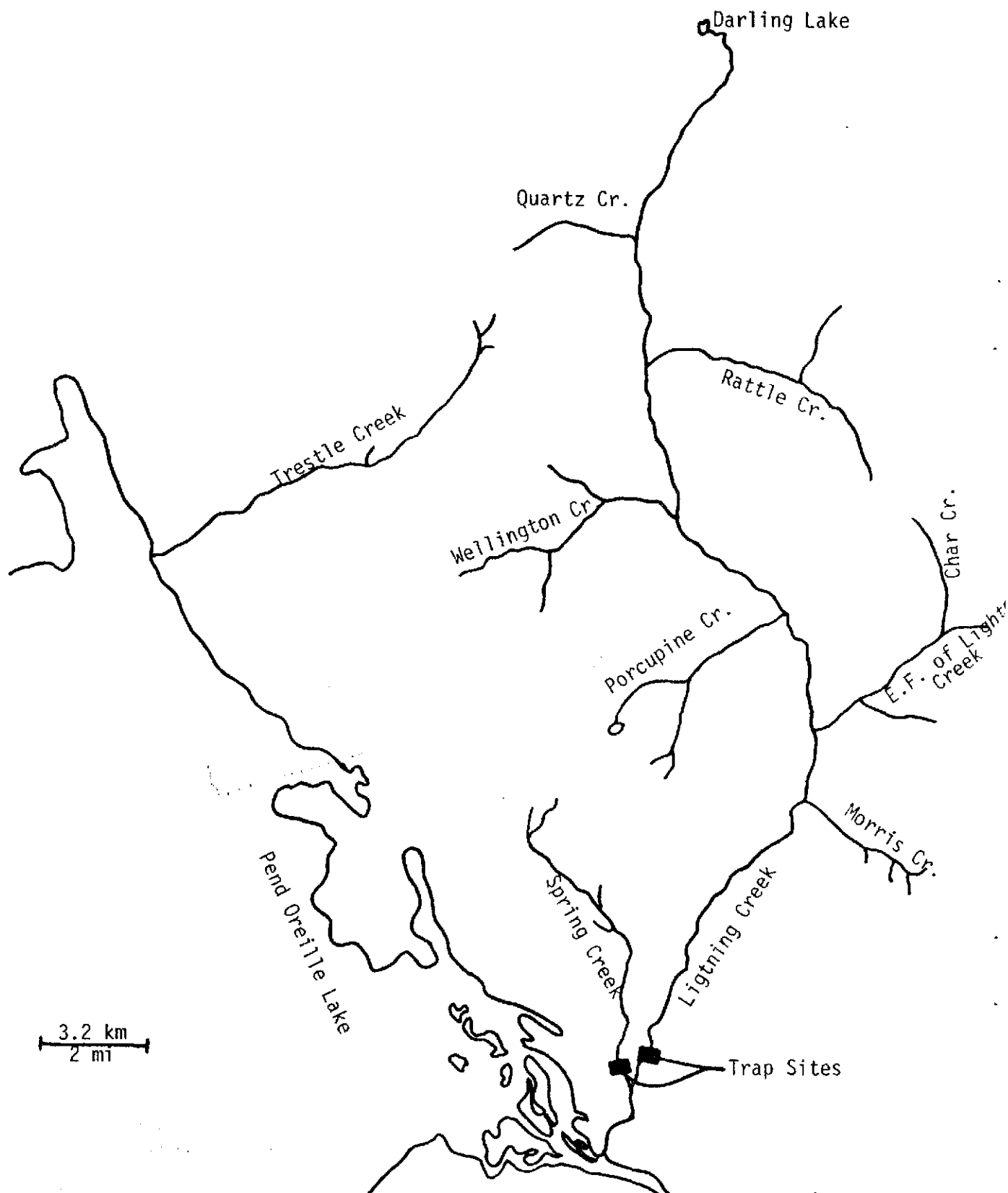


Figure 2. Lightning Creek drainage, Idaho.

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traps, a cross sectional area measurement of the trap site was necessary. The stream depth at 30.5 cm (1 ft) intervals across the width of the stream and flush with the face of the trap were recorded and the cross sectional area calculated. Occasionally, because of fluctuations in stream flow, the traps would have to be relocated within their respective streams so that they were fishing properly. Each time the traps were moved to a new location, a new cross sectional area measurement was taken.

All fish captured in the Kray-Meekin traps were identified as to species and those fish greater than 50 mm (2 in) in length were measured and their lengths recorded. Scale samples were taken from many of the juvenile Kamloops for age determination.

A Moeller thermograph was installed in the North Fork of Grouse Creek, approximately 18.3 m (20 yd) below the culvert on the North Fork, to monitor water temperatures on a 24-hour basis. The thermograph was checked and reset every 7 days and recorded water temperatures from 30 June through 9 August 1976. This information was then compared with daily and hourly fish migrations.

Hourly checks of the North Fork of Grouse Creek trap were made on 19 July and 27 July. The trap was checked each hour starting at 2100 hr and ending at 0500 hr on both occasions. The hourly migrational information was then compared with hourly water temperatures and night light intensity.

Snorkeling

A snorkeling program was initiated to aid in the assessment of the species composition, relative abundance and preferred rearing areas of sub-adult Kamloops in the Pack River and Lightning Creek systems. Several areas in the main channel of Pack River and Lightning Creek were snorkeled, as well as some major tributaries of each which were considered possible Kamloops rearing areas. Those tributaries snorkeled in the Pack River system were Rapid Lightning, Grouse and the North Fork of Grouse creeks (Fig. 1). Those tributaries snorkeled in the Lightning Creek drainage included Spring, Morris, East Fork of Lightning, Porcupine, Wellington, and Rattle creeks (Fig. 2). In each stream several riffles and pools were snorkeled in an attempt to locate all species of fish present in the system and to assess their percent composition and relative abundance. In most cases all fish present were counted, identified as to species (based on morphological characteristics) and their length estimated. In some cases it was not possible to count all the fish present due to either large numbers of fish or the large size of the stream. In these situations species composition was estimated directly. A mean relative abundance could not be accurately calculated as it was for streams in which the total number of fish observed could be counted.

Clark Fork River -- Overwintering Kamloops

During November of 1975 and 1976, we captured adult Kamloops in the Clark Fork River and fitted them with 50 megahertz radio tags (manufactured by the AVM Corporation) in order to determine whether they remained in the river over winter. These tags were 6 cm (2.4 in) long and weighed about 14 g (0.5 oz), have a range of approximately 0.4 km (1/4 mi) and a life expectancy of 6-7 months. Tags were inserted orally or surgically implanted in Kamloops collected from the

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Clark Fork River by hook and line. The locations of tagged fish were monitored by a receiver with the antenna mounted on a vehicle or boat.

We also employed angling on a limited basis during February of 1975 and 1976 to determine whether Kamloops were present in the Clark Fork River. In late December we attempted to use underwater lights to visually observe Kamloops that may have been present in the Clark Fork River.

Spawning Escapement

Foot surveys and snorkeling were used to ascertain utilization of spawning tributaries by adult Kamloops. We snorkeled during mid-summer in order to locate major rearing tributaries and were also able to identify spawning tributaries at this time by the presence of juvenile Kamloops.

During the spring of 1977, we operated weirs on Spring Creek (tributary to Lightning Creek) and Lightning Creek (tributary to the Clark Fork River).

We anticipated being able to maintain trapping facilities in Lightning Creek for only a short period due to onset of high water. We therefore opercle punched all Kamloops passing the Lightning Creek weir. We maintained the Spring Creek weir throughout the run and checked all fish captured at that site for opercle punches. The ratio of punched/unpunched fish observed at Spring Creek provided an indicator of the proportion of the total Lightning Creek run that we trapped and the magnitude of the total run.

FINDINGS

Downstream Migration

The trapping effort in the North Fork of Grouse Creek produced 6,526 Kamloop fry, ranging in size from 25-30 cm (1.0-1.2 in) in the early part of the migration to nearly 50 mm (2 in) toward the end of the migration. From the cross sectional area measurements the estimated total migration from the North Fork of Grouse Creek was 22,388 Kamloops fry. Kamloops fry migration from the North Fork occurred during July (Fig. 3). Also captured in the North Fork of Grouse Creek trap were 10 Kamloops juveniles greater than 50 mm (2 in) in total length (Table 1). No other species of fish was captured in the North Fork trap.

The total number of Kamloops fry captured in Spring Creek was 2,232 for an estimated total migration of 8,680 fry. Kamloop fry moved out of Spring Creek from mid-July through August (Fig. 4). Spring Creek also produced the largest number of fish species greater than 50 mm (2 in) in total length (Table 1).

In Lightning Creek, 24 Kamloops fry were trapped for an estimated total migration of 444 fry. Wild rainbow was the primary species of fish captured in the trap that exceeded 50 mm (2 in) in length and consisted of six individuals (Table 1).

On both occasions that a trap was fished in Granite Creek, a Dolly Varden juvenile was captured but no Kamloops fry were captured on either occasion.

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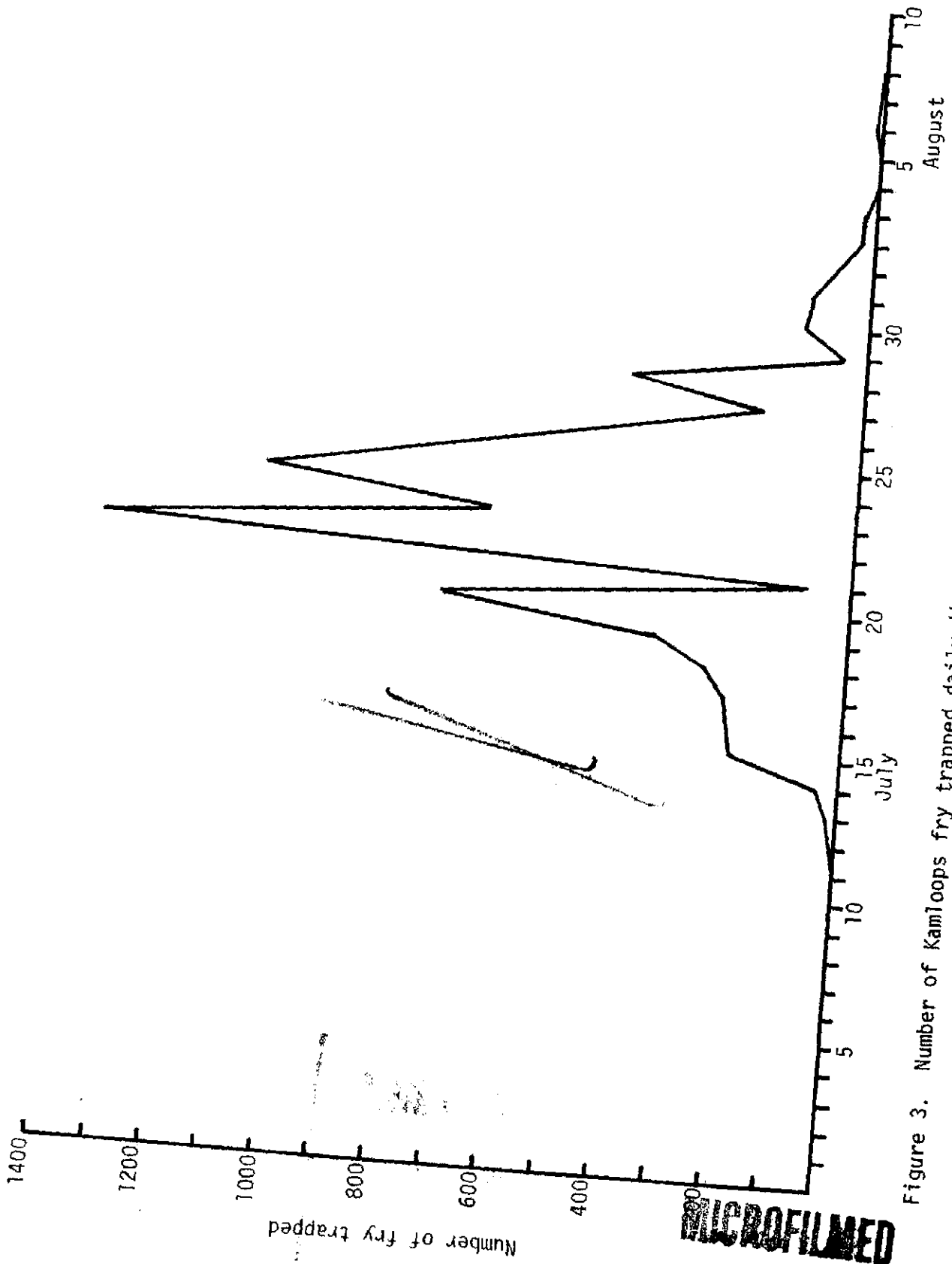


Figure 3. Number of Kamloops fry trapped daily through the North Fork of Grouse Creek trap, 1976.

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Number of fry trapped

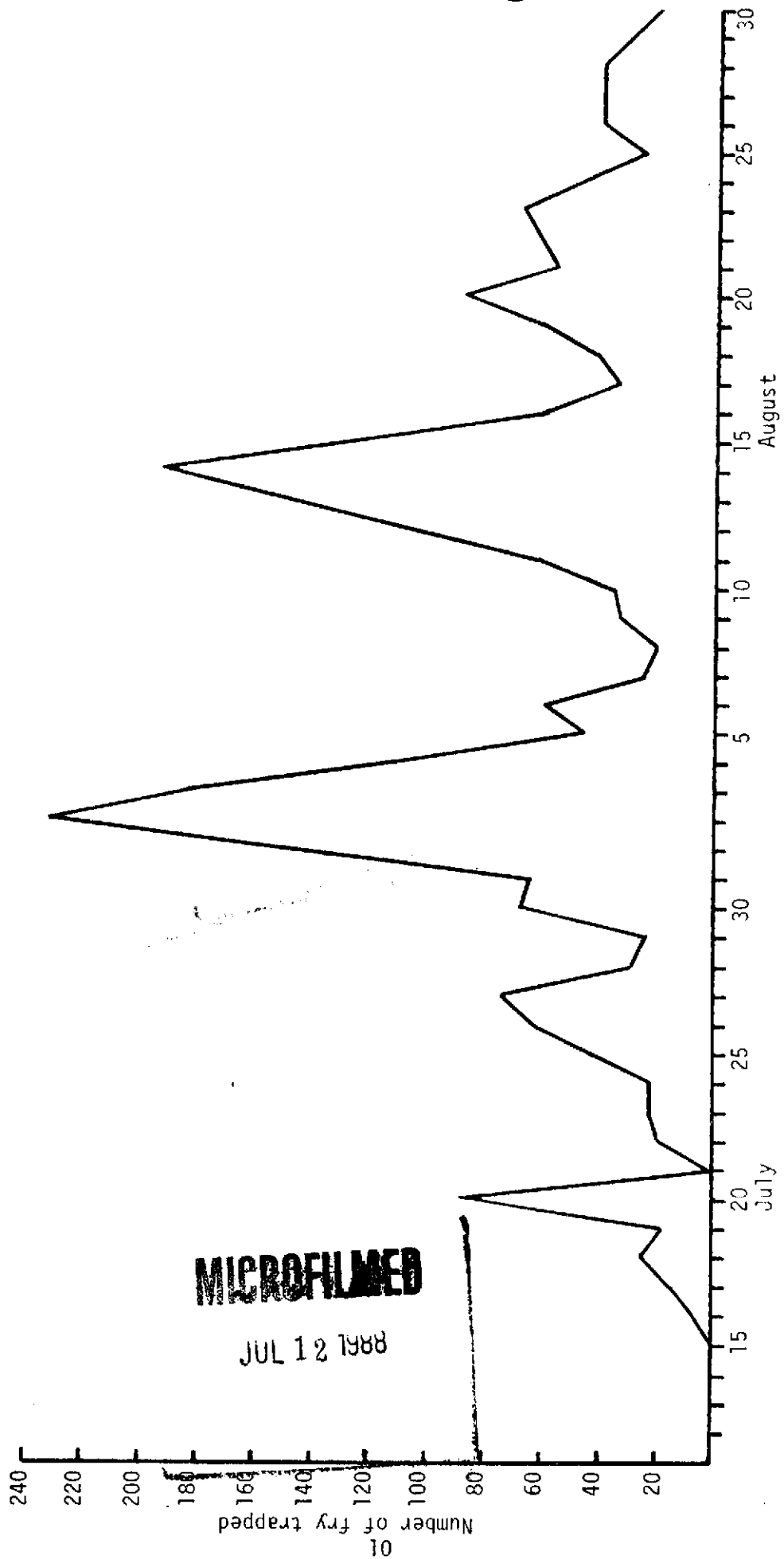


Figure 4. Number of Kamloops fry trapped daily through the Spring Creek trap, 1976.

Table 1. Fish greater than 50 mm (2.0 in) captured in Kray-Meekin traps during summer, 1976.

Species	North Fork Grouse Creek		Spring Creek		Lightning Creek	
	50-100 mm	100 mm +	50-100 mm	100 mm +	50-100 mm	100 mm +
Wild rainbow	5	5	55	21	2	4
Hatchery rainbow	--	--	1	109	--	--
Cutthroat	--	--	24	1	--	--
Brook trout	--	--	1	2	--	--
Dolly Varden	--	--	25	--	--	--
Whitefish	--	--	12	--	--	--
Longnose dace	--	--	1	--	1	--
Sucker	--	--	--	--	1	--

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The thermograph installed in the North Fork of Grouse Creek showed water temperatures ranging between a low of 10 C (50 F) and a high of 20 C (68 F) during the period 12 July through 9 August 1976 (Fig. 5). This information coupled with the daily fry movements from the North Fork of Grouse (Fig. 3) indicated that fry movement is not solely dependent upon water temperature. There appeared to be no correlation between daily fry movement and daily water temperature.

The hourly checks of the fry trap in the North Fork of Grouse Creek, on both occasions, showed a peak movement of fry in the period between 2200 hr and 0200 hr. Between these hours, 85% of the night's total of 727 Kamloops fry were trapped on 19 July and 67% of 419 total fry were trapped on 27 July, 1976. The peak hourly movement on 19 July occurred between 2200 and 2300 hr with 237 fry being captured. On 27 July the peak hourly movement occurred between the hours of 2300 and 2400 hr, with a total of 110 Kamloops fry being trapped (Fig. 6).

A comparison of hourly fry migrations and hourly water temperature fluctuations showed no evidence of fry migration depending upon water temperature. The hourly fry migrations were also compared with night light intensity. The nights of 19 July and 27 July were both clear, but on 19 July there was a bright half moon occurring on 0030 hr. There was no moon on the night of 27 July. On 19 July only 39% of the night's total fry migration occurred after the moon had risen, however, on 27 July 58% of the night's total fry migration occurred over the same time period when no moon was present.

Rearing

Pack River Drainage

Three areas of the upper Pack River were snorkeled in an attempt to locate juvenile Kamloops rearing areas. Due to the large size of the stream, an accurate count of all fish present in the area snorkeled was not possible; therefore, a gross observation of the species present was made. In the first area, 46 m (50 yd) above the falls at Zuni Creek for 1.2 km (3/4 mi) downstream, cutthroat was the only species of fish seen. These fish were primarily between 76-152 mm (3-6 in) in estimated length. Approximately 10% of the cutthroat in this area were over 152 mm (6 in).

In the second area, from the bridge below McCormick Creek for 183 m (200 yd) downstream, the predominant fish were again cutthroat between 76-152 mm (3-6 in). One hatchery rainbow of catchable size (254 mm, 10 in) and two juvenile Dolly Varden approximately 152 mm (6 in) each were also observed. In the third area of the upper Pack River, which extended from 1.6 km (1 mi) above the junction of Jeru Creek Road for 183 m (200 yd) downstream, a greater diversity of fish species was present. These included numerous Kamloops or cutthroat fry, numerous wild rainbow between 76-152 mm (3-6 in), a few wild rainbow greater than 152 mm (6 in), a few cutthroat primarily between 76-152 mm (3-6 in), two juvenile Dolly Varden 127-152 mm (5-6 in), and two mountain white fish approximately 305 mm (12 in). In this area the fry and small rainbow occurred in the highest numbers.

Three areas were also snorkeled in the lower Pack River and were located a

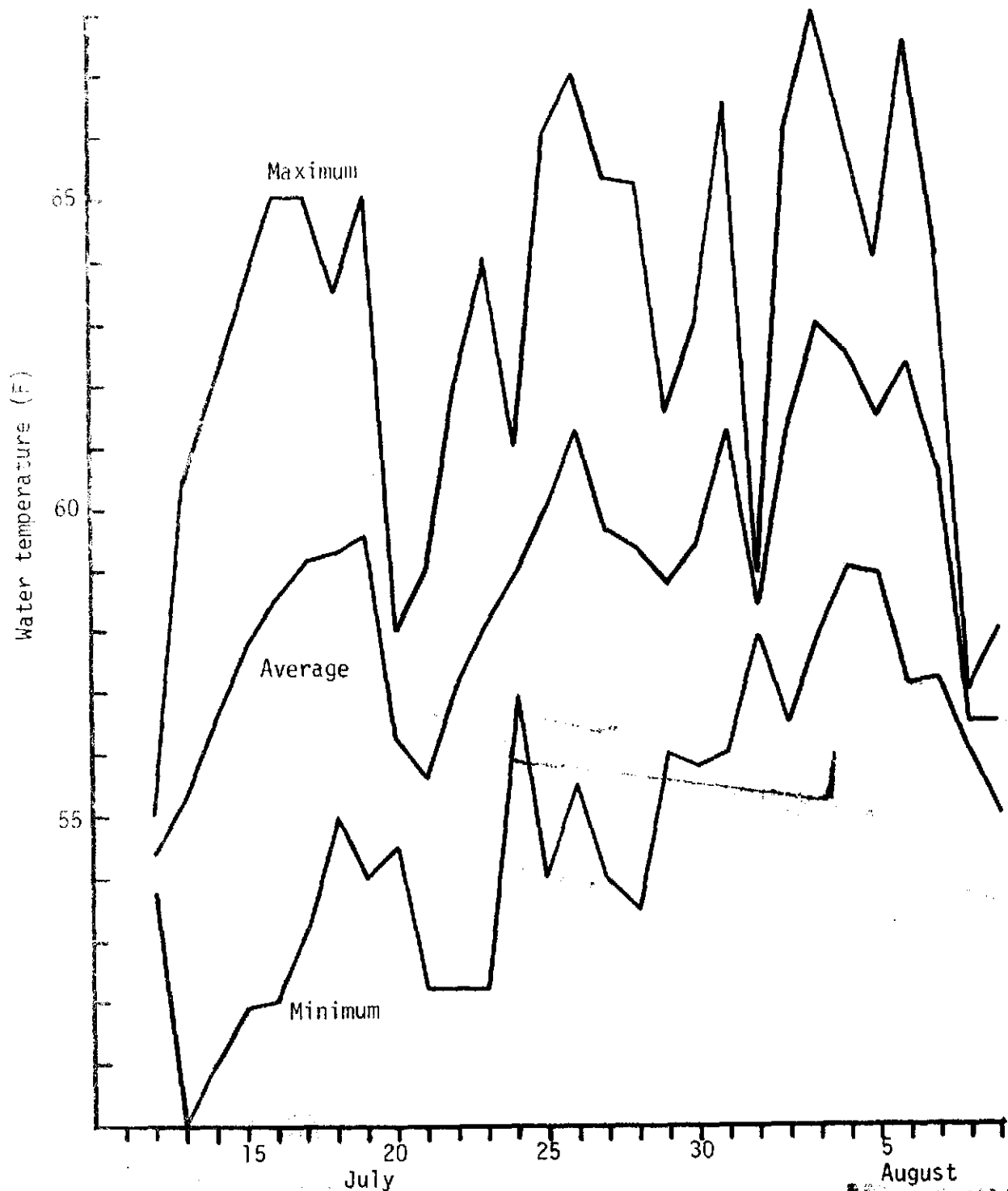


Figure 5. Water temperatures recorded in the North Fork of the Creek during July and August of 1976.

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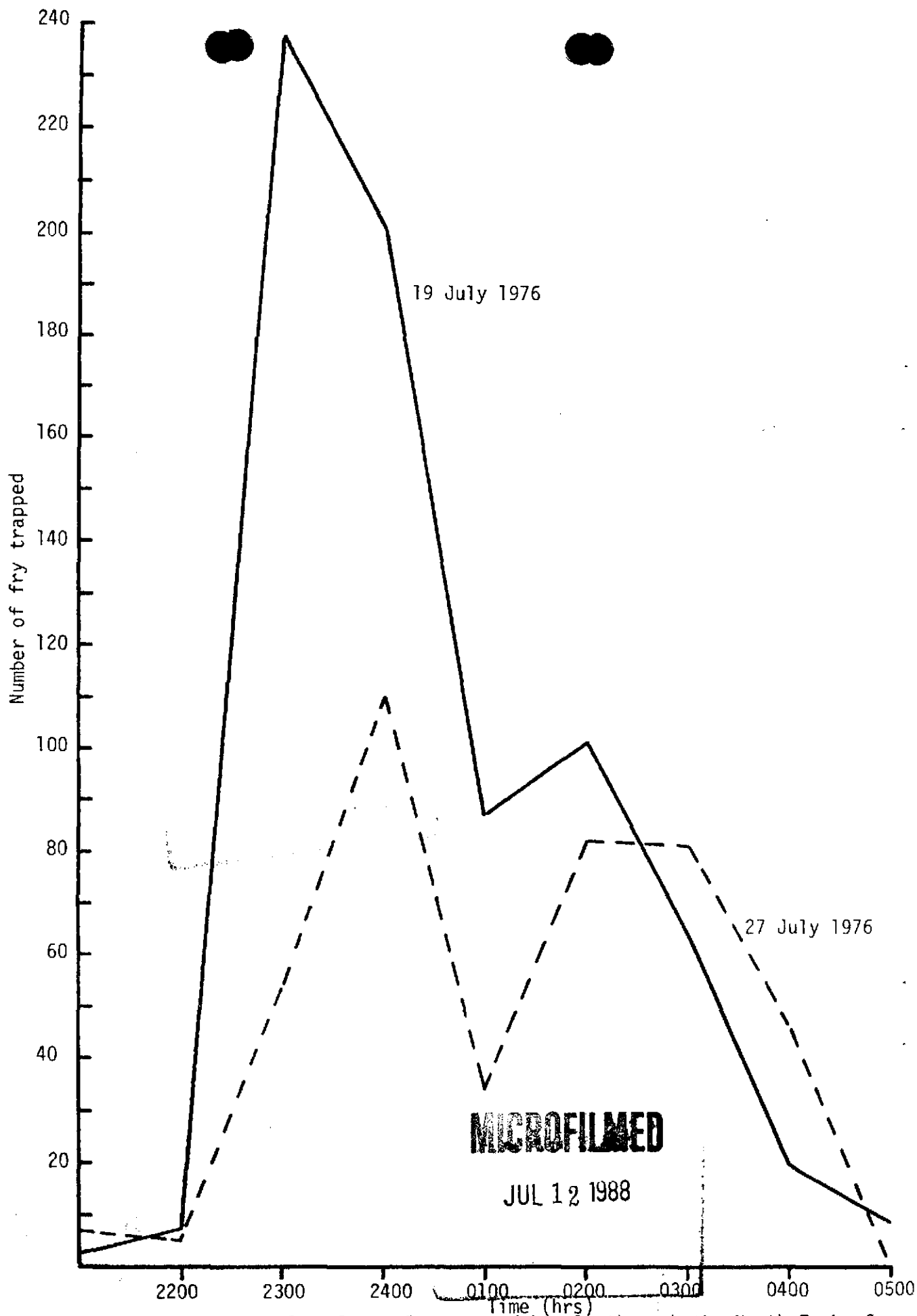


Figure 6. Number of Kamloops fry trapped hourly through the North Fork of Grouse Creek trap, 1976.

follows: (1) from 274 m (300 yd) above the northern most bridge across the Pack River on the Colburn-Culver Road for 1.2 km (3/4 mi) downstream; (2) from 183 m (200 yd) above the southern most bridge across the Pack River on the Colburn-Culver Road for 457 m (500 yd) downstream; (3) from the first bridge upstream from the mouth of Rapid Lightning Creek downstream to the mouth of Rapid Lightning Creek. The fish species most predominant in these sections of lower Pack River were sucker fry, redbreasted shiners about 75 mm (3 in) in length, squawfish 152-305 mm (6-12 in), and mountain whitefish ranging from 152-356 mm (6-14 in) (Table 2). A total of eight wild rainbow were seen in these areas

Rapid Lightning Creek was snorkeled from its mouth upstream approximately 183 m (200 yd). This section of Rapid Lightning Creek contained numerous Kamloops fry, 60 wild rainbow at 76-152 mm (3-6 in), and 12 wild rainbow about 178 mm (7 in), which constituted 70% and 14%, respectively, of the total fish observed. A mean relative abundance of the 76-152 mm (3-6 in) rainbow was calculated as 10 fish per pool and two fish per pool for the 152-305 mm (6-12 in) rainbow (Table 3a).

A total of 20 pools were snorkeled in different areas of Grouse Creek. Five pools were snorkeled approximately 1.6 km (1 mi) above the mouth of the North Fork of Grouse Creek, 10 pools from the confluence of the North Fork to 1.6 km (1 mi) below the gravel pit, and 5 more pools on the south side of the bridge on the Colburn-Culver Road. The primary fish species observed was wild rainbow. Approximately 45% of all the fish seen were wild rainbow between 76-152 mm (3-6 in) and about 10% were rainbow from 152-305 mm (6-12 in) in length. The Kamloops fry present in this area were seen in greater numbers in that portion of Grouse Creek south of the bridge. In this area the fry were too numerous to count. The mean relative abundance of the 76-152 mm (3-6 in) rainbow was calculated at 9.5 fish per pool and 2.0 fish per pool for the 152-305 mm (6-12 in) rainbow (Table 3b).

In the North Fork of Grouse Creek the areas snorkeled were from the culvert on the North Fork downstream to 46 m (50 yd) above the mouth and from the upper subdivision area downstream to the end of the road on the east side of the creek. The primary species of fish present was wild rainbow (43%) in the 152-305 mm (6-12 in) size range. Brook trout were the most numerous at 24% of the observed fish and then wild rainbow from 76-152 mm (3-6 in) at 18%. The mean relative abundance of wild rainbow can only be estimated as the total number of pools snorkeled were not recorded. There appeared to be two or less wild rainbow per pool (Table 3c).

Lightning Creek Drainage

Five different areas were snorkeled in the main Lightning Creek channel (Tables 4a-4e). Due to the large size of Lightning Creek and the large number of fish present, a total count of all fish present was not possible (except in the lowest section) so an accurate mean relative abundance figure could not be calculated. Species composition was estimated directly from those fish actually observed. In the lower regions of Lightning Creek, from Porcupine Creek bridge downstream, there were large numbers of Kamloops fry and a high percentage of wild rainbow from 76-152 mm (3-6 in) and hatchery rainbow of catchable size. In that region of Lightning Creek above Porcupine Creek, the predominant

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Table 2. Species composition and relative abundance estimated from 1976 snorkeling program in lower Pack River (main channel). Three sections were snorkeled (n=58).

Species	Fry	76-152 mm (3-6 in)		152-305 mm (6-12 in)		305 mm + (12 in +)	
		TC*	SC*	TC	SC	TC	SC
Wild rainbow	--	4	6.9	4	6.9	--	--
Hatchery rainbow	--	--	--	--	--	--	--
Cutthroat	--	--	--	--	--	--	--
Brook trout	--	--	--	--	--	--	--
Dolly Varden	--	--	--	--	--	--	--
Whitefish	--	--	--	28	48.2	5	8.6
Suckers	TNTC*	--	--	--	--	17	29.3
Redside shiner	--	TNTC	--	--	--	--	--
Squawfish	--	--	--	TNTC	--	--	--

*TC - Total count

*TNTC - Too numerous to count

*SC - Species composition (%)

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Table 3. Species composition and relative abundance estimated from 1976 snorkeling program, Pack River tributaries.

a. Location: Rapid Lightning Creek -- from mouth of Rapid Lightning Creek for 183 m (200 yd) upstream, 6 August 1976. (n=86, 6 pools).

Species	Fry	76-152 mm (3-6 in)			152-305 mm (6-12 in)			305 mm + (12 in +)		
		TC	SC	RB*	TC	SC	RB	TC	SC	RB
Wild rainbow	TNTC	60	69.8	10	12	14.0	2	--	--	--
Hatchery rainbow	--	--	--	--	--	--	--	--	--	--
Cutthroat	--	1	1.2	--	1	1.2	--	--	--	--
Brook trout	--	--	--	--	--	--	--	--	--	--
Dolly Varden	--	--	--	--	1	1.1	--	--	--	--
Whitefish	--	--	--	--	5	5.8	--	--	--	--
Suckers	--	--	--	--	--	--	--	2	2.3	--
Squawfish	--	--	--	--	4	4.6	--	--	--	--

TC - total count

*RB - Relative abundance - wild rainbow only

TNTC - too numerous to count

SC - Species composition (%)

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Table 3. Species composition and relative abundance estimated from 1976 snorkeling program, Pack River tributaries.

b. Location: Grouse Creek -- see text for description of areas snorkeled, 16 July 1976 and 3 August 1976. (n=371, 20 pools).

Species	Fry	76-152 mm (3-6 in)			152-305 mm (6-12 in)			305 mm + (12 in +)		
		TC	SC	RB	TC	SC	RB	TC	SC	RB
Wild rainbow	TNTC	190	51.2	9.5	41	11.1	2.0	--	--	--
Hatchery rainbow	--	--	--	--	--	--	--	--	--	--
Cutthroat	--	--	--	--	3	.8	--	--	--	--
Brook trout	--	3	.8	--	--	--	--	4	1.1	--
Dolly Varden	--	--	--	--	--	--	--	--	--	--
Whitefish	--	5	1.3	--	28	7.5	--	4	1.1	--
Squawfish	--	--	--	--	17	4.6	--	3	.8	--
Redside shiner	--	73	19.7	--	--	--	--	--	--	--

TC - total count
 SC - species composition (%)
 RB - relative abundance
 TNTC - too numerous to count

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Table 3. Species composition and relative abundance estimated from 1976 snorkeling program, Pack River tributaries.

c. Location: North Fork Grouse Creek, 30 June 1976. (n=51, pools*).

Species	Fry		76-152 mm (3-6 in)		152-305 mm (6-12 in)		305 mm + (12 in +)	
	TC	SC	TC	SC	TC	SC	TC	SC
Wild rainbow	--	--	9	17.7	22	43.1	2	3.9
Hatchery rainbow	--	--	--	--	--	--	--	--
Cutthroat	--	--	--	--	--	--	--	--
Brook trout	2	3.9	1	2.0	12	23.5	--	--
Dolly Varden	--	--	--	--	--	--	--	--
Whitefish	--	--	--	--	--	--	3	5.9

*Pools snorkeled not recorded - relative abundance not calculated.

TC - total count

SC - species composition (%)

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a. Location: From mouth of Lightning Creek, upstream to 91 m (100 yd) above Lightning Creek bridge, 27 July 1976. (n= 80).

Table 4. Species composition and relative abundance estimated from 1976 snorkeling program, Lightning Creek.

Species	Fry		76-152 mm (3-6 in)		152-305 mm (6-12 in)		305 mm + (12 in +)	
	TC	SC	TC	SC	TC	SC	TC	SC
Wild rainbow	6	7.5	37	46.3	15	18.8	--	--
Hatchery rainbow	--	--	--	--	3	3.7	--	--
Cutthroat	--	--	--	--	5	6.2	--	--
Brook trout	--	--	--	--	--	--	1	1.2
Dolly Varden	--	--	--	--	--	--	6	7.5
Whitefish	--	--	7	8.8	--	--	--	--

TC = total count
 TNTC = too numerous to count
 SC = species composition (%)

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Table 4. Species composition and relative abundance estimated from 1976 snorkeling program, Lightning Creek.

b. Location: From 274 m (300 yd) below mouth of Morris Creek, for 183 m (200 yd) downstream, 18 August 1976.

Species	Fry	76-152 mm	152-305 mm	305 mm +
		(3-6 in) SC %	(6-12 in) SC %	(12 in +) SC %
Wild rainbow	TNTC	50.0	--	--
Hatchery rainbow	--	--	40.0	--
Cutthroat	--	--	5.0	--
Brook trout	--	--	--	--
Dolly Varden	--	--	--	--
Whitefish	--	--	--	5.0

*Total count of fish not made - gross estimation of species composition.

SC - species composition (%)

TNTC - too numerous to count

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Table 4. Species composition and relative abundance estimated from 1976 snorkeling program, Lightning Creek.

c. Location: From mouth of East Fork Lightning Creek for 183 m (200 yd) downstream, 17 August 1976.

Species	Fry	76-152 mm (3-6 in)		152-305 mm (6-12 in)		305 mm + (12 in +)	
		SC %		SC %		SC %	
Wild rainbow	TNTC	50.0		--		--	
Hatchery rainbow	--	--		30.0		--	
Cutthroat	--	--		3.0		--	
Brook trout	--	3.0		--		1.0	
Dolly Varden	--	3.0		--		10.0	
Whitefish	--	--		--		--	

TNTC - too numerous to count
SC - species composition (%)

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Table 4. Species composition and relative abundance estimated from 1976 snorkeling program, Lightning Creek.

d. Location: From Porcupine Creek bridge downstream to mouth of Porcupine Creek, 17 August 1976.

Species	Fry	76-152 mm	152-305 mm	305 mm +
		(3-6 in) SC %	(6-12 in) SC %	(12 in +) SC %
Wild rainbow	TNTC	35.0	--	--
Hatchery rainbow	--	--	60.0	--
Cutthroat	--	--	2.0	--
Brook trout	--	1.0	--	--
Dolly Varden	--	1.0	--	--
Whitefish	--	--	--	1.0

SC - species composition (%)
TNTC - too numerous to count

Table 4. Species composition and relative abundance estimated from 1976 snorkeling program, Lightning Creek.

e. Location: From 183 m (200 yd) above mouth of Wellington Creek to first pool above Char Falls, 15 July 1976. (n=71)

Species	Fry	76-152 mm (3-6 in)		152-305 mm (6-12 in)		305 mm + (12 in +)	
		TC	SC	TC	SC	TC	SC
Wild rainbow	--	3	4.2	--	--	--	--
Hatchery rainbow	--	--	--	9	12.7	--	--
Cutthroat	--	2	2.8	37	52.1	--	--
Brook trout	--	1	1.4	--	--	--	--
Dolly Varden	--	--	--	--	--	19	26.8
Whitefish	--	--	--	--	--	--	--

TC - total count

SC - species composition (%)

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species of fish were cutthroat and Dolly Varden. The cutthroat were primarily 152-305 mm (6-12 in) and the Dolly Varden were mature fish ranging from 0.9-6.8 kg (2-15 lb) which had returned to the Lightning Creek system in preparation for spawning in the fall.

In Spring Creek, 18 pools were snorkeled between the mouth of Spring Creek and the Clark Fork Hatchery. Rainbow and Dolly Varden fry were the most abundant, each constituting about 40% of the fish present. Dolly Varden fry were known to be from the hatchery but it was impossible to determine if the rainbow were wild or hatchery stock. An estimated mean relative abundance for Spring Creek is approximately 15 wild rainbow fry per pool. Mountain whitefish was the second most abundant fish species in Spring Creek at 15% of the total population observed (Table 5a).

In Morris Creek (Table 5b) only one wild rainbow, 76-152 mm (3-6 in) was observed in a total of 12 pools snorkeled. The primary fish species in Morris Creek was cutthroat which ranged between 76-152 mm (3-6 in) and comprised 68% of the fish observed.

In the East Fork of Lightning Creek, wild rainbow between 152-305 mm (6-12 in) in length constituted 24% of the total fish seen for a calculated mean relative abundance of 1.2 fish per pool. Cutthroat was the predominant fish species and consisted primarily of fish between 152-305 mm (6-12) (Table 5c). Nine mature Dolly Varden ranging in size from 0.9-5.5 kg (2-12 lb) constituted 11.5% of the observed population.

Twenty-five pools in Procupine Creek were snorkeled near the confluence of the South Fork of Porcupine Creek (Table 5d). In this area the most abundant fish species were Dolly Varden (36%) ranging from 76-152 mm (3-6 in) and cutthroat (32%) also 76-152 mm (3-6 in) in length. Cutthroat between 152 and 305 mm (6-12 in) constituted 15% of the observed fish population. Only one mature Dolly Varden approximately 2.3 kg (5 lb) was observed in the area and there were no wild rainbow seen.

A total count of fish was not made in Wellington Creek, only a gross observation of the species present. Only two species, cutthroat and Dolly Varden, were observed in Wellington Creek. Cutthroat were most abundant and generally ranged from 152-254 mm (6-10 in). One cutthroat exceeding 356 mm (14 in) was observed. There were seven Dolly Varden seen in Wellington Creek, one of which was a 203 mm (8 in) juvenile. The remaining Dolly Varden were mature fish ranging from 0.9-6.8 kg (2-15 lb).

Dolly Varden made up roughly 40% of the total fish seen in Rattle Creek (Table 5e), with 21% of these ranging from 152-330 mm (6-13 in) and 12.5% ranging between 1.4-2.7 kg (3-6 lb). Of the 24 fish observed in 11 pools, 10 of these or about 42% were hatchery rainbow between 254-305 mm (10-12 in) in length. There were no wild rainbow observed in Rattle Creek.

Clark Fork River - Over-wintering Kamloops

Radio Tagging

We collected four Kamloops from the Clark Fork River on 17 and 18 November 1975 by hook and line. These fish ranged from 6.1-11.8 kg (13.5-26.0 lb). All fish were fitted with orally inserted radio tags and immediately released approximately 200 m (219 yd) below the mouth of Lightning Creek.

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Table 5. Species composition and relative abundance estimated from 1976 snorkeling program, Lightning Creek tributaries.

a. Location: Spring Creek from 46 m (50 yd) above mouth of Spring Creek to 366 m (400 yd) below fish hatchery, 9 July 1976. (n=670, 18 pools)

Species	Fry		RB		76-152 mm (3-6 in)		152-305 mm (6-12 in)		305 mm + (12 in +)	
	TC	SC	TC	RB	TC	SC	TC	SC	TC	SC
Wild rainbow	270*	40.3	15		1	.1				
Hatchery rainbow	--	--	--		--	--	--	--	--	--
Cutthroat	--	--	--		1	.1	--	--	--	3.9
Brook trout	--	--	--		--	--	--	14.9	26	
Dolly Varden	270	40.3	15		--	--	100	--	2	.3
Whitefish	--	--	--		--	--	--	--	--	--
Suckers	--	--	--		--	--	--	--	--	--

*Not sure whether wild or hatchery fish.

TC - total count

RB - relative abundance

SC - species composition (%)

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Table 5. Species composition and relative abundance estimated from 1976 snorkeling program, Lightning Creek tributaries.

b. Location: Morris Creek from bridge on Lightning Creek road for 274 m (300 yd) upstream (natural barrier), 18 August 1976. (n=38, 12 pools)

Species	Fry	76-152 mm (3-6 in)			152-305 mm (6-12 in)			305 mm + (12 in +)		
		TC	SC	RB	TC	SC	RB	TC	SC	RB
Wild rainbow	--	1	2.6	.08	--	--	--	--	--	--
Hatchery rainbow	--	--	--	--	6	15.8	--	--	--	--
Cutthroat	--	26	68.5	--	1	2.6	--	--	--	--
Brook trout	--	--	--	--	--	--	--	--	--	--
Dolly Varden	--	3	7.9	--	--	--	--	1	2.6	--
Whitefish	--	--	--	--	--	--	--	--	--	--

TC - total count
RB - relative abundance
SC - species composition (%)

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Table 5. Species composition and relative abundance estimated from 1976 snorkeling program, Lightning Creek tributaries.

c. Location: East Fork Lightning Creek - Three areas: (1) from 46 m (50 yd) upstream from mouth 183 m (200 yd) upstream, (2) from second bridge across East Fork for 274 m (300 yd) upstream, (3) from Thunder Creek downstream for 183 m (200 yd), 14 July 1976. (n=78, 16 pools)

Species	Fry	76-152 mm (3-6 in)			152-305 mm (6-12 in)			305 mm + (12 in +)		
		TC	SC	RB	TC	SC	RB	TC	SC	RB
Wild rainbow	--	--	--	--	19	24.4	1.2	--	--	--
Hatchery rainbow	--	--	--	--	4	5.1	--	--	--	--
Cutthroat	--	10	12.8	--	25	32.1	--	--	--	--
Brook trout	--	1	1.3	--	3	3.8	--	--	--	--
Dolly Varden	--	4	5.1	--	3	3.8	--	9	11.6	--

TC = total count
RB = relative abundance
SC = species composition (%)

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Table 5. Species composition and relative abundance estimated from 1976 snorkeling program, Lightning Creek tributaries.

d. Location: Porcupine Creek from 183 m (200 yd) upstream from mouth of South Fork of Porcupine Creek (migrational block) for (400 yd) downstream, 17 August 1976. (n=61, 29 pools)

Species	Fry	76-152 mm (3-6 in)		152-305 mm (6-12 in)		305 mm + (12 in +)	
		TC	SC	TC	SC	TC	SC
Wild rainbow	--	--	--	--	--	--	--
Hatchery rainbow	--	--	--	--	--	--	--
Cutthroat	--	20	32.8	9	14.8	--	--
Brook trout	--	5	8.2	2	3.3	--	--
Dolly Varden	--	22	36.0	2	3.3	1	1.6

TC = total count

SC = species composition (%)

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Table 5. Species composition and relative abundance estimated from 1976 snorkeling program, Lightning Creek tributaries.

e. Location: Rattle Creek from bridge across Rattle Creek for 0.4 km (1/4 mi) upstream, 15 July 1976. (n=24, 11 pools)

Species	Fry	76-152 mm (3-6 in)		152-305 mm (6-12 in)		305 mm + (12 in +)	
		TC	SC	TC	SC	TC	SC
Wild rainbow	--	--	--	--	--	--	--
Hatchery rainbow	--	--	--	10	41.7	--	--
Cutthroat	--	--	--	4	16.7	--	--
Brook trout	--	--	--	--	--	--	--
Dolly Varden	--	2	8.3	5	20.8	3	12.5

TC = total count

SC = Species composition (%)

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On 21 November we located a 7.0 kg (15.5 lb) female and a 11.8 kg (25 lb) male 500 m (547 yd) upstream of the point of release. We were unable at any time to receive a signal from the other two tagged fish.

The location of the tagged male was monitored through December when its location appeared to become stationary directly off the mouth of Lightning Creek. By February it was obvious that we were monitoring the tag that had been regurgitated by the male.

The female's position was located on 13 different dates. On all occasions the fish was located within 500 m (547 yd) of the mouth of Lightning Creek. On 3 May 1975 we received no signal from this fish in the Clark Fork River. On 5 May 1976 this fish was located 14.5 km (9 mi) up Lightning Creek, where we assumed it was spawning.

On 13 April 1976 we fitted two 4.5 kg (10 lb) females with radio tags and released them below the mouth of Lightning Creek. On 25 April 1976 they were both located just off the mouth of Lightning Creek. On 3 May 1976 neither were located in the Clark Fork, and one was located in Lightning Creek about 300 m (328 yd) above the mouth of Spring Creek.

The obvious regurgitation of the radio tag by the 11.8 kg (26 lb) male indicated a probable explanation of our failure to monitor the locations of four of six tagged fish for prolonged periods.

During the fall of 1976 we attempted to improve our methods by surgically implanting the radio tags to avoid regurgitation. We solicited the aid of Dr. Ralph Fruch, D.V.M. to effect surgical incisions, tag insertion and suturing. During the period of 13-20 October 1976 we captured seven Kamloops in the Clark Fork River by hook and line and transferred them to Clark Fork Hatchery. These fish ranged in size from 4.5 to 9.0 kg (10-20 lb). On 21 October, we implanted radio tags in the body cavity of these fish via a 25 mm (1 in) incision on the ventral mid-line, 51 mm (2 in) forward of the insertion of the anal fin. The incisions were closed with sutures and the fish were transported to the Clark Fork River and released immediately upstream from the lower-most bridge, near the town of Clark Fork. Radio tracking indicated all fish began an immediate movement downstream. On 22 October, no tagged fish could be located in the Clark Fork River. One fish returned the following week and remained near the release site through 22 November but could not be located after that date.

Angling and Observation

On 10 February 1976 we angled for Kamloops in the Clark Fork (water temperatures 1.5 C, 35 F) and hooked and played a 4.5 to 6.8 kg (10-15 lb) Kamloops.

On 21 December 1976 we attempted to use underwater lights at night to observe fish in the Clark Fork River. Although visibility was poor, we did observe one 4.5 kg (10 lb) Kamloops.

On 17 January 1977 we observed two 4.5 kg (10 lb) Kamloops approximately 1.6 km (1 mi) below Cabinet Gorge Dam on the Clark Fork River.

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Spawning Escapement

1976

During the spring of 1976 we made foot surveys of major Pack River and Lightning Creek tributaries to ascertain use by spawning Kamloops. On 27 April 1976 11 men covered the Lightning Creek drainage, including all potential spawning tributaries below Rattle Creek. United States Forest Service stream habitat surveys were used to establish which tributary reaches were accessible to spawning fish. Twenty-seven Kamloops were observed in Lightning Creek between Cascade and Rattle creeks (19.3 km, 12 mi). Most fish were concentrated in the vicinity of Porcupine Creek. We observed 12 fish in Spring Creek, a lower tributary to Lightning Creek. The only other tributary where we observed Kamloops was Cascade Creek where we saw one fish. We have documented sightings of spawners in the East Fork of Lightning Creek. We also observed juvenile wild rainbow while snorkeling the East Fork in 1976. No spawners were observed during spawning ground surveys nor juvenile rainbow observed during mid-summer snorkeling of Rattle, Porcupine and Wellington creeks. It appears that, with the exception of the East Fork and Spring Creek, most spawning occurs in Lightning Creek and tributaries, at spring flows, afford difficult conditions for visual observation of spawners and this count should be considered a minimum.

With the exception of the North Fork of Grouse Creek, most Pack River tributaries have spring flow conditions which make it difficult to make any quantitative spawning observations. In the past we have documented use of Grouse, North Fork of Grouse and Rapid Lightning creeks by spawning Kamloops. Other Pack River tributaries were walked in the spring of 1976 including Gold, Trout and Caribou creeks. No spawners were observed in these streams.

Spawners were observed in Grouse and Rapid Lightning creeks but water conditions precluded any meaningful counts. Maximum numbers of spawners in the North Fork of Grouse Creek were seen on 20 May when 23 fish were observed.

Although we did not attempt to document Kamloops spawning in main upper Pack River, the number of juvenile rainbow observed during mid-summer snorkeling in the vicinity of Jeru Creek indicates use of the area by spawning Kamloops.

At the time initial Kamloops introductions occurred in Pack River and Lightning Creek tributaries, Hoodoo Creek (tributary to the Pend Oreille River) also received releases. Hoodoo Creek was checked twice during April and May of 1976 and no fish or redds were observed.

Hundreds of thousands of fry, fingerling and catchable-size Kamloops have been released over the past 20 years in Granite Creek, tributary to the east side of Pend Oreille Lake. No Kamloops spawners were observed in 1976. During two 24-hour periods in July and August, Kray-Meeke traps were operated in Granite Creek and no fry were captured.

1977

During the spring of 1977 we operated weirs on lower Lightning and Spring creeks in an attempt to enumerate spawners and to collect eggs for broodstock purposes.

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We installed a weir and trap in Lightning Creek and then had to make an extensive evacuation near the stream mouth to make it accessible to Kamloops spawners. The first evening the stream was accessible (5 April), 12 fish ranging from 1.4-7.3 kg (3-16 lb) were passed through the trap. All fish moved after dark and movement coincided with peak flows which occurred after 2100 hr. On 6 April, fish began entering the trap rapidly at 2100 hr. Rising water collapsed the weir after 10 fish were passed. A total of 22 fish were opercle punched and passed through the Lightning Creek trap.

We trapped nine fish in Spring Creek. Two of the nine fish were opercle punched. If we assume that other fish entering Lightning Creek have the same distribution pattern as marked fish, then we can roughly estimate the total Lightning Creek run size to be:

<u>Spring Creek</u>		<u>Lightning Creek</u>
2 (punched)	:	22 (punched)
9 (trapped)	:	X (total run)

$$X = 99 \text{ fish}$$

The location of the Spring Creek trap was determined for convenience and accessibility by hatchery truck since all fish trapped were transferred to Clark Fork Hatchery for spawning. The trap was located too far upstream to capture the entire run. We snorkeled the stream below the trap on 11 April and observed 20-25 fish. On 19 April, we snorkeled the stream again and observed only five fish and numerous large redds.

Spawning Kamloops were again observed in 1977 in Grouse Creek and Rapid Lightning creek. On 30 April, 37 Kamloops were observed in the North Fork of Grouse Creek.

Broodstock Collection

The apparent failure of our domestic Kamloop broodstock to provide a significant contribution to the trophy fishery stimulated a re-evaluation of hatchery Kamloops programs.

Kamloops are naturally spring spawners (April-May) and attain maturity at 6 years of age. Late maturity is indeed the key to the trophy size potential of these fish. Extended opportunity to feed on kokanee prior to development of sex products facilitates large growth. Hatchery broodstocks had undergone selection for early maturity and calendar year spawning until they were spawning at 3 years of age and from November through January. The decision was made to revert to a wild broodstock which would utilize only fish taken as eggs from wild fish. Wild eggs were collected in 1973 and 1974 and should yield the first egg take in the spring of 1979.

To supplement these two year classes, we decided to capture wild fish via hook-and-line from the Clark Fork River in April, 1976. Between 6-13 April, we collected 32 Kamloops of which 24 (22 females, 2 males) were transferred to the Clark Fork Hatchery. The females averaged 7 kg (15.4 lb) and yielded 125,959 eggs (5,725 eggs/female). Our inability to capture additional males may have

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hampered fertilization and egg to fry survival was poor. We released 63,000 resultant fry into Spring Creek and held an additional 10,000 fry for brood-stock.

DISCUSSION

Information gathered from the North Fork of Grouse and Spring Creek traps indicates a definite downstream migration of Kamloops fry. Whether or not these fry are migrating to Pend Oreille Lake during their first summer of life is uncertain. Evidence suggests that this downstream movement may only be a spreading out of over-crowded fry and that the young Kamloops rear for at least 1 year and possibly 2 years in the tributaries of Pend Oreille Lake. J. Irvine (personal communication) found that a majority of the Gerrard rainbow fry emerging in the Lardeau River remained in the river 1 to 2 years before migrating to the lake. He found that approximately 10% moved to the lake as fry, likely the result of density factors.

Information collected from the Lightning Creek fry trap, coupled with the snorkeling data, helps to support this idea. Numerous Kamloops fry were observed in the lower regions of Lightning Creek, but very few were captured in the fry trap. It seems logical to assume that if a total fry migration to the lake was occurring, many more would have been captured in the trap and fewer observed above the trap location.

Based on snorkeling information, it appears that there would be a selective advantage for the over-wintering of the young Kamloops for at least 1 year until they are larger before migrating to the lake. High numbers of squawfish were observed in the lower regions of the Pack River downstream from the mouth of Grouse Creek. A Kamloops fry population moving through this area during the low water season (summer) would most likely suffer a high mortality from predation. The same situation exists in the Lightning Creek drainage. The Clark Fork River is known to have a fair population of squawfish which might substantially decrease a fry population.

The preferred rearing areas of sub-adult Kamloops, as determined from snorkeling in the Lightning Creek system, appears to be restricted to the lower regions of Lightning Creek. The highest concentrations of wild rainbow were found from the Produpine Creek bridge downstream to the mouth of Lightning Creek. The only tributary in this area holding a reasonable population of wild rainbow was the East Fork of Lightning Creek, with a fair population of 152-305 mm (6-12 in) rainbow.

Rearing areas for sub-adult Kamloops in the Pack River system appear to be located in the lower ends of Rapid Lightning and Grouse creeks. That area of the main Pack River which seems to offer suitable rearing habitat for juvenile Kamloops is that portion of the Pack River lying between Jeru Creek and Highway 95. Upstream from this area the primary fish species was cutthroat. The portion of the Pack River lying on the east side (downstream) of Highway 95 is heavily laden with sand and silt and offers no rearing habitat at all for juvenile Kamloops.

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Kamloops Over-wintering - Clark Fork River

The documented over-wintering of a radio-tagged female in the Clark Fork River is not in itself conclusive proof that all fall-run fish over-winter in the river. However, it does add considerable support to the argument. Other evidence supports this thesis:

1. During the period 1972 to 1975, the fall fishery in the Clark Fork River yielded catches which averaged 6.8-8.2 kg (15-18 lb). The catch clearly consisted of mature, spawning aged fish.
2. The regional files refer to females in the catch being gravid.
3. Fall-run fish have acquired typical rainbow spawning coloration.
4. Scales are tight, difficult to remove, indicating re-absorption--typical of spawning salmonids.
5. Sexual dimorphism is obvious--males have well developed kype.
6. Angling and visual observation verifies presence of Kamloops as late as February.
7. A 11.8 kg (26 lb) male captured in October in the Clark Fork and over-wintered at Clark Fork Hatchery produced sex products in April.
8. There is no other viable explanation for a fall run.

Our failure to monitor other tagged fish may be construed as evidence of their leaving the river. It may also be attributed to tag failure, regurgitation, altered behavior due to stress of handling or mortality due to stress of handling and/or surgery.

We feel the seven fish with surgically implanted tags were definitely stressed so as to alter behavior or cause mortality.

We feel that the fall run of fish in the Clark Fork River are mature, spawning aged fish which are over-wintering in preparation to spawning in Lightning Creek. This is not unusual for rainbow trout populations and particularly for steelhead stocks (from which Kamloops are thought to have derived).

Closure of the fall fishery in 1976 theoretically saved from 66 to 220 spawners (range of past catches). Potential savings are reflected in an apparent 100% increase in spawning escapement in Spring Creek in 1977.

Spawning Escapement

It appears that Lightning Creek is our most significant spawning tributary.

The Pack River drainage probably supports an equal number of spawners. On the basis of spawner densities we have seen, we estimate total spawning escapement to be between 200 to 300 fish.

LITERATURE CITED

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AGE AND GROWTH CHARACTERISTICS OF PEND OREILLE LAKE KAMLOOPS

ABSTRACT

Scale samples were collected from Kamloops trout captured in Pend Oreille Lake and tributaries between the years 1972 and 1976. General age and growth characteristics were determined for a total of 537 fish.

Longevity and size are characteristics somewhat unique to the Kamloops found in Pend Oreille Lake. Maturity is generally not reached until the sixth year of life. Multiple repeat spawning is common allowing some individuals to reach an age of 9 years. Late maturity coupled with an abundant food supply of kokanee results in tremendous growth. The largest individuals of the population are normally those fish reaching maturity at age 7. A slower growth rate tends to delay maturity and the additional year of sustained feeding on kokanee produces a highly desirable size of fish. A weight of 9.6 kg (21.1 lb) and length of 852 mm (33.5 in) was found to be average for fish maturing at age 7. Kamloops maturing at age 6 averaged 6.3 kg (14.0 lb) in weight and 774 mm (30.5 in) in length.

Life history information is limited. However, scale interpretation indicates that juvenile Kamloops have migrated from nursery streams to the lake before reaching age 3. Growth is slow within the first 3 years of life, but quickly accelerates when kokanee become the dominant food item in the fourth year of life and at a length of approximately 432 mm (17 in).

The average calculated total lengths in millimeters (inches in parenthesis) for ages 1 through 7 are: 80 (3.2), 143 (5.6), 289 (11.4), 434 (17.1), 625 (24.6), 779 (30.7), and 852 (33.5), respectively. Growth was relatively constant among the years sampled and among year classes. Clark Fork River fish were found to grow generally at the same rate as fish captured in the lake.

The average condition factor for age 5+ and age 6+ Kamloops was found to be 1.42. Condition factors varied but did not decline in the 4-year period of sampling.

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RECOMMENDATIONS

1. Collect scales on an annual basis from Kamloops with special attention to adequately sample all age classes.
2. Through scale interpretation (circulus counts and growth measurements), determine the pattern of stream growth in juvenile fish occupying tributary streams and apply this information to adult scales to ascertain the year of stream outmigration.
3. To assess changes in fish robustness, over a long period of time, obtain length and weight data for known age Kamloops and calculate condition factors.
4. Collect otoliths for all age classes of Kamloops to further validate aging through scale interpretation.

OBJECTIVES

1. To assess, by scale interpretation, general age and growth characteristics of Kamloops trout from Pend Oreille Lake.
2. Compare age and growth characteristics of Kamloops among the years sampled: 1972, 1973, 1975 and 1976.
3. Compare age and growth characteristics of Kamloops captured from the Clark Fork River and Pend Oreille Lake.

TECHNIQUES USED

A total of 729 scale samples were collected from Kamloops captured by various means from Pend Oreille Lake and tributaries during the years 1972, 1973, 1975 and 1976. The sports catch in the lake and river was sampled by census clerks while scales were collected from juvenile fish captured in tributaries by use of downstream traps and hook and line. Following the elimination of the Clark Fork River fishery in 1975, scale samples of river fish were collected during spawn-taking and tagging studies.

In 1972 and 1973, only the largest of the trophy-size fish (greater than 432 mm, 17 in, in total length) were sampled in the catch, while in 1975 and 1976, sampling effort was expanded to include all sizes. Data recorded for each fish included total length (inches), weight (pounds), date caught, and location. Scales collected from each fish were from an area located below the dorsal fin and above the lateral line. Two to five good scales were selected for each fish and acetate slide impressions were made of thickness .50 and .75 mm (.02 and .03 in). Impressions were placed in snapshot Kindermann 35mm slide mounts and projected at 60X magnification for analysis using a 35mm slide projector. Age was interpreted, in the manner described by Narver (1968), as the number of annuli located along a radius extending from the focus to the anterior edge of the scale and perpendicular to the posterior sculptured edge. Growth measurements were made along the same radius. All scales of questionable

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interpretation were discarded. A total of 537 scale samples were found suitable for interpretation of age, growth, and/or spawning history.

Age and growth data were transferred to IBM cards and a polynomial regression applied to find the best fit for the body-scale relationship. Fish lengths to each annulus were calculated and increments of growth assessed, using the formula, $L' = C + (S'/S) (L-C)$, where L is the length of fish at capture, L' is the length of fish at annulus formation, S is the total scale radius length, S' is the measured distance to a specific annulus, and C is the correction factor for length at scale formation (Rounsefell and Everhart 1953). The condition factor (K) was calculated for individual fish, where weight and length were obtained, and no past history of spawning existed (scale interpretation). Condition factors were determined using the formula, $K = \frac{100,000 W}{L^3}$, where W is the weight in grams and L is the total length in mm (Rounsefell and Everhart 1953).

FINDINGS

Body-scale Relationships

The body-scale relationship of 387 Kamloops is best described with a curvilinear third degree polynomial (Fig. 1), of the form:

$$TL = 34.41 + 3.1488X + .005107X^2 - .0002157X^3 \quad (x60)$$

where:

TL = Total length in millimeters
X = Scale radius in millimeters x 60

The correlation coefficient equals 0.964

The y-intercept (34.41) of the best fit regression line is used as the correction factor (C) in the direct proportion formula. The value of 34.41 mm is in agreement with the known length at scale formation of Kamloops (Smith 1955).

General Observations

Scale samples used in this work represented fish of all age classes and taken at all times of the year, except winter. Scale interpretation was difficult, due to three principal factors. First, individual fish may originate from either a hatchery operation or natural spawn. Until recently, thousands of hatchery-produced fry and fingerlings, progeny of domesticated brood stock at Clark Fork Hatchery, were released into Pend Oreille Lake and tributaries. Fish which appeared to be of hatchery origin were difficult to age because scales often exhibited sporadic growth with circuli closely spaced. Designation of annuli was difficult, especially during the first 2 and 3 years of life. Fish of apparent wild origin were typically found to have annuli better defined at all ages, and with wider spacing between circuli. A means to differentiate wild and hatchery stock by scale characteristics was beyond the intent of this work.

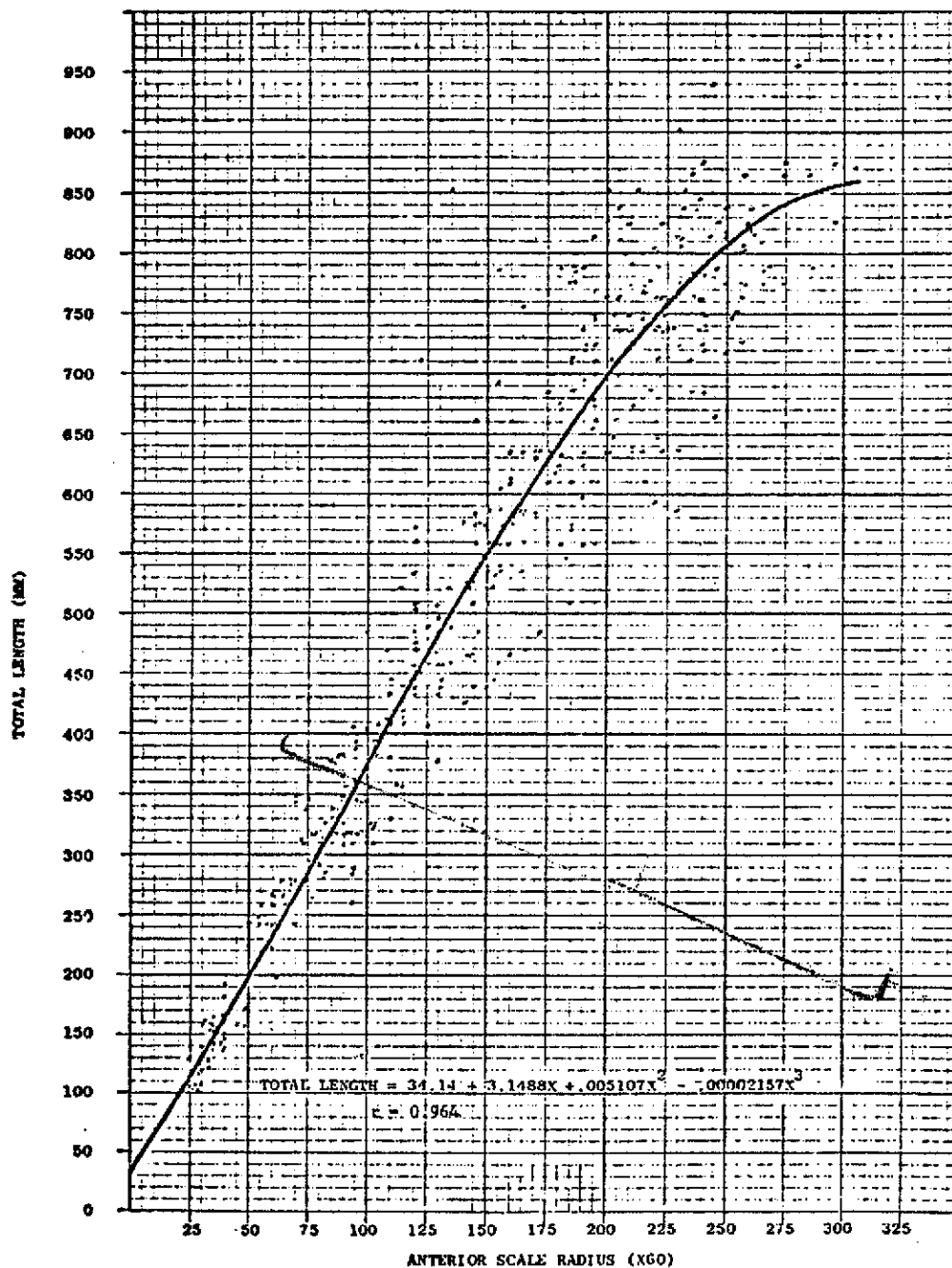


Figure 1. Body-scale relationship of 387 Kamloops rainbow collected from Pend Oreille Lake and tributaries (1972-1976).

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Early life history and age designation of hatchery fish, however, may not be significantly changed from that of wild fish, due to the generally small size (0-age) of hatchery releases. Kamloops released as "catchables" did not appear among the catch of trophy size fish. Second, variable periods of nursery stream residence were evident prior to lake immigration. It appears that lake growth (scales exhibiting wide spaces between circuli, indicative of a productive and rich food supply) is present with some fish at all ages. On the other hand, stream growth (narrow and tight spacing of circuli, indicative of slower growth and a more limited food supply) is common for many fish up to and including the second scale annulus but is found rarely following the third annulus. It would thus appear that immigration to the lake occurs predominantly before attainment of age three. Third, the presence of a "false annulus" or "summer check" was found to be very characteristic of scales from Pend Oreille Lake Kamloops. This "false annulus" appears for the first time between the third and fourth year of life and is often as prominent a feature as a winter annulus. The presence of a "false annulus" generally coincides with that area on the scale where Kamloops are considered to make the transition in their diet from zooplankton and terrestrials to kokanee. This may account for the distinctive appearance of the "false annulus". Cartwright (1961) reported on this phenomena in Kootenay Lake rainbow.

Annulus formation of Kamloops in Pend Oreille occurs in late April. Scales collected from fish in the last week of April or first week of May normally exhibited less than three circuli following the annular check.

Growth

Back calculated lengths were determined using the direct proportion formula with the correction factor (Table 1). This method was applied to all fish with scales of reliable interpretation for age and without spawning checks

Kamloops in Pend Oreille typically exhibit slow growth in length during the first 2 years of life. Following the second annulus, growth rate increases, indicating a possible general shift of juvenile fish from the stream to the lake with its more productive food supply. An even more rapid growth in length is evident late in the third year or early in the fourth year as kokanee become the dominant food item. Growth is typically the most rapid between the fourth and fifth year for those fish reaching maturity at age 6. Growth in length slows in the year preceding maturation. Therefore, if a fish is delayed in reaching maturity until age 7, incremental growth will be greatest between the fifth and sixth year of life (Table 2). The average back calculated total length to each scale annulus for Kamloops from Pend Oreille Lake and tributaries was determined to be 80 mm (3.2 in) at age 1, 143 mm (5.6 in) at age 2, 289 mm (11.4 in) at age 3, 434 mm (17.1 in) at age 4, 625 mm (24.6 in) at age 5, 779 mm (30.7 in) at age 6, and 852 mm (33.5 in) at age 7. Length at age 7 was determined from fish captured in the Clark Fork River on their initial spawning migration and presumably these fish will not increase in length until spawning is completed (Table 2).

Kamloops from the Clark Fork River have consistently averaged larger in length and weight than fish from the lake. A number of theories have been advanced as to the reason for this size variation. One theory postulates that a discrete stock of direct descendants from the original Kootenay Lake (Gerrard

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Table 1. Average back calculated total lengths by age class of 387 Pend Oreille Lake Kamloops collected from 1972 through 1976.

Age group	No. of fish	Mean total length at capture	Mean calculated total length in mm (inches in parentheses)					
			1	2	3	4	5	6
I	12	118 (4.7)	78 (3.1)					
II	46	207 (8.2)	78 (3.1)	137 (5.4)				
III	71	352 (13.9)	79 (3.1)	141 (5.6)	291 (11.5)			
IV	95	511 (20.1)	80 (3.2)	143 (5.6)	285 (11.2)	430 (16.9)		
V	123	708 (27.9)	82 (3.2)	145 (5.7)	293 (11.5)	444 (17.5)	634 (25.0)	
VI	40	829 (32.6)	80 (3.2)	143 (5.6)	286 (11.3)	415 (16.3)	596 (23.5)	779 (30.7)
Grand average			80 (3.2)	143 (5.6)	289 (11.4)	434 (17.1)	625 (24.6)	779 (30.7)
Grand average incremental growth			80 (3.2)	63 (2.5)	146 (5.8)	145 (5.7)	191 (7.5)	154 (6.1)
Number of fish			387	375	329	258	163	40

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Table 2. Average back calculated total length (mm) and growth increments by sampling year of first time spawning Kamloops from the Clark Fork River.

Year	No. of fish	Age at capture	1	2	3	Annulus				6*	7*
						4	5	6	7		
1972	9	5+	82	152	320	457	665	760			
	2	6+	74	127	307	406	582	811			902
1973	5	5+	85	146	300	466	649	763			
	3	6+	68	122	269	395	568	743			838
1975	1	5+	77	145	263	410	642	749			
	1	6+	67	135	290	385	540	742			813
1976	7	5+	87	159	313	466	682	802			
	4	6+	87	152	313	414	559	752			848
Average	22	5+	84	153	311	460	665	774			
Average growth			69	158	149	205	109				
Average	10	6+	76	136	294	404	564	760			852
Average growth			60	158	110	160	196	92			

*Actual total length when captured in fall or spring assumed length at time of first spawning.

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strain) introduction migrate to the river to spawn and these fish have maintained their genetic integrity and a superior growth rate. Another possibility is that only mature fish just prior to spawning enter the Clark Fork River and are caught near the peak of maximum growth and physical condition. In an attempt to answer this question of size differences, growth of lake and river fish is compared by sampling year (Table 3). With the exception of the 1972 lake fish, no significant differences in back calculated total lengths are apparent among the sampling years. The 1972 lake fish at age 5 and 6 are considerably smaller in length than fish taken from either the river in the same year or from the lake in any of the following years. An explanation for the slower growth is obscure. If a low population level of the kokanee food supply was the cause, then the effect should also be observed in river caught fish. Although the number of kokanee in the lake in 1971 and 1972, as indicated by catch records, was on the decline, the population was considered to be higher than in the years following 1972. Regardless of the slower growth observed in 1972 lake fish, the data indicates that there exists no difference in growth between the lake and river fish. It appears that Kamloops caught in the Clark Fork River are mature fish which make a fall migration prior to spring spawning and are, therefore, not a discrete stock separate from the general lake population.

Scales were collected of juvenile Kamloops from known spawning streams. Table 3 shows the back calculated lengths of juvenile fish sampled in Lightning Creek and the North Fork of Grouse Creek. The average first year growth to a length of 78 mm is comparable to the average first year growth calculated for lake and river fish. However, average incremental growth in the second year was found to be 44 mm to a total length of 122 mm. This is substantially less than the computed average total length to the second annulus calculated for lake and river fish (Table 1). It appears possible with adult fish, using known growth increments of juvenile Kamloops in tributary streams, to determine by scale characteristics the year of stream outmigration.

Age Composition

Age composition of Kamloops indicates that maturity occurs generally at age 6 and with conditions suitable for multiple spawning, the capability does exist for this stock to reach an age of 9 (Table 4). Fish of age 5 and older, numbering 262, account for 62% of the total sample. This is not a representation of population age structure but does point out the longevity factor.

The ages at maturity for 132 trophy size Kamloops with scales showing at least one spawning check and suitable for total age designation are shown in Table 5. Approximately 61% of the sample spawned for the first time at age 6, 18% spawned at age 5, 20% spawned at age 7, and 1% spawned initially at age 4. Scale samples of an additional 18 trophy-size Kamloops could be interpreted for spawning history only, and the cumulative total of 150 repeat spawners represents 29% of the sample of trophy-size fish from the lake, and 59% of the sample of trophy-size fish from the river (Table 6). The proportion of repeat spawners from the catch of Clark Fork River fish varied considerably from a low of 38% in 1973 to a high of 78% in 1975. The proportion of repeat spawners in the lake catch has also varied widely, but this data cannot be considered a true representation due to the fact that only the largest fish were sampled in 1972 and 1973. The higher percentages of repeat spawners in the river catch during

Table 3. Average back calculated lengths (mm) and growth increments by sampling year of Kamloops trout from Pend Oreille Lake and tributaries (1972-1976).

Year	Mean calculated total length (mm) to each annulus (number of fish in parentheses)					
	1	2	3	4	5	6
<u>Pend Oreille Lake</u>						
1972	82(31)	145(31)	287(31)	445(31)	594(31)	706(2)
1973	80(53)	141(53)	290(53)	452(53)	641(42)	791(14)
1975	82(113)	145(113)	288(108)	429(50)	638(23)	808(6)
1976	81(116)	144(116)	290(99)	429(88)	611(43)	781(8)
	63	142	158	149	112	170
	61	149	162	189	150	170
	63	143	141	209	170	170
	63	146	139	182	170	170
<u>Clark Fork River</u>						
1972	80(13)	147(13)	308(13)	445(13)	649(11)	811(2)
1973	79(10)	136(10)	288(10)	438(10)	618(8)	743(3)
1975	72(2)	140(2)	277(2)	398(2)	591(2)	742(1)
1976	86(11)	156(11)	313(11)	447(11)	640(11)	752(4)
	67	161	137	204	162	162
	57	152	150	180	125	125
	68	137	121	193	151	151
	70	157	134	193	112	112
<u>Lightning Creek and North Fork of Grouse Creek</u>						
1976	78(24)	122(36)				
	44					

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Table 4. Age composition of 421 Kamloops from Pend Oreille Lake and Clark Fork River (1972-1976).

Sampling year	Age group	Age designations*																	
		2	3	4			5			6			7			8			9
				4.S	4	4	5.S	5	5	6.S	6.2S	6.3S	6	7.S	7.2S	7.3S	8.2S	8.3S	
1972				8	2	21	9	5	1	2	6	10	2	2	3	1			
1973			2	11		28	12			14	3	8	2						
1975		5	32	27		1	17	4	4	6	3	4	1	1	1				
1976		17	11	1	45	1	35	20	2	8	8	8	2	2	1	1			
Totals		22	45	1	91	4	101	45	11	1	30	20	30	7	5	5	2	1	
Total by age group		22	45		92		105		87			57			12			1	

*Refers to total age and number of spawning checks. As an example, a fish of 7.2S designation has completed 7 years of life and spawned at ages 6 and 7.

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Table 5. Age at first spawning of 132 repeat spawning Kamloops from
Pend Oreille Lake and Clark Fork River (1972-1976).

Age	Number	Proportion
4	2	1%
5	24	18%
6	80	61%
7	26	20%
Total	132	100%

Table 6. Composition of repeat spawners in sample of trophy size Kamloops (greater than 432 mm, 17 in, total length) from Pend Oreille Lake and Clark Fork River (river fish in parentheses).

Year	Total sample	Total repeat* spawners	Number of spawning checks				Proportion of repeat spawners
1972	75 (28)	42 (15)	15 (8)	18 (5)	8 (2)	1	56% (54%)
1973	80 (16)	22 (6)	12 (5)	7 (1)	3		28% (38%)
1975	43 (18)	4 (14)	3 (5)	1 (8)	(1)		9% (78%)
1976	124 (34)	25 (22)	15 (12)	6 (7)	4 (2)	(1)	20% (65%)
Totals	322 (96)	93 (57)	45 (30)	32 (21)	15 (5)	1 (1)	29% (59%)
Grand total	418	150	75	53	20	2	36%

*Includes fish having scales with distinguishable spawning checks but unsuitable for total age interpretation.

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1975 and 1976 may indicate a reduced recruitment of first-time spawning fish to the river resulting from an overharvest in the lake of 5, 6, and 7-year old fish or possibly low survival of one or more age classes. On the other hand, these percentages may also indicate a high spawner survival in one or more previous years.

Conditions do appear favorable in Pend Oreille Lake and tributaries for multiple spawning. Scales of 36% of the trophy size fish in the sample have one or more spawning checks. Of the total 150 trophy size fish having scales with spawning checks, 50% exhibit two or more checks and two fish have scales with four distinguishable spawning checks. The overall high proportion of repeat spawners indicates the importance of spawning survival to the magnitude of the sports catch in the lake and the reproductive potential of the spawning migration in the Clark Fork River.

Length and Weight at Maturity

Length and weight at maturity were determined from Kamloops captured from the Clark Fork River. Fish captured in the fall months were included with spring caught fish due to the fact that the fall caught fish are assumed to be overwintering in the stream prior to spring spawning and, therefore, no additional growth in length or weight will occur. With this assumption, length and weight at maturity were computed by averaging for those fish determined through scale analysis to be on their first spawning migration (Table 7). Of the fish sample Kamloops maturing at age 5 averaged 592 mm (23.3 in) in length and 3.35 kg (7.4 lb) in weight. Mature fish at age 6 averaged 774 mm (30.5 in) and 6.34 kg (14.1 lb). At age 7, first-time spawners averaged 852 mm (33.5 in) in length and 9.6 kg (21.1 lb) in weight.

The exceptionally large average size of the age 7 fish naturally raises a question as to what factors may be operating to delay maturity and ultimately result in a more attractive fish to the angler. Rate of growth is often considered a contributing factor. For this reason, back calculated lengths are compared for age 5+ (spawn at age 6) and age 6+ (spawn at age 7) first-time spawners from the Clark Fork River (Table 2). A slower rate of growth is indicated for fish maturing at age 7. At each annulus, fish maturing at age 7 average less in total length than the fish maturing in 6 years. If the 1976 group of fish is excluded, back calculated lengths to the first and second annulus of age 7 maturing fish closely approximate the back calculated lengths for those fish from the North Fork of Grouse Creek and Lightning Creek (Table 3). This may indicate a correlation between residence time in tributary streams and age at maturity. The 1976 group of fish appears to be an exception since growth within the first 3 years of life for maturing at age 6 and 7 is virtually equal. The most significant difference in growth occurs in the period between the third and fifth year of life allowing the age 6 maturing fish to reach an average size at the end of the fifth year of 665 mm (26.2 in) or 101 mm (3.98 in) larger than those fish maturing at age 7. Growth in the year preceeding the initial spawning migration, however, slows considerably, allowing the later maturing fish (age 7) to surpass the earlier maturing fish (age 6) in size and because of the additional year of sustained feeding on kokanee to eventually attain a larger size.

Condition Factor

A decline in the average size of Kamloops in the sport fishery at Pend

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Table 7. Average weight (kg) and length (mm) of first time spawning Kamloops from the Clark Fork River. Parentheses designate weight in pounds and length in inches.

Year	Age*	Number	Length	Weight
1972	5	2	632 (24.9)	3.30 (7.26)
	6	9	760 (29.9)	6.09 (13.40)
	7	2	902 (35.5)	10.08 (23.80)
1973	5	2	553 (21.8)	3.40 (7.48)
	6	5	763 (30.0)	6.64 (14.61)
	7	3	838 (33.0)	9.97 (21.93)
1975	6	1	749 (29.5)	6.40 (14.08)
	7	1	873 (34.4)	9.10 (20.02)
1976	6	7	802 (31.6)	6.43 (14.15)
	7	4	848 (33.4)	8.80 (19.36)
Average	5	4	592 (23.3)	3.35 (7.36)
	6	22	774 (30.5)	6.34 (13.95)
	7	10	852 (33.5)	9.58 (21.08)

*Age refers to presumed annulus formation at spawning time in spring.

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Oreille Lake has been observed over the past few years. Condition factor is an indication of fish "robustness" and is often used to measure physical well-being. A decrease in average size could, therefore, be theoretically indicated in a lower condition factor. Condition factors were calculated for all fish where length, weight, and age information was available. Only those fish with no history of spawning and of age 5+ and age 6+ were used for comparative purposes (Table 8). The average condition factor for all fish used in this analysis was found to be 1.42. The average condition factor for lake fish slightly exceeds that of river fish -- 1.44 vs. 1.38, respectively. River fish of age 5+ caught in 1972 and 1976 have the lowest condition factors while the highest average condition factors are associated with age 6+ river fish. The data indicates that condition factors for 5 and 6 year old Kamloops have varied but not necessarily declined in the period 1972 to 1976. Data collected over a longer period of time is required to provide a more meaningful determination if, in fact, the condition factor of Kamloops in Pend Oreille Lake is declining.

SUMMARY

1. Of 729 scale samples collected between 1972 and 1976 from Kamloops in Pend Oreille Lake and tributaries, samples of 537 fish were found suitable for interpretation of age, growth, and spawning history.
2. Scale interpretation is difficult due to the fact that juvenile fish remain in nursery streams for a variable period of time, fish of hatchery origin are represented in the sample, and there occurs a distinctive "summer annulus" most prominent between the third and fourth year of life.
3. Juvenile Kamloops remain in tributary streams a maximum of 3 years before migrating lakeward. Two years of stream residence appears by scale interpretation to be the most common.
4. Winter annulus formation occurs in late April.
5. Growth is generally slow during the first 2 years of life and accelerates following the second winter annulus. The most rapid growth occurs in the fourth and fifth year of life as kokanee become the dominant food item. Back calculation of total lengths indicates that within the sample age 1 Kamloops averaged 80 mm (3.2 in); age 2, 143 mm (5.6 in); age 3, 289 mm (11.4 in); age 4, 434 mm (17.1 in); age 5, 625 mm (24.6 in); age 6, 779 mm (30.7 in); and, age 7, 852 mm (33.5 in).
6. A comparison of back calculated total length indicates that there were no apparent trends or substantial differences in growth among the years of sampling or among the year classes.
7. A comparison of back calculated total lengths showed no apparent differences in growth between lake and river caught fish. Clark Fork River fish are therefore considered to be mature migrants from the general lake population and not a discrete stock.
8. Age at maturity is generally 6 years. Of the repeat spawners, 61% spawned for the first time at age 6, 18% at age 5, and 20% at age 7.

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Table 8. Condition factors (K) for age 5+ and age 6+ Pend Oreille Lake and Clark Fork River Kamloops.

Year	Age	Number	<u>K</u>	<u>K</u> (Average by year)
<u>Pend Oreille Lake</u>				
1972	5+	21	1.32	1.32
	6+	2	1.29	
1973	5+	28	1.58	1.58
	6+	14	1.57	
1975	5+	17	1.39	1.39
	6+	6	1.41	
1976	5+	27	1.37	1.37
	6+	8	1.38	
Average		123		1.44
<u>Clark Fork River</u>				
1972	5+	9	1.20	1.25
	6+	2	1.48	
1973	5+	5	1.51	1.58
	6+	3	1.69	
1975	5+	1	1.51	1.60
	6+	1	1.69	
1976	5+	7	1.23	1.31
	6+	4	1.45	
Average		32		1.38
Grand average		155		1.42

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spawners represented only 1% of the sample.

9. Repeat spawners comprised a substantial proportion of the sample of trophy size fish caught in the lake (29%) and of the trophy size fish entering the Clark Fork River (59%). The conditions for multiple repeat spawning in Pend Oreille Lake and tributaries appear favorable as evidence by the fact that 50% of the repeat spawners have scales with two or more spawning checks.

10. The largest individuals of the populations are those fish where maturity is not reached until age 7. Kamloops maturing at 6 years averaged 774 mm (30.5 in) in length and 6.74 kg (14.0 lb) in weight while fish maturing at age 7 averaged 852 mm (33.5 in) in length and 9.58 kg (21.1 lb) in weight. Growth rate appears to be a factor in determining age at maturity as slower growing individuals tend to be delayed in reaching maturity until the seventh year.

11. The average condition factor for all Kamloops in their fifth and sixth year of life with no past history of spawning was found to be 1.42. Condition factors for lake and river fish varied but did not decline in the period of 1972 through 1976.

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JOB PERFORMANCE REPORT

State of Idaho Name: LAKE AND RESERVOIR INVESTIGATIONS
Project No. F-53-R-12 Title: Separation of Kamloops Stocks in
Job No. IV-g Pend Oreille Lake by Electrophoresis
Period Covered: 1 March 1976 to 28 February 1977

ABSTRACT

A biochemical study was conducted from May 1976 to May 1977 to determine if differences in serum proteins were present between two wild populations of Kamloops rainbow trout, Salmo gairdneri, from Pend Oreille Lake, Idaho and the brood stock held at Clark Fork Fish Hatchery.

We could find no consistent differences in serum protein patterns between these populations of trout. Apparently these populations have not been isolated long enough for detectable differences to accumulate.

Authors:

Richard L. Wallace
Associate Professor of Zoology
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Authur W. Rourke
Associate Professor of Zoology
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INTRODUCTION

There has been a recent increase in concern over the declining fishery for Kamloops rainbow trout, Salmo gairdneri, in Pend Oreille Lake, Idaho. Department biologists have started studies to learn more of the basic biology of these trout and to determine if present management practices are adequate to protect the stocks and improve the sport fishery for this valuable game fish. From May, 1976 to May, 1977, we conducted a biochemical study on various populations of Kamloops trout from Pend Oreille Lake.

OBJECTIVES

1. To characterize blood and muscle protein patterns of various populations of Kamloops trout from Pend Oreille Lake, Idaho.
2. To compare patterns of Kamloops from Pend Oreille Lake with those of hatchery Kamloops trout that have been reared at the Clark Fork Hatchery for a number of generations.

TECHNIQUES USED

Samples were collected from a total of 26 fish at the Clark Fork Fish Hatchery on 13 May 1976. Two wild populations and the hatchery brood stock were available for study. Eight hatchery brood stock (BS) were sampled (Table 1). Eight immature 3 year old fish from the wild population in Spring Creek (SC) and ten mature females from wild Clark Fork fish (CF) were also sampled. The Clark Fork fish were divided into "small" (less than 6.8 kg, 15 lb) and "large" (6.8 kg, 15 lb or more) fish.

Blood samples were taken by syringe from the caudal vein, allowed to clot at ambient temperature for about 20 minutes and stored on ice for 3 to 6 hours. When we returned to the laboratory the samples were centrifuged at 2,000 rpm for 5 to 10 minutes. The supernatant was drawn off and frozen until analyzed. We decided not to take muscle samples because of the possibility of injuring these fish.

We elected to use two-dimensional polyacrylamide gel electrophoresis of serum proteins because of the increased sensitivity of this new technique (Wright, Jr. 1972). Typically electrophoresis is accomplished by passing an electrical current through a medium in an ionized buffer to which the proteins under investigation have been added (Brewer 1970). Because most proteins carry a different net charge, they will migrate at different rates through the medium and become separated. After an appropriate amount of time, the medium can be removed from the apparatus and the separated proteins visualized by staining techniques. Using this technique proteins have been separated by charge in the first dimension of the two-dimensional procedure.

Another way to separate proteins is by size. The pore size of some media, as starch and acrylamide, approaches that of many protein molecules. Therefore, the size and shape of the protein molecule will affect its rate of migration. If a medium can be produced that has a gradient concentration for

Table 1. Populations and sizes of fish sampled at the Clark Fork Hatchery, May, 1976.

Source	Sample size			Length range (cm)	Weight range (kg)
	Males	Females	Total		
Hatchery Brook Stock (BS)	4	4	8	42.0-45.8	0.7-1.2
Spring Creek (SC)	-	-	8	22.2-28.0	--
Clark Fork (CF)					
Small	0	6	6	70.0-76.5	3.6-5.4
Large	0	4	4	77.9-86.6	6.8-8.6

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example from 4% to 24% acrylamide, then separation of proteins can be accomplished both by charge and size of the protein molecules if an electrical current is passed through this gradient gel. This is the basis of the second dimension of two-dimensional polyacrylamide electrophoresis. The end result is a greater separation of proteins and a more powerful biochemical tool for detecting the presence of different protein molecules.

The first dimension gels (4% polyacrylamide) were poured into tubes and allowed to polymerize. From 5 to 15 μ l of sera (about 400 μ g of protein) and 5 μ l of the tracking dye (bromophenol blue) were added to each tube. The amount of sample used was based on Lowry protein determinations (Lowry et. al. 1951) so that total protein of each sample was approximately equalized. A Tris-acetate buffer (pH 8.9) was used throughout these procedures. Fresh buffer was used for every run.

First dimension electrophoresis was carried out by applying an electrical current of 1 ma/tube (DC) for 1 hour (pre-run) and then 10 ma/tube until the dye front migrated off the tubes. An additional 1/2 hour completed the run.

The second dimension polyacrylamide slabs were prepared using an Isolab gel maker and tower. Linear gel gradients of 4-24% acrylamide were routinely used. First dimension gels were removed from the tubes and placed on top of the slabs. Second dimension electrophoresis was carried out by applying 30 ma/tube for 20 hours in an Isolab two-dimensional apparatus. The gels were removed from glass plates, stained with Coomassie Blue in alcohol and acetic acid for about 12 hours and then destained in an alcohol-acetate solution (about 48 hours). Results were recorded on film.

FINDINGS

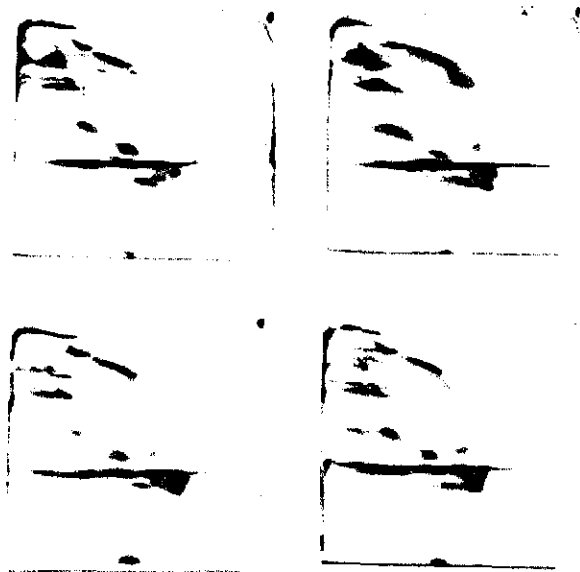
We could detect no consistent differences between the hatchery brood stock and the wild populations sampled (Fig. 1). No consistent differences were found between "large" and "small" individuals of the Clark Fork population (Fig. 2). Individual variation was detected in the sera analyzed. However, apparently these stocks of fish have not been separated for a long enough period of time for genetic variation between these populations and accumulate to detectable levels using electrophoretic analysis of blood serum proteins.

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Figure 1. Two-dimensional gels of brood stock fish (upper gels) and Spring Creek fish (lower gels). The upper left gel is from the serum of a female and the upper right gel is from the serum of a male. Sexes could not be determined for the Spring Creek fish by external examination and these fish were not sacrificed.

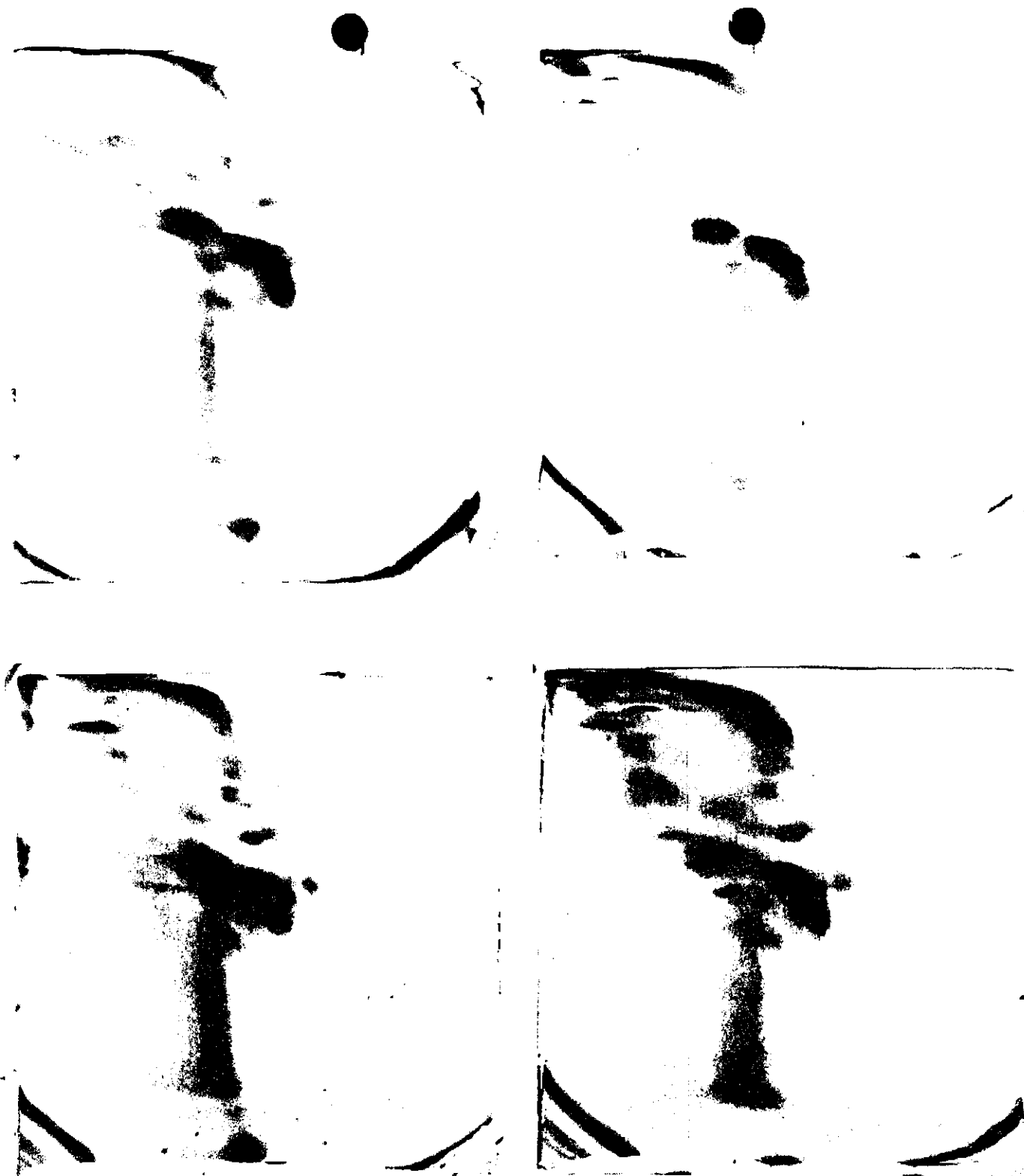


Figure 2. Two-dimensional gels of sera collected from "large" and "small" Clark Fork fish. The upper pictures are from "large" females and the lower two are from "small" females.

ACKNOWLEDGEMENTS

The help of Messrs. Bill Goodnight, Bert Bowler and Gregg Mauser, Idaho Department of Fish and Game, in obtaining the blood samples was appreciated. Dr. R. J. Naskali, Department of Biological Sciences took the photographs.

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Submitted by:

William Goodnight
Regional Fishery Manager

Bruce Reininger
Biological Aide

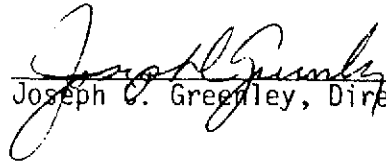
Richard L. Wallace
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Arthur W. Rourke
Associate Professor of Zoology
University of Idaho

Robert Anderson
Biologist
Washington Water Power Company

Approved by:

IDAHO DEPARTMENT OF FISH AND GAME

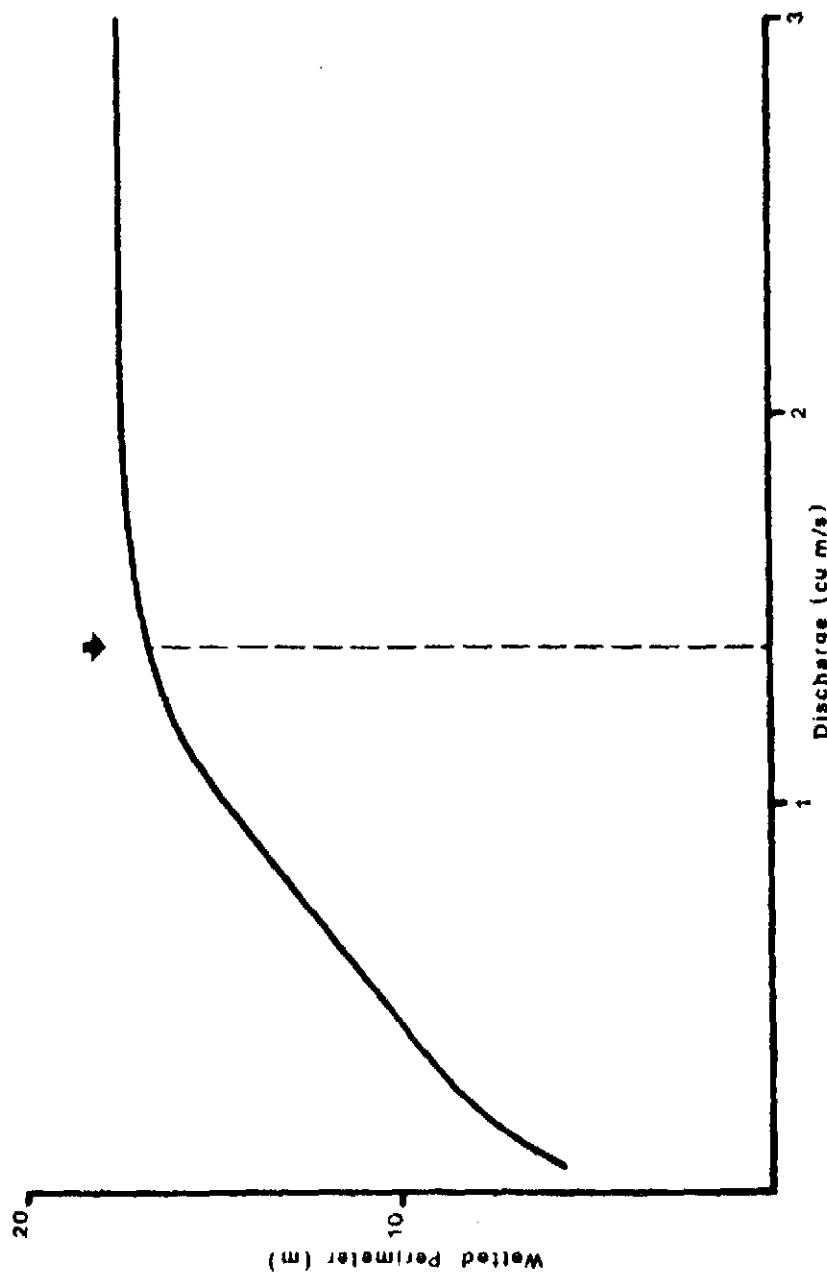

Joseph C. Greenley, Director


Stacy Gebhards, Chief
Bureau of Fisheries


Jerry Mallet
Fishery Research Supervisor
Bureau of Fisheries

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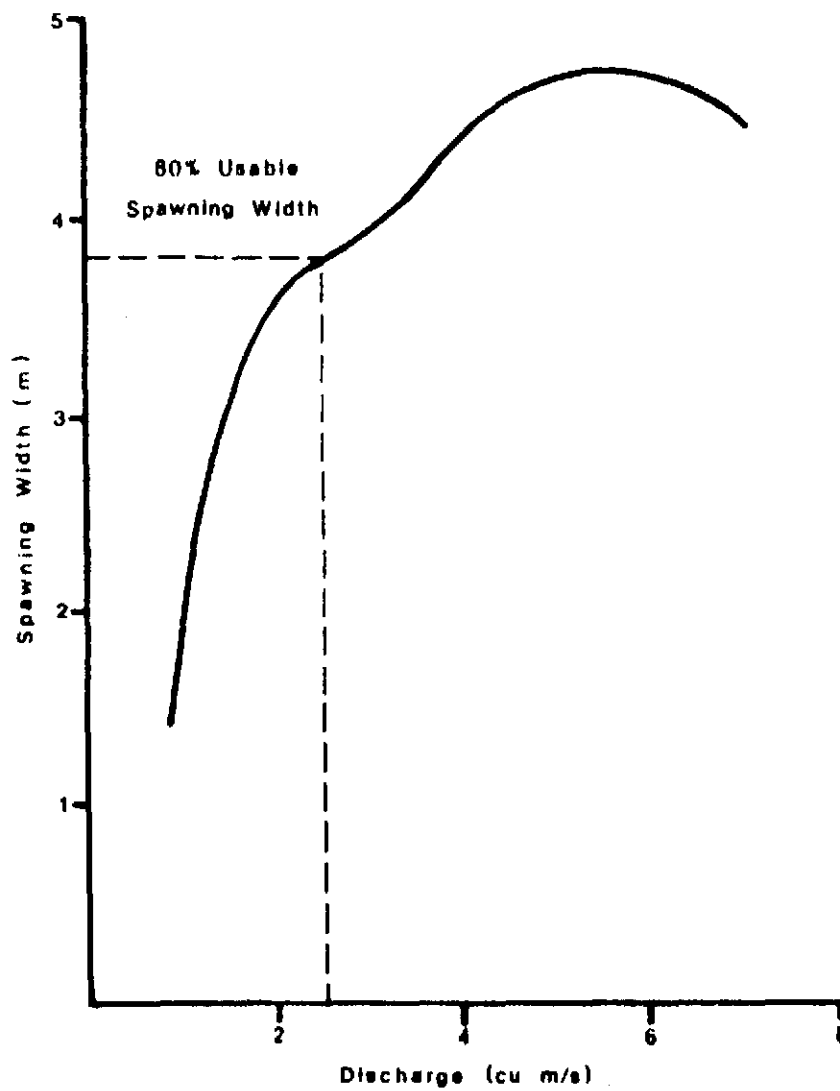
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Trout Rearing habitat curve for Lightning Creek (1 cu m/s = 35 cfs)

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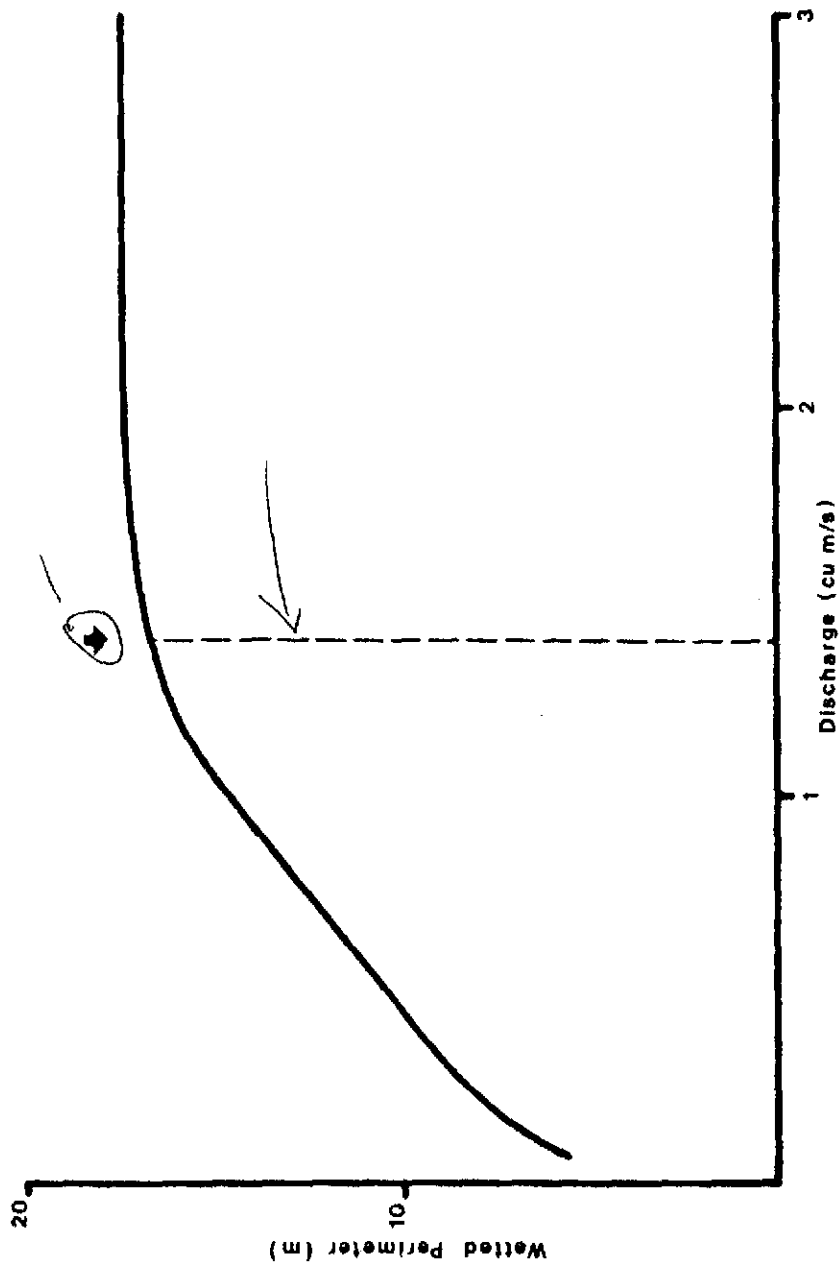
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Kamloop Spawning habitat curve for Lightning Creek (1 cu m/s = 35 cfs)

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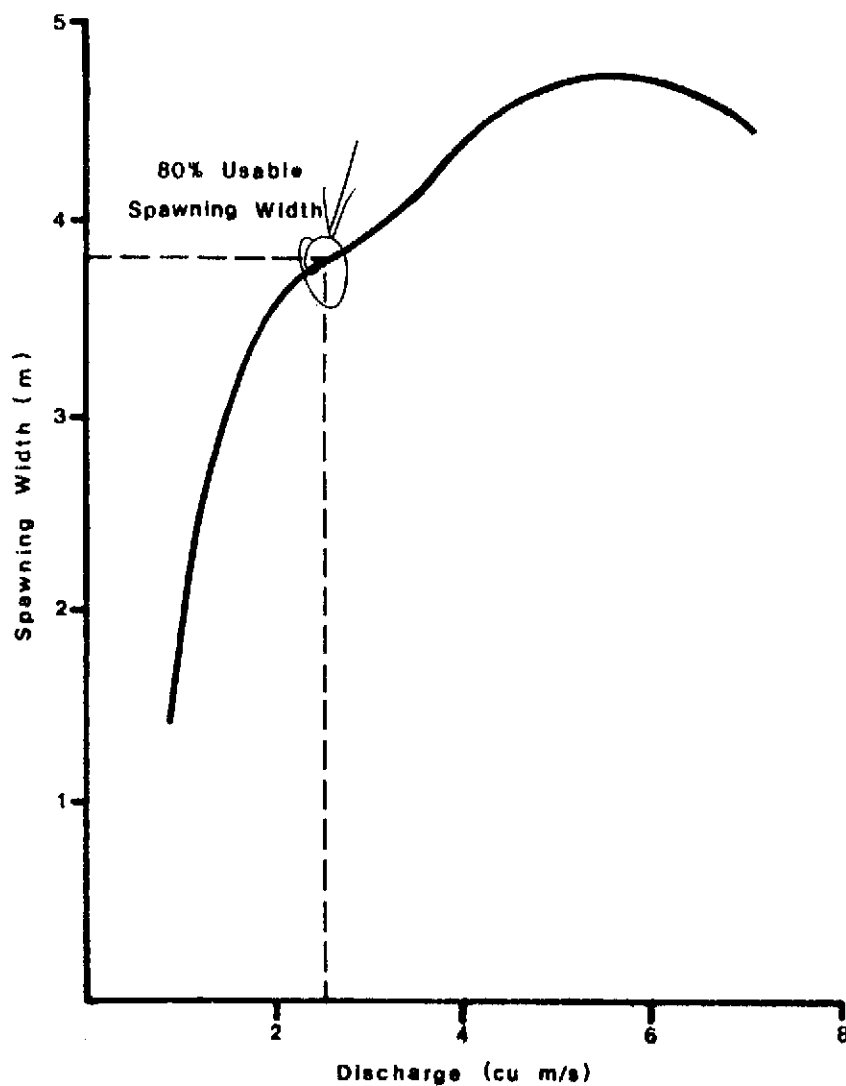
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Trout Rearing habitat curve for Lightning Creek (1 cu m/s = 35 cfs)

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Kamloop Spawning habitat curve for Lightning Creek (1 cu m/s = 35 cfs)

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Lightning Creek

Lake
Pend Oreille

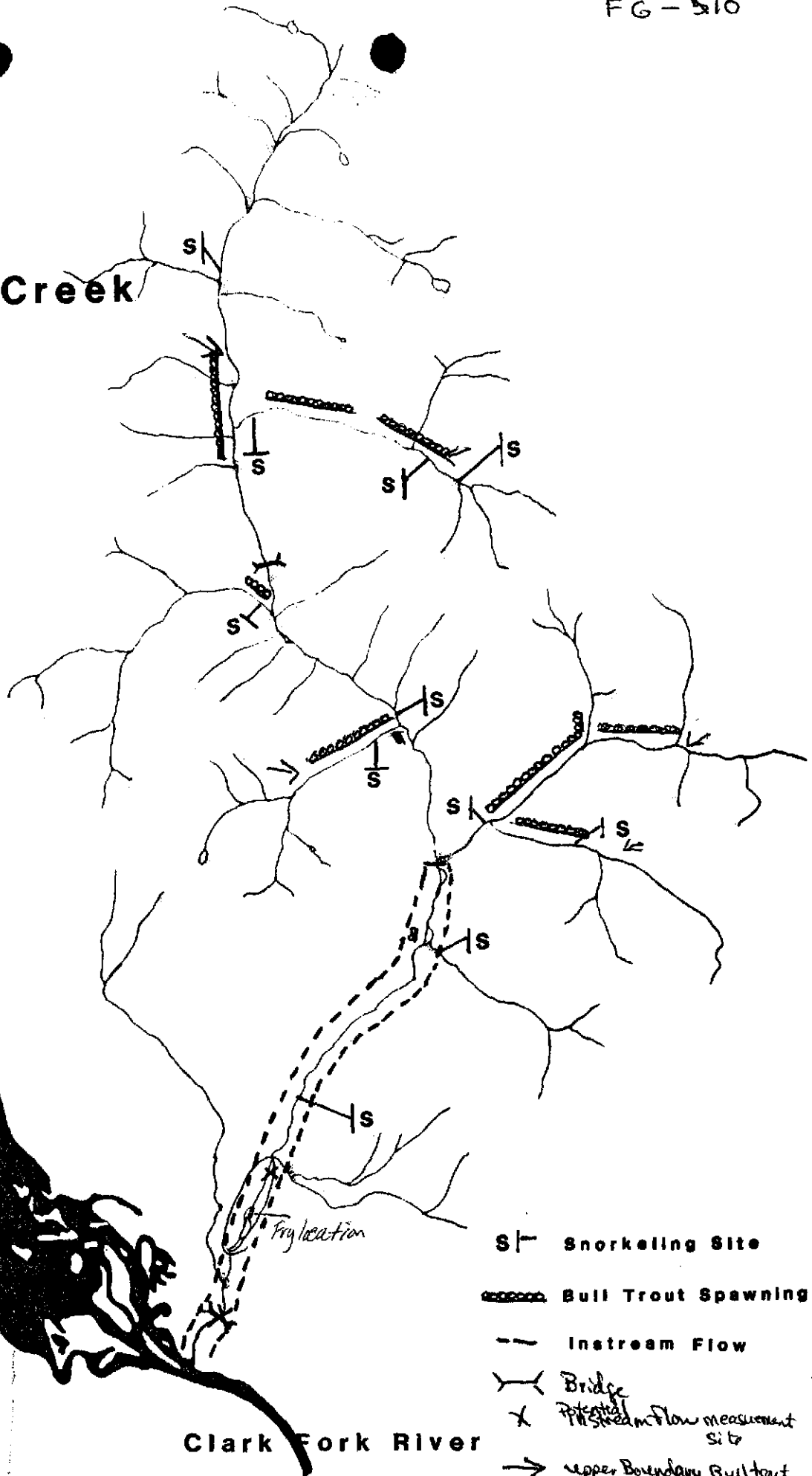
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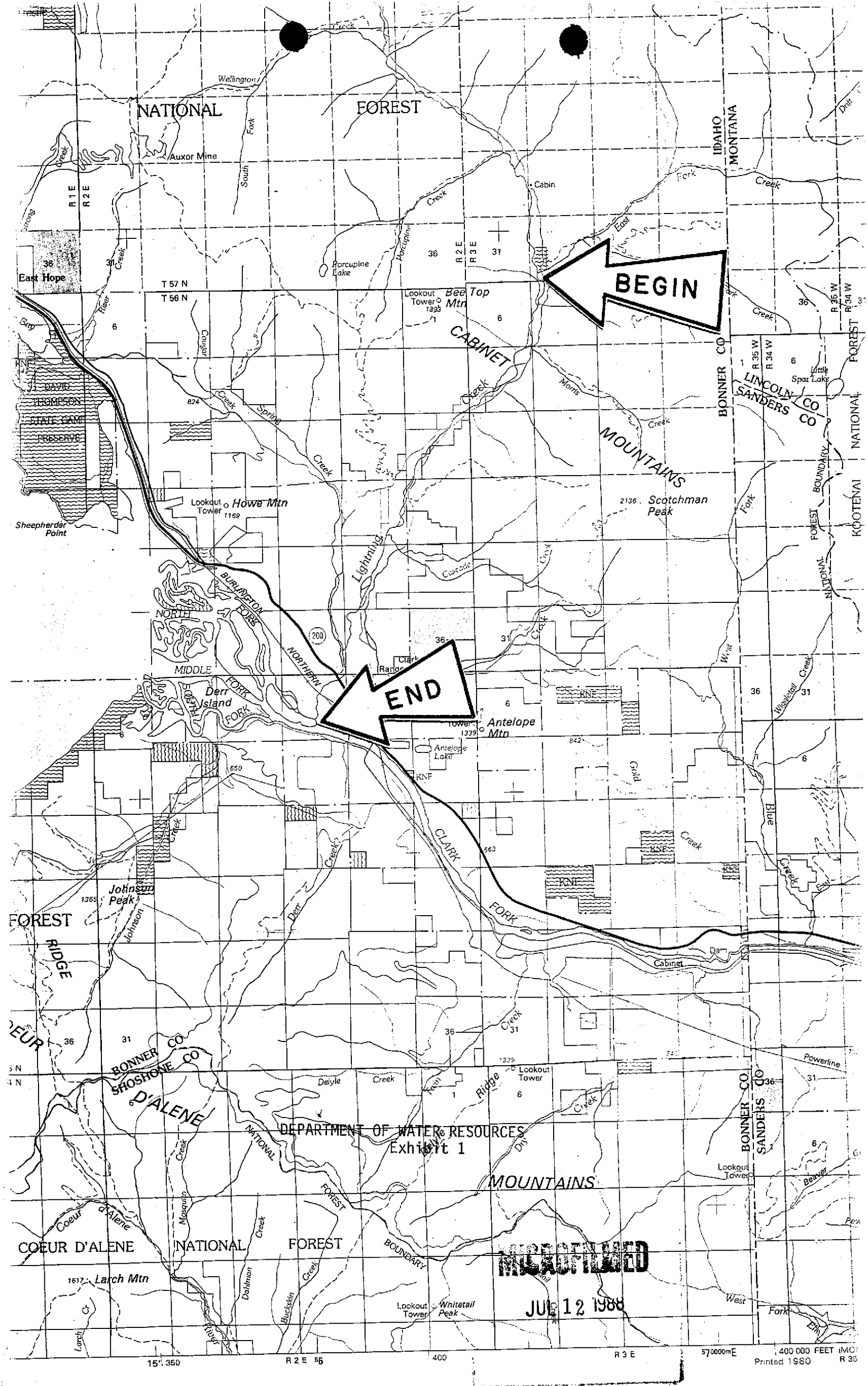
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Clark Fork River

Scale
0 miles 2

- S| Snorkeling Site
- ▬ Bull Trout Spawning
- - - Instream Flow
- X Bridge
- X Potential Instream Flow measurement site
- Upper Boundary Bull trout access

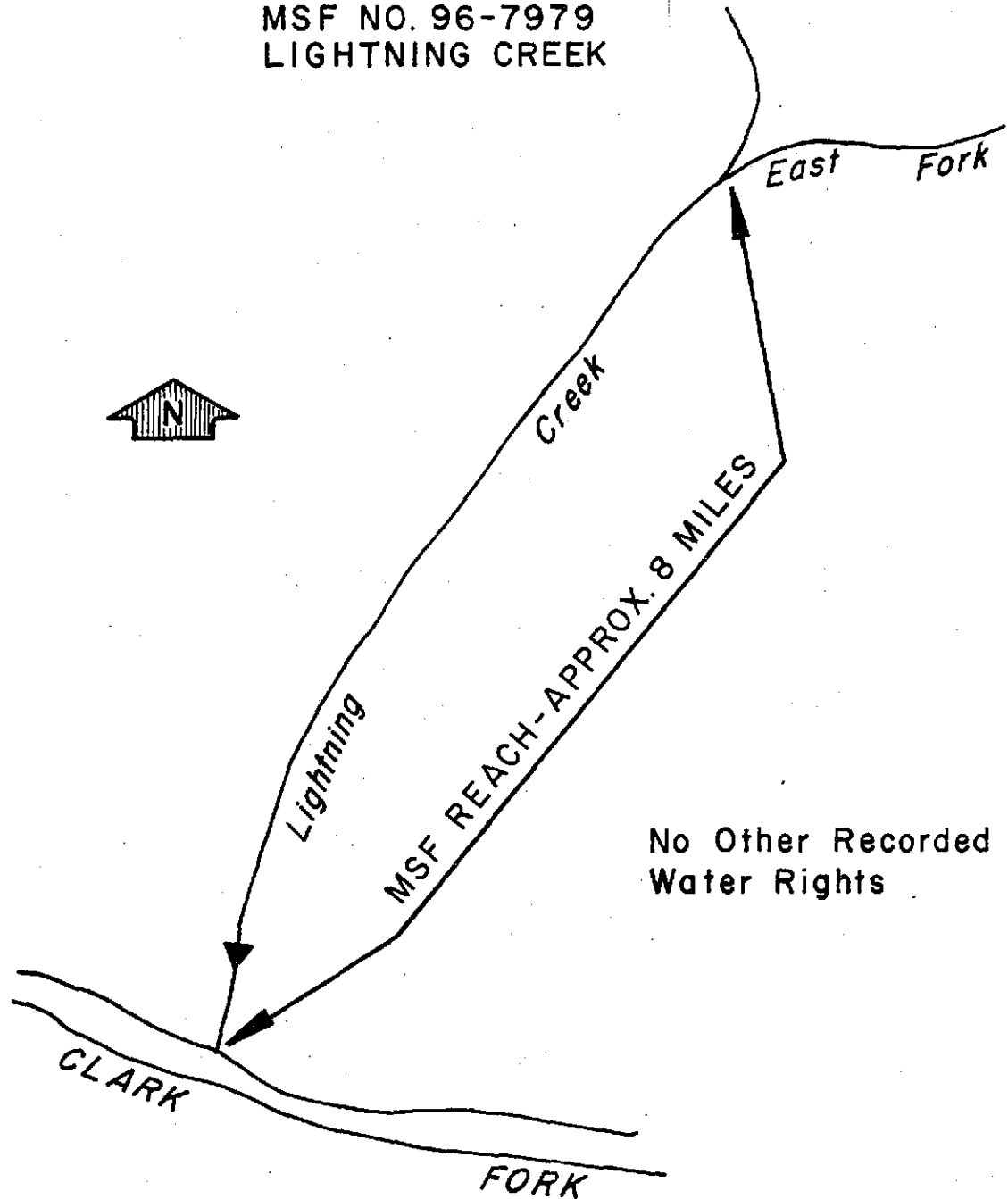




LEGEND

ROAD CLASSIFICATION

MSF NO. 96-7979
LIGHTNING CREEK



IDAHO WATER RESOURCE BOARD FILING (cfs)

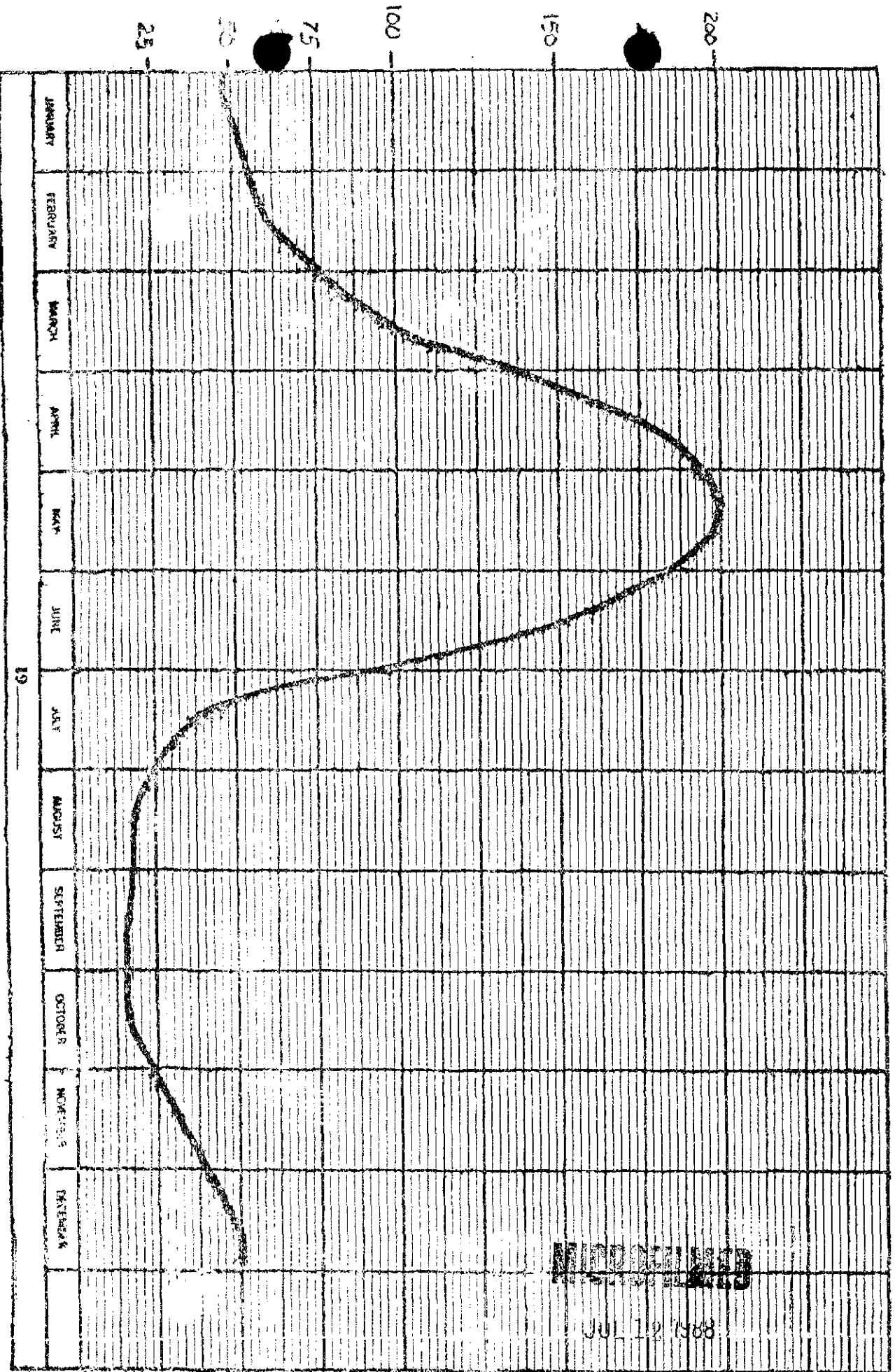
<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
49	49	49	84	84	53	53	49	49	49	49	49

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Exhibit 2

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FIGURE 1. AVERAGE MONTHLY DISCHARGE, RAPID LIGHTNING CR AIR STATIONS 1963-68



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State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
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(208) 334-4440

September 26, 1983

MEMO

TO: Dave Tuthill, Water Allocation Section ^{DET}

FROM: Bill Ondrechen, Hydrology Section ^{WTO}

SUBJECT: HYDROLOGY OF GROUSE CREEK AND LIGHTNING CREEKS,
PEND OREILLE RIVER BASIN

Grouse Creek, tributary to the Pack River, and Lightning Creek, tributary to Pend Oreille Lake, both drain forested basins on the west flank of the Cabinet Mountains. Elevations within the basins range from over 6000 feet down to about 2100 feet. Annual precipitation is believed to range from 30 inches at the lower elevations to over 45 inches in the higher portions of the basins.

Neither stream has a continuous streamflow record, but both have been measured occasionally. Rapid Lightning Creek, a drainage adjacent to Grouse Cr. which should exhibit similar flow characteristics to both basins, was gaged from 1963 through 1968. A plot of monthly average flow for Rapid Lightning Cr. is shown in Figure 1. Low flows generally occur in the months of August, September and October. Rain or snowmelt at the lower elevations generally keeps winter flows somewhat above those of late summer or fall.

Grouse Creek has been measured at two sites, about 3 and 3.5 miles upstream from the mouth, approximately in the middle of instream flow reach. The drainage area above the lower measurement point is 55.6 sq. mi. Table 1 lists the available measurement data for both sites.

Lightning Creek has only been measured a few times, at the railroad crossing just upstream from the mouth. The drainage area at this point is 100 sq. mi. Tributaries above this point include Spring Cr., Cascade Cr., and Morris Cr. The measured streamflows are displayed in the following table:

10-5-73	24.6 cfs
9-27-74	33.6
9-3-75	99.2
9-9-76	72.7
7-19-77	26.4
8-11-78	24.9

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WO:mb

LOWE EXHIBIT 3 APPENDUM

LIGHTNING CREEK

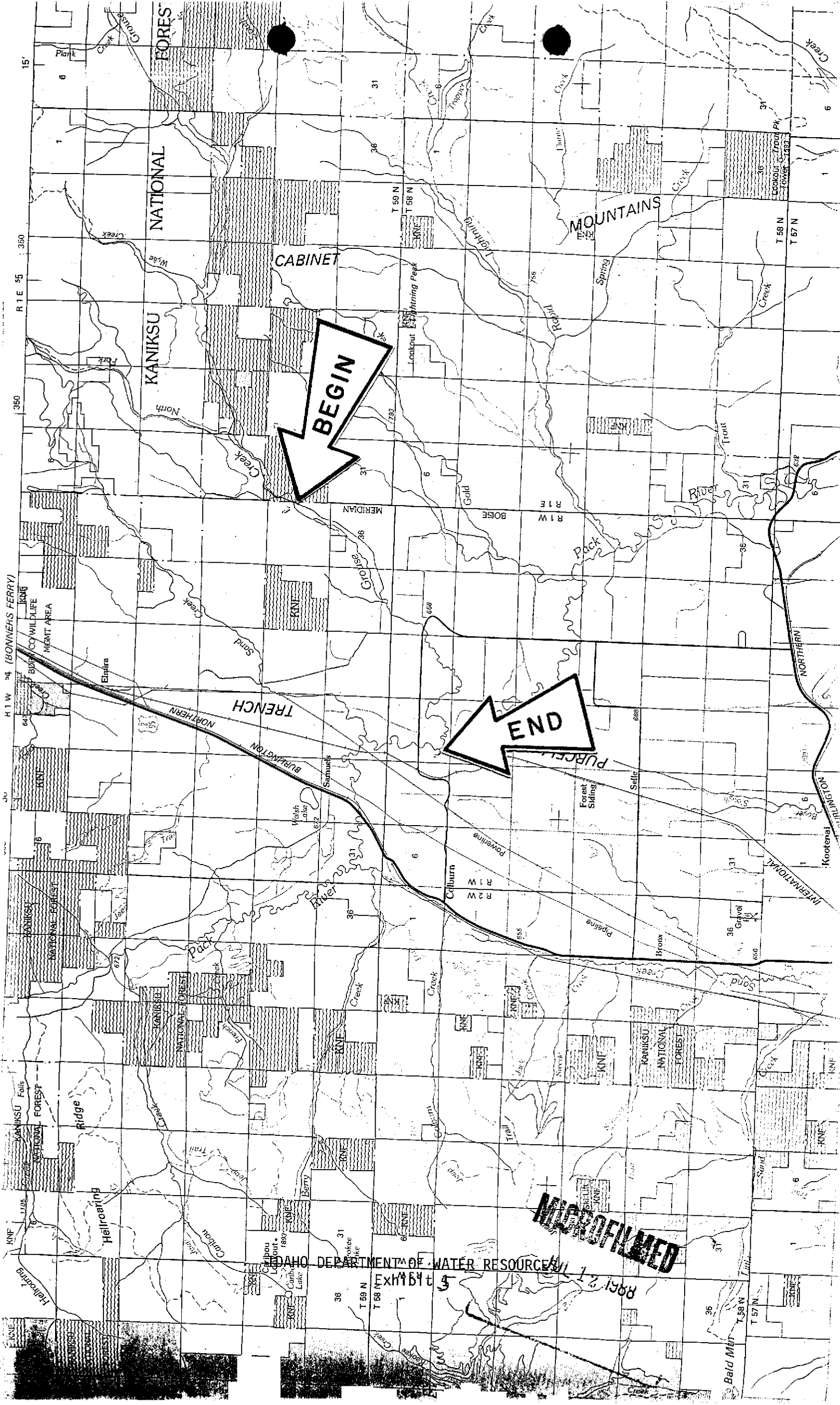
Miscellaneous Measurements

10-05-73	24.6 cfs
09-27-74	33.6
09-03-75	59.2
09-08-76	72.7
07-19-77	26.4
08-11-78	24.9

IDAHO DEPARTMENT OF WATER RESOURCES
Exhibit 2

REPRODUCED

JUL 12 1988



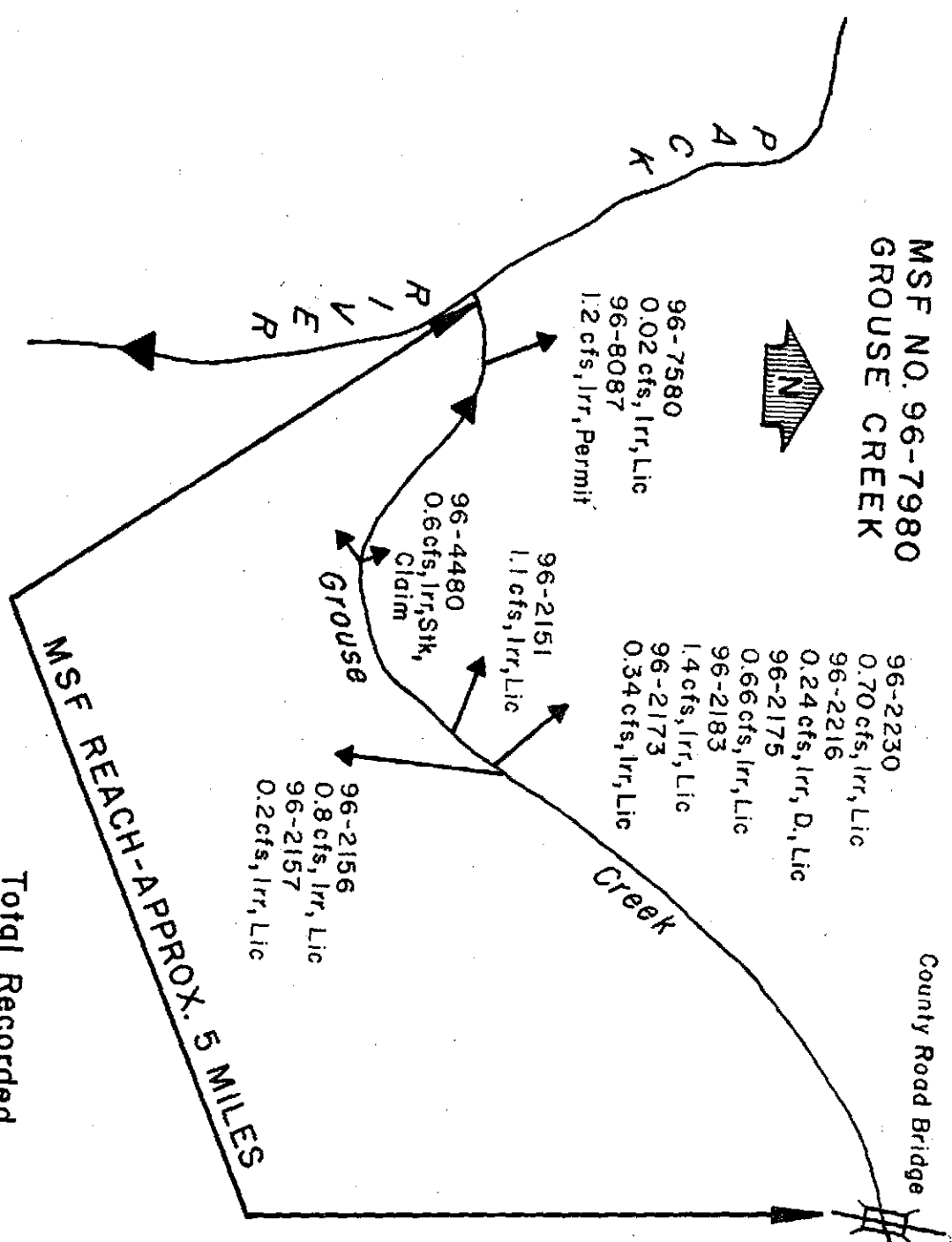
IDAHO DEPARTMENT OF WATER RESOURCES

EXHIBIT 5

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APR 2 1968

MSF NO. 96-7980 GROUSE CREEK



Total Recorded
Diversions = 7.26 cfs

IDAHO WATER RESOURCE BOARD FILING (cfs)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
14	14	14	85	85	67	67	14	14	14	14	14

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TABLE 1. GROUSE CREEK, Miscellaneous Measurements During Month (cfs)

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1959	9.0											14.8
1960	108		109	63.9			290	319	219	16.1	14.4	
1961	8.1	35.7	74.5	55.8	161		303	804	697	26.4	6.4	5.7
1962		8.7	18.3	21.8	53.2		153	328	430	6.0		14.0
1963	24.7		88.8	62.9	111	80.9		484	58.6	12.5		4.3
1964	6.8	243	40.3		32.5	30.9	290	1060	264	33		12.1
1965	24		100	57.1		103	846		342	21.8		13.1
1974												9.1
1975												30.8
1976												2
1977						32	182*	230*		91	15	
1978											6.3	
1979												
1980												7.6

* Average of several measurements

IDAHO DEPARTMENT OF WATER RESOURCES
Exhibit 31

RECEIVED
JUL 12 1988

IDWR STAFF - MSF NOTES

96-7979 & 96-7980 (Joint Hearing)

- On June ¹⁹~~18~~, 1981, the Idaho Department of Fish and Game presented to the Idaho Water Resource Board a request for a minimum stream flow water right on Lightning Creek tributary to Clark Fork, Bonner County.
- This request was considered by the Board and the same day the Board filed a corresponding application for permit with the IDWR, numbered 96-7979.
- Copies of the application were sent to the state departments of Fish and Game and Health and Welfare, and a news release of the filing was circulated.
- No further action was taken on the application until September, 1983. The IWRB held an informal public meeting to determine public interest with respect to the application on September 29, 1983. This meeting was advertised by notices published in the Sandpoint Bee, and by letters sent to the owners of land adjacent to the reach, and to legislators of nearby districts.
- Based on the public input received by Board members at the meeting and afterward, the Board resolved at a meeting on October 7, 1983 to request the Director to proceed with administrative action on the application.
- A public notice of the application and this hearing was advertised on October 26 and November 2 in the Sandpoint Bee. The hearing information was also sent to each party notified about the public meeting in the file, plus each party that attended the public meeting.
- Letters in support of the proposed minimum flow were received from:
 1. Tom Cook, Attorney - Lightning Creek
 - 2.
 - 3.
 - 4.
- Letters in Opposition were received from:
 1. Letter of questions received from Mr. Thomas [unclear] Grosse Creek.
 - 2.
 - 3.

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IDWR STAFF - MSF NOTES

96-7979

Page 2

- Present Staff Exhibit 1 which depicts the location of the reach of stream in question.
- Present Staff Exhibit 2 which shows other water rights near the proposed MSF.
- Present Staff Exhibit 3 which depicts miscellaneous measurements of Lightning Creek.

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MSF NOTES

- Be Sworn
- Name - David R. Tuthill, Jr.
- Address - 4639 Cochees, Boise, ID
- Employed by the Idaho Department of Water Resources
- The position I now hold is Supervisor, Water Allocation Section. I have been in this position for 5 years and have been employed by the Department for a total of 7½ years. I am registered as a Professional Engineer in Idaho.
- My statement will include:
 - 1) A chronology of Department activities to date with respect to the application.
 - 2) Information on existing water rights and hydrology that the Director may use in his action on the application.

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HEARING NOTES - Water Resource Board Member
96-7979 and 96-7980

- The requests for a minimum stream flows in Lightning Creek and Grouse Creek were submitted to the Idaho Water Resource Board by the Idaho Department of Fish and Game.
- On June 19, 1981, the Board reviewed the requests, with the intent that any minimum stream flow water rights:
 - 1) Would not interfere with any vested water right, permit, or water right application;
 - 2) Is in the public, rather than private interest;
 - 3) Is necessary for the preservation of fish & wildlife habitat, aquatic life, recreation, aesthetic beauty, navigation, transportation or water quality of the stream;
 - 4) Is the minimum flow and not the ideal flow; and,
 - 5) Is capable of being maintained.
- Although full information about these factors was not available at the Board meeting, Grouse Creek and Lightning Creek appeared to be worthy MSF candidates on first review. The Board opted to file the applications with the IDWR, and to view the matter more closely in a public information meeting. Therefore, the Board filed the applications on June 19, 1981.
- An informal public meeting was held on September 29, 1983, in Sandpoint. Based on public input received at this meeting and afterward, the Board adopted a resolution on October 7, 1983, requesting the Director to proceed with administrative actions on the application.

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JUL 12 1988

June 19 1981



October 28, 1983

Contact: Dave Tuthill 334-4104

State of Idaho, Statehouse, Boise, Idaho 83720

Phone: (208) 334-4440

NEWS RELEASE

FOR IMMEDIATE RELEASE

BOISE---A public hearing on minimum stream flow applications on Lightning and Grouse Creeks is scheduled for Wednesday, Nov. 16, at 9:00 a.m. at the Federal Building at Dover Highway and Division Street, Sandpoint. Norman C. Young, administrator, Resource Administration Division, Idaho Department of Water Resources (IDWR) will conduct the hearing.

Application #96-7979 seeks variable flows each month on Lightning Creek: January to March - 49 cubic feet per second (cfs); April, May - 84 cfs; June, July - 53 cfs and from August to December - 49 cfs. The reach extends from the confluence with the Clark Fork upstream about eight miles. The flows would maintain trout spawning and rearing habitat.

Application #96-7980 covers Grouse Creek from the confluence with Pack River upstream about five miles to the county road bridge. It also seeks a variable flow: January to March - 14 cfs; April, May - 85 cfs; June, July - 67 cfs and August to December - 14 cfs. These flows would also protect trout spawning and rearing habitat. Both applications were filed by the Idaho Water Resource Board at the request of the Idaho Department of Fish and Game.

--more--

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The public hearing will give interested parties the opportunity to express their support or opposition to the proposed stream flow application. Following the hearing, the director of the Department of Water Resources will either approve or deny the applications. If approved, they will then be submitted to the Idaho Legislature.

"Minimum stream flows are water rights in which the stream is not diverted," said Young. "They are junior to all water rights with earlier priority dates. These rights protect fish and wildlife habitat, water quality, aesthetics, recreation, navigation or transportation."

The public is encouraged to attend.

Linda White
Hotline Specialist

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Telephone
CONVERSATION MEMORANDUM

DATE Nov 10, 1983

FILE 96-7979 Lightning Ck. Min. Flow

NAME OF PARTY Tom Cook Attorney

EMPLOYEE Bob Fleener

RE: Appearance at the hearing and being considered a full party -

Tom Cook, attorney at Sandpoint, will be questioning three
four landowners on Lightning Ck. He also wants to have
the opportunity to cross-examine other witnesses the
testify for the minimum flow.

BDF

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Pre-Hearing Notes 11/16/83

Application 96-7979 Lightning Creek

Application 96-7980 Grouse Creek

~~Introduce~~ Introduce - Board Members + Staff

^{Explain law change in 1978}

Explain purpose of hearing - Obtain a record to allow IDWR to reach a decision

Explain How MSF operates

1st in time is 1st in right

MSF would take its place by priority

If established would be used to excl. future apps
+ could upon adj. be used for delivery

Explain How decision is made on MSF - criteria

① Will not int. with existing rights

② Public or oppose to private interest

③ Acc. for pres. of fish + wildlife, aquatic life
rec. aesthetic beauty, view, trees, w. q

④ Min flow not the ideal

⑤ Is capable of being maintained

Questions →

Explain How hearing will operate

2 types of parties - Clerk's parties

Tom Cooke Represents who? - DWR

Sworn testimony

Questioning(?)

Order of appearance

One or two hearings(?) - issues similar?

Tom Mehlert -

Mike Ruskey - Idaho

Jan - Roland Durr

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This is Sandpoint, Idaho November 16 1983. The time is 9:20 am. This is a hearing to consider application(s) # 96-7979 (Lightning CK) + # 96-7986 (Grouse CK) for minimum stream flows. I am NCA appointed by ARD director of IOWR to obtain a record of the issues concerning these applications as req'd by Section 42-1503 Idaho Code. This hearing will be held in accordance with the adopted rules of practice & procedure of IOWR. Unless otherwise specifically noted during the proceedings, the record will be considered closed & submitted for decision at the end of the hearing. Judicial notice will be taken of the dept records pertinent to the application(s).

Initial Decision

Full parties can file exceptions

Final decision by director

Legis review

Appeal to dist court

→ Extra appearance

→ Before proceeding with the applicant's cert'ions are there any preliminary matters including motions that should be considered?

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Sandpoint 11/17/83

Hearing Notes

96-2979 - Lito ck

96-2980 - Grouse ck

1) Intervenor

Tom Mehler - Lake Pend Oreille Id. Club

Mike Ruskay - Trout Unlimited

Vickie Younger - Grouse Creek Users

2) Left hearing record open for Public
Interest statements for 30 days

3) Sally Cupan Reviewed boat testimony

4) Tutthill reviewed his testimony

Exhibits 1, 2, + 3 + 4 entered & admitted

X- EXAM by Cook -

Don't know who or how measurements
were taken - No!

Exhibits 5, 6 + 7 Admitted

5) Vickie Younger - John Andrecheck

Basically support instream flow request.

Expressed concern that riparian owner
had not been contacted

Mr. Mahlon -

Lake Pend Oreille IDAHO Club

300 people = 1945 started

Promote fishing on Lake Pend Oreille
38th annual tournament

Two world records

Bull trout 32 LB5

Kemloops

39 LB5

JUL 12 1988

1947

1948

RECORDED

importance to local economy -
Cabinet Gorge dam took away
90% of spawning area -

Groose Ck & Lightning Ck are
the most important spawning areas

Do not want to deprive domestic
users but would favor fish -
don't say a stream used for spawning

Illustration photo's

Exhibits Tm 1 & Tm 2 & Tm 3
(Admitted)

X-Exam - Cook -

Scientific studies of spawning
in the reach - No -

X-Exam - Gobard

His club spent money on studies -

Yes, \$8,000 this year for
studies by _____

Cost of equipment - \$6,000 cost -
Growing in popularity -

James E. White - P.O. Box 158

(Clark Fork, Idaho) - (Public
interest statement)

Own 160 acres on Lightning Ck
in Sec 13.

Contests that riparian land owners
were notified -

Contests flow records - can go
intermittent on a day **MICROFILMED**
those subsurface rocks -

Believes min. flow should be allowed
only to extent necessary Do a better job on
mouth of Clark Fork -
Leave water rights alone, took @

JUL 1, 1968

future water rights on ^{an individual} a basis of
particulars leave door open for
hydro -

X- EXAM - Goddard

Flow Data wrong? No just
incomplete - 800 ft deep rocks
haven't took any measurements -

No only estimated Dec 1979 (21,000 cfs)

Have you seen spawning in lightning
CK - No -

No objection to a migration flow? -
No, but F&G should maintain
channels over the alluvial fan @
the mouth of creek.

X- EXAM - Cook

50 yrs exp with lightning Creek

F&G -

Tim Cochraner - Deputy, IOWA
F&G - #1 -

Grouse CK -

Fish species of concern - Klamath
t. Bull trout

Critical life history = spawning
for both - April & May

Juvenile rearing - year around

Upstream migration -

juveniles down -

Surveyed stream for these critical
life history - find reg. habitat sections

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timing?

- Send copies to Annona deck of min flow bulletin -

- approx. 3 miles upstream from the mouth - 4 transects at the habitat area -

Measurements of water velocity & substrate made -

Flow measurements - Grouse Ck -

HG Ex. 2 & 3 - Admitted

14 cfs identified for trout rearing
85 cfs for spawning @ 88% width
Migration flows adequate with these
67 cfs incubation for rainbow eggs

Ideal or optimum? Ideal is bankfull

Optimum is natural flow in system

bankfull 50-100 cfs

Natural - (?)

Flow chart - Ex. #4 - Admitted -

X-Exam - Cook

Ex. 2-3 - theoretical or real

- real based upon measurement -

one isolated measurement in July -

yes all taken @ one time -

X-Exam - Hydro Chart

would hydro system above be affected

- would have to cook **MICROFILMED**

Exam - Young

JUL 12 1960

① Different methodology is ??? than today - would come up with similar rec. spawning flow.

② Incubation flow is a fixed % by rule of thumb of spawning flow.

Lightning Creek

Species of concern - Longnose & Bull Trout
Spawning, juvenile rearing, incubation &
migration

Transects @ 7 miles upstream from
mouth -

7/26/77 - 58 cfs

FVG Ex. 849 - Admitted

Ideal Flow - 75 cfs

Ideal Spawning - 180 cfs

X-Exam -

Flow measurements for Lightning CK -
only measurements made in 7/26/77 -
Flow records must be available over

Re direct -

Work done under Cochran's direction -

Yes -

Lightning CK - loses water to the ground
in lower three miles of river

Important to maintain adequate flows

Ted Clark - Kootenai Idaho

Sandpoint - Ranger Dist -

Officer in BONAVER Co. Sportsman Assoc. -

although lots of water - spawning habitat is
limited - Club favors minimum flow

Karen Pratt - 2320 Gout Way

Dist & Abundance Survey
34 tributaries

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F&G Exhibit 5 - Admitted
Both Creek

Observed high densities of rainbow (trout) juvenile fry - 2nd highest in P.O. Lake
tribes

Considers it important to the preservation
of Klamath in P.O. Lake.

F&G Exhibit 6 - Admitted
Grave Creek

F&G Exhibit 10 - Admitted
Lightning Creek

Highway 200 bridge - good measurement
location -

Mouth of Cascade location is
suitable - no other structure suitable.

X-Exam - Cook

Bull trout spawns in Fall Klamath in
spring

F&G Exhibit 7 admitted in part

Bruce Riegan - C.D.A.

Cons. Officer -

Has been a Fisheries Research Biologist
for over 6 years -

B.S. Zoology & **MICROFILMED** work
in Fisheries management -

JUL 19 1960

Research in fish population
Assisted on studies on Grouse & Lightning Cr.
Grouse Cr important to P.O. Lake system (1/2)

Believes Grouse Cr supports 20-30% of
Klamath to P.O. Lake -
50 to 100,000 fingerlings - 17,000 by
Klamath - \$3.2 million annual value -

Perhaps 1/2 as due to Kamloops fishery.

Bull Trout - unique because of size -

Cabinet Gorge constructed in 1951 eliminated 90% of available habitat makes remainder very important -

Temp in Gorge CK measured @ 68°F further loss in flow could raise temp above this temp. (Critical level of temp)

Difficult to replace with hatchery production - No adequate techniques to handle bull trout & Kamloops.

Lightening Creek -

Highest temp of Lightening CK measured 62°F -

X-Exam - Can flows be maintained? not in lower end @ all times

Mr Derr - Roland Derr Clametek

Derr Ex. #1 - Admitted

Owens about 1 mile of Lightening CK along affected reach -

Lived there since 1926

Highly variable flow - essentially no water in July, August, Sept, in this reach on many years -

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Photographs

D-2 - Looking at bottom - near mouth
Looking North -

D-1 N -

D-1 S - Same place looking south

D-1 SB - Same place but in bottom -
no water

D-3A - ~~to~~

then D-11

—— all admitted

Below sinker - dry stretches

Plan to appropriate creek water -

Yes for the crusher - needs 4 cts

X - EXAM Caddis =

Opposed to someone taking all the water -
+ preventing someone from being able to take water

Could obtain water by digging a hole.

Karen Pratt - Rebuttal

- Trout are in pools & in flowing areas
above the sinker area -

Mike Ruskey - Trout Unlimited

Feels P.O. like Felder is on decision -

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Bull trout fishing particularly.

If not 49 cts, don't let it go any
lower. Maintain what we have, improve it
possible.

Strongly supports min flow - wants rfg &
also work on hab. for.

Franklin Jones -

possible for fee to swim thru rocks

Goddard

42-1503 - criteria reviewed for each
creek - feels evidence supports approval -

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96-7979 & 96-7980

Lightning Cr & Grouse Cr.

Hearing Officer - Norm Young

- Joint hearing for both creeks

- Full Parties

IWRB

IDFG

Tom Mehler - Lake Pend O'Rielle Idaho Club

Mike Ruskie - Id Panhandle Chapter of Trout Unlimited

Tom Cooke - Atty Representing Mr. Durr, Roland

Vicki Younger - Rep for grouse Cr riparian property owners

IWRB Statement - by Sally Cupan

- ID Dept of Water Resources - D. Tuthill

- Vicki Younger Statement - She is to be replaced by

John Andrewcheck

Tape 2. - Statement by Tom Mehler - Since 1945 the Lake Pend Orielle Idaho Club has been in existence.

- The 1983 Kamloop fishing derby attracted 1800 entrants

- The Kamloop fishery is important to local economy.

- Provided \$8,070 to IDFG to conduct studies on the

tributaries to Lake Pend Orielle concerning their spawning

Contributions

- Mehler has $\approx$ 6,000 worth of ^{fishing} eggs on his boat

- Exhibits TM 1, 2, 3 - photos

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Addresser
memo to
F&B

- James E White Po Box 158 Clark Fork Id - Pub witness statement
 - Owns $\approx$ 160 acres along Lightning Creek. 1600 feet
 - Has owned the property along Lightning Creek for 30 years & did not receive notice. - ?
 - Feels that flow data available do not substantiate
 - Has some expertise in hydro power & may want to make a development in this regard in the future.

IDFG

- Tim Cochran
 - Established credentials via Exhibit 1
- Grouse Cr
 - Exhibit 2 & 3
 - Exhibit 4 - Streamflow measurements on Grouse Cr.
- Lightning Cr
 - Dotted lines represent requested flows
 - 58 cfs measured on July 6, 1977 / Test site 7 miles up from Mouth of Creek
 - Exhibit 8 & 9 Rearing & Spawning curves for Lightning Cr.
 - Not optimum flow
 - Ideal rearing flow would be $\approx$ 75 cfs
 - Ideal spawning flow would be 180 cfs
 - Has not walked the stretch of ~~stream~~ **MICROFILMED** station

JUL 12 1988

Tape 4

Indiv
Presentation
interjected
because he
had to leave

Ted Clark - Indiv

Letter from Forest Service Ranger (James T. Bladen) ^{Sandpoint Ranger}

In favor of both min flows.

- As an office in the Bonner Co Sportsmen Assn.

Karen Pratt - Fisheries Technician IDFG

- Hired to conduct distrib survey
- Funding provided by Lake Pend Oreille Idaho Club
- Exhibit 5 - Shows stream with trib net for Grouse Cr & Lightning Cr.
- Member American Fishery Society
- Exhibit 6 - shows
 - Snorkeled & walked reach
- Grouse Cr.
 - familiar with salmonid population. Primarily Rainbow in Grouse Cr. Second highest population of Rainbow fry
 - Also contains cutthroat & Bull trout
 - Stream provides excellent spawning & rearing habitat.
 - Looks like one of the best rearing streams
 - Accessible to adfluvial fish
- Lightning Cr.
 - Exhibit 10 shows area
 - Walked & snorkeled
 - Good numbers of cutthroat, rainbow & bull trout
 - 36% of "reds" counted in the tribs were in the Lightning Cr drainage
 - Very good habitat for rearing juvenile trout & char

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JUL 12 1900

Karen Pratt cont

- Fry exist in the lower reaches of Lightning Cr.
- ^{Suggested} Locations for measuring devices
 - By Hwy 20 bridge in lower area
 - By confluence with Cascade Cr.
 - Locations shown on exhibit 10
- Collected no flow data
- Snorkelling July - Sept
- Sept 13 - Oct 6 '83 red counts
- Kamloop spawn in spg, Bull trout in fall

Bruce Rieman - Coeur D'Alene

- Regional Fishery mgr for Region 1 for 3 months
- formerly a principal research biologist and prior to that a senior research biologist
- 2/3 regmnts for doctorate
- Grouse Cr supports 20% to 30% of the fry for Gerard Kamloops
- Total fishery 50,000 - 100,000 annual fish-days
- $\approx$ 15,000 annual fish-days for Kamloop
- Since dam was built on Clark Fork, much of the rearing area has been lost (Cabinet Gorge Dam)
- Requested flows are important for maintaining habitat for rainbows & aquatic life
- Fishery is major recreational value of Pend O'Reille
- Kamloops & Bull trout are difficult to work with in a hatchery due to little knowledge about their requirements
- Kamloop population seems to be stable but size may be decreasing

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Tape 5
(this vicinity)

Bruce Riemann cont.

- 1980 - Trophy Kamloops 1,876 ($> 17"$)

Non trophy Kamloops ≈ 3000 ($\leq 17"$)

- Protection of these reaches is intended to maintain, not improve, the fishery

Tape 5

Lightning Cr

- Good densities of Bull trout

- 30% - 50% of Kamloop spawning in the Lightning Cr drainage (Documented in 1978 study, exhibit 7)

- Flows requested are needed to maintain Spawning, rearing & incubation

- Temps of 68°F have been measured - Sufficient flows needed to cool the streamflow

- During some periods requested flows are not available

MR Derr

- Questioned by Atty Cook

- Many times there is no water in Lightning Creek through Mr. Derr's property

Exhibits - Derr 1 Metzger map

Photos Taken latter part of Sept & early part of Oct '83

D-2 photo on his property

D-1a North

D-1b South - down Lightning Creek from Mr Derr's property - no water

D-3 A, D-3 B

D-4

D-5

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Mr Derr cont

D-6

D-7 - Due west

D-8

D-9, D-10, D-11 (Locations of photos to be placed)

- Plans to install a crusher & washing plant, using water from Lightning Cr, to use $\approx$ 4 cfs
- Lived in area since 1926
- More water is available upstream 1 mile from the Derr property

Mike Ruskey

- On Board of Directors of the Id Chapter of Trout Unlimited. Represents about 600 members from east west & north Id.
- 90% of Bull trout habitat reduced by the building of the Cabinet Gorge project.
- Believes that the bull trout fishery is in decline
- "Trout unlimited supports IDFG in their endeavors"
- Even though flows not available always, those flows that are available should be protected

ENCLOSURE

Record open for 30 days

JUL 12 1908

15 days for initial response + 15 days for response

Final Statement

Steve Goddard stated that the flows are capable of being maintained "in Grouse Creek" - acknowledges that the flow records do not substantiate this in Lightning Creek.



United States
Department of
Agriculture

Forest
Service

Sandpoint Ranger District
1500 Highway No. 2
Sandpoint, ID 83864

Reply to: 2610 Co-operative Relations
Idaho Department of Fish and Game

Subject: Minimum Streamflows - Lightning Creek and
Grouse Creek

To: Idaho Department of Water Resources
Northern District
4055 Government Way
Coeur d'Alene, ID 83814

Date: November 15, 1983

The Forest Service has long recognized the importance of Lightning and Grouse Creeks as critical habitat for adfluvial fish from Lake Pend Oreille. Our management activities have been directed toward enhancement and protection of this valuable habitat which is utilized for spawning and rearing purposes. Future fisheries habitat management of these valuable waters are of prime concern to the Forest Service and their protection is essential to the long range fisheries for Lake Pend Oreille.

The Forest Service would like to give our support to the Idaho Department of Fish and Game's request for minimum streamflows for Lightning and Grouse Creeks. The reservation of these minimum streamflows as proposed by the Idaho Fish and Game Department will insure sufficient flows for these valuable adfluvial and resident fisheries for years to come.

James T. Gladen
JAMES T. GLADEN
District Ranger

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JUL 12 1988



Thomas G. Henderson
Route 1, Box 567
Astoria, Oregon 97103

Mr. A. K. Dunn
Director
State of Idaho,
Department of Water Resources
Statehouse
Boise, Idaho

Re: Application for minimum Stream Flow impoundment of Grouse Creek, App. No. 96-7980
Gentlemen;

Due to conflict in work schedules and unpreparedness, I am unable to file for a notice of appearance at the upcoming Water Resource Application hearings in Sandpoint, Idaho on 16 November, 1983.

I am not sure whether I would even be qualified or allowed to file formal protest against this permit application, Re: Idaho Water Resource Permit Application No. 96-7980, Impoundment of Grouse Creek Stream Flow, max: 85.0CFS, Min: 14.0CFS, 8/1/83 to 7/31/84. However as an upstream, Grouse Creek property owner and potential user I do have several questions I would like resolved.

As the owner of the NW 1/4, Section 22, I am approximately 3.5 to 4.0 miles upstream from the head of the minimum streamflow reach boundary. Being above the confluences of Wylie Creek and the North Fork of Grouse Creek I am not real familiar with maximum and minimum streamflow rates at the point of your containment headwater area. However, I am concerned that I may be affected by this stream flow appropriation, particularly during late Fall and early Winter months.

Although I initially began purchase of this property on Grouse Creek, in November, 1978, work commitments and other aspects prevented my spending enough time on and around the property to form a sound basis for initiating an application for water rights permit. Finally, in 1981 I had managed to consolidate enough data to formulate a viable request for permit, which was granted in September, 1981. (Permit No. 96-8008) (Use of Grouse Creek Water for Irrigation, Stockwater and Firefighting)

However, one of my primary goals, which highly influenced my initial purchase of this property, was, after a six year search of Ida, Wash, Mont, and Oregon I had finally located land with excellent low head, micro-hydro generation potential. My wife is a native of Sagle, Idaho, but I do not qualify, as yet, as a resident. It is due to this Six (06) Month Idaho residency requirement that I have not yet filed a request for Hydro-Electric Water impoundment. (Hopefully by July, 1984 I will be qualified to file) Thus far, I have not constructed a temporary waterflow measurement Weir, nor have I determined stream bottom contours. However, utilizing simple "chip log" tests, I have roughly determined that late winter, through early summer flow rates are adequate for operation of parallel set of 35CFS turbines, while late summer to middle winter flow rates would necessitate dropping to a single, 35 to 40CFS turbine. (These figures are based roughly on a normal precipitation year, inherent to that area)

Now, with the introduction of your minimum flow requirements, which are of course prior to any of my permits, I have some concerns as to how this will affect me, particularly when, barring all Fish and Game Requirements for Fish Weirs and/or Ladders, I am finally able to apply for a Hydro-Electric Water Right Application. Therefore, my major concerns are; (a) Would a future application for hydro permit ever receive favorable consideration, or would it be immediately killed? and (b) During years of low precipitation/watertable, or for any other reason of nature,

your required maximum flow rate for a particular season be unattainable, what would happen to the upland users?? Would their flow rates be restricted or lowered to maintain your predetermined requirement? Although my particular plan for a low head system (Francis Turbine) only requires momentary impoundment and approximately 100 percent return to source, as should any well designed micro-hydro system, I am worried that a poor season or low precipitation winter and spring may necessitate complete shutdown, if the State is unable to maintain its minimum required flow rate, four miles downstream. Any assistance you might render me in clearing up my concerns would be greatly appreciated. Thank you very much.

Sincerely;



Thomas G. Henderson

NW 1/4, Sec. 22, T-59N, R-01E, B.M.

JUL 12 1988



RECEIVED

OCT 31 1983

Department of Water Resources

STATE OF IDAHO

OFFICE OF THE ATTORNEY GENERAL

JIM JONES
ATTORNEY GENERAL
STEPHEN V. GODDARD
WILLIAM B. DILLON, III
DEPUTY ATTORNEYS GENERAL
IDAHO DEPARTMENT OF FISH AND GAME

600 S. WALNUT ST.
P.O. Box 25
BOISE, IDAHO 83707
(208) 334-3715

October 28, 1983

Mr. David Tuthill, ^{DO} Supervisor
Water Allocation Section
Idaho Dept. of Water Resources
STATEHOUSE
Boise, Idaho 83720

Dear Dave:

The Idaho Department of Fish and Game hereby requests full party status in the following instream flow hearings scheduled to be heard on November 9, 10, and 16, 1983:

Malad River	Application No. 37-7920
Silver Creek	Application No. 37-7849
Grouse Creek	Application No. 96-7980
Lightning Creek	Application No. 96-7979

Thank you for your consideration in the matter.

Sincerely,

Stephen V. Goddard
Deputy Attorney General
Idaho Dept. of Fish and Game

SVG:tlv

MICROFILMED

JUL 12 1988



State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS

Governor

A. KENNETH DUNN

Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

October 28, 1983

RE: Hearings on Minimum Stream Flows

Dear Board Member:

In accordance with the resolution of the Idaho Water Resource Board which requested the Director, IDWR, to proceed with administrative actions on five minimum stream flow applications, hearings have been scheduled.

As described on the attached fact sheets, the hearing locations are as follows:

<u>Water Right No.</u>	<u>Source</u>	<u>Date, Time</u>	<u>Location</u>
37-7892	Malad River	Wed., Nov. 9, 1:30 pm	Gooding
37-7920	Malad River	Wed., Nov. 9, 1:30 pm	Gooding
37-7849	Silver Creek	Thur., Nov. 10, 9:00 am	Hailey
96-7979	Lightning Cr.	Wed., Nov. 16, 9:00 am	Sandpoint
✓ 96-7980	Grouse Creek	Wed., Nov. 16, 9:00 am	Sandpoint

Note that the hearing in Sandpoint will be held the day after the next Board meeting in Coeur d'Alene.

On behalf of the Director, you are cordially invited to attend the hearings. If you plan to attend, please coordinate your travel and lodging arrangements through Anita Warntjes.

Sincerely,

David R. Tuthill Jr.

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosures

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JUL 12 1988



State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS

Governor

A. KENNETH DUNN

Director

Mailing address:

Statehouse

Boise, Idaho 83720

(208) 334-4440

October 28, 1983

Idaho Dept. of Fish and Game
Attn: Dave Hanson
600 S. Walnut
Boise, ID 83706

Dear Dave:

The purpose of this letter is to follow up earlier telephonic communications by notifying you of upcoming hearings on minimum stream flow applications nos. 37-7920, 37-7849, 96-7979 and 96-7980 for which your agency acted as requestor.

Times and locations are noted on the enclosed fact sheet.

All known interested parties have been notified of the hearings. If any problems arise, please notify me at 334-4104

Sincerely,

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:ns

cc: Steve Goddard IDFG

Enclosures

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JUL 12 1988



State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS

Governor

A. KENNETH DUNN

Director

Mailing address:

Statehouse

Boise, Idaho 83720

(208) 334-4440

November 1, 1983

RE: Minimum Stream Flow Applications on Grouse Creek and
Lightning Creek

Dear Wateruser:

The Idaho Department of Water Resources will be holding a hearing on minimum streamflow applications on reaches of Grouse Creek and Lightning Creek. According to the records of this Department, you have a water right for which the point of diversion is located in or near the proposed minimum streamflow reaches.

Information describing the applications and the time and place of the hearing is shown on the enclosed fact sheet. Also enclosed is a brochure which describes the minimum streamflow procedure.

At the hearing you will have an opportunity to provide testimony. If you wish to become a full party with the opportunity to cross-examine witnesses, please advise this office on or before November 11, 1983. On behalf of the Idaho Department of Water Resources, you are cordially invited to attend.

Sincerely,

David R. Tuthill Jr.

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosures

RECEIVED
JUL 12 1988

A copy of this letter was
sent to the individuals
on the following page on
11/1/83 N. Seale

Ben Nickerson
Samuels, ID 83862

Mike F. Harrington
Jack & Grace Popplewell
Samuels, ID 83862

W.W. & J.F. McNall
Samuels, ID 83862

George W. Langford
Samuels, ID 83862

Alfred R. Krebs
Samuels, ID 83862

Harvey & Betty Rutherford
Box 168
Samuels, ID 83862

F.M. Balison
Rt. 1, Box 166
Samuels, ID 83862

Frank & Judith Kerns
Rt. 1, Box 160
Samuels, ID 83862

Monroe C. Noble
Samuels, ID 83862

*Waterusers
Grouse Crk.*

MICROFILMED

JUL 12 1988



State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS

Governor

A. KENNETH DUNN

Director

Mailing address:

Statehouse

Boise, Idaho 83720

(208) 334-4440

November 1, 1983

RE: Minimum Stream Flow Applications on Grouse Creek and
Lightning Creek

Dear Property Owner:

The Idaho Department of Water Resources will be holding a hearing on minimum streamflow applications on reaches of Grouse Creek and Lightning Creek. According to the records at the county courthouse, you are one of the owners of property adjacent to one of the reaches where the minimum streamflows are proposed.

Information describing the applications and the time and place of the hearing is shown on the enclosed fact sheet. Also enclosed is a brochure which describes the minimum streamflow procedure.

At the hearing you will have an opportunity to provide testimony. If you wish to become a full party with the opportunity to cross-examine witnesses, please advise this office on or before November 11, 1983. On behalf of the Idaho Department of Water Resources, you are cordially invited to attend.

Sincerely,

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosures

RECEIVED

JUL 12 1988

A copy of this letter was
sent to the individuals on
the following pages on
11/1/83 Y. Seale

Irene V. Stoned
9150 Malad
Boise, ID 83704

Dennis M. McNall
Rt. 1, Box 26
Samuels, ID 83862

Rocco Tucci
543 N. Lamb Blvd. #50
Las Vegas, NV 89110

George A. Miller
Rt. 1, Box 27
Samuels, ID 83862
1

Compton White
Box B
Clark Fork, ID 83811

James McNall
Box 1622
Sandpoint, ID 83864

Esther Widgren
Box 4
Clark Fork, ID 83811

Floyd Pulham
Box 52
Naalehu, HI 96772

F.M. Balison
Rt. 1, Box 166
Samuels, ID 83862

Harvey F. R

Leo Bunker
Box 837
Sandpoint, ID 83864

Jerry L. & Dorothea Van Doyen
HCR 66 Box 38
Sandpoint, ID 83864

Jack & Carol Dollahite
409 Magnolia
Costa Mesa, CA 92627

George Weiss
Rt. 1, Box 155
Samuels, ID 83864

James M. Dunn
Rt. 1, Box 156
Samuels, ID 83862

Dave Reynolds
Star Rt. Box 338
Hope, ID 83836

Dale G. Gosney
Rt. 1, Box 170
Samuels, ID 83862

Allen W. Rolfson
Rt. 2, Sunnyside Rd.
Prescott, AZ 86301

Harold A. Krebs
Rt. 1, Box 22
Samuels, ID 83862

Mark Samson
1603 Manitou
Boise, ID 83706

J. Francis McNall
Rt. 1, Box 25
Samuels, ID 83862

Merle Samson
2409 Robert St.
Boise, ID 83705

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JUL 12 1988

*Property owners
House Ck.*

Joseph Schmidt
4634 Good Dr.
New Orleans, LA 70127

Dan G. Taylor
1531 Lily St.
El Cajon, CA 92021

Bernard Silva
94437 Nui St.
Mililani Town, HI 96789

Grouse Crt.

Property owners
Grouse Crt.

RECORDED

MAR 19 1988

MINIMUM STREAM FLOW
Fact Sheet

Water Right No.: 96-7979

Source: Lightning Creek

Applicant: Idaho Water Resource Board

Requesting Agency: Idaho Department of Fish and Game

Date Application Filed: June 19, 1981

<u>Rate of Flow:</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
	49	49	84	84	53	53	49	49	49	49	49	49 cfs

Location of Reach: From the confluence with Calrk Fork within the SW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 3, Township 55 North, Range 2 East, upstream approximately 8 miles to the confluence with the East Fork in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 32, Township 57 North, Range 3 East.

Purpose: To maintain trout spawning and rearing.

Hearing: Wednesday, November 16, 1983, at 9:00 a.m. at the Federal Bldg., corner of Dover Hwy. and Division St., Sandpoint

Water Right No.: 96-7980

Source: Grouse Creek

Applicant: Idaho Water Resource Board

Requesting Agency: Idaho Department of Fish and Game

Date Application Filed: June 19, 1981

<u>Rate of Flow:</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
	14	14	14	85	85	67	67	14	14	14	14	14 cfs

Location of Reach: From the confluence with the Pack River within the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 4, Township 58 North, Range 1 West, upstream about 5 miles to the county road bridge in the SE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 25, Township 59 North, Range 1 West.

Purpose: To maintain trout rearing and spawning habitat.

Hearing: Wednesday, November 16, 1983, at 9:00 a.m. at the Federal Bldg., corner of Dover Hwy. and Division St., Sandpoint

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JUL 12 1988



State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS

Governor

A. KENNETH DUNN

Director

Mailing address:

Statehouse

Boise, Idaho 83720

(208) 334-4440

October 27, 1983

Rep. James F. Stoicheff
615 Lakeview
Sandpoint, ID 83864

RE: Public Hearing Regarding Water Rights for Minimum Stream Flows

Dear Representative Stoicheff:

The Idaho Department of Water Resources has scheduled a public hearing on two minimum streamflow applications for water rights proposed in or near your legislative district. You may recall that in September the Idaho Water Resource Board held public meetings on these two minimum streamflow applications. Based on public input the Board requested this Department to proceed with processing each of the applications.

The hearing for the applications on Grouse Creek and Lightning Creek will be held at the Federal Bldg., corner of Dover Hwy. and Division St., Sandpoint, at 9:00 a.m. on Wednesday, November 16. Please find enclosed a fact sheet describing the applications and a brochure about the minimum streamflow procedure.

On behalf of the Director of the Idaho Department of Water Resources, you are cordially invited to attend.

Sincerely,

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosures

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JUL 12 1988



State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

October 27, 1983

Rep. Tim Tucker
K. V. Ranch
Porthill, ID 83853

RE: Public Hearing Regarding Water Rights for Minimum Stream Flows

Dear Representative Tucker:

The Idaho Department of Water Resources has scheduled a public hearing on two minimum streamflow applications for water rights proposed in or near your legislative district. You may recall that in September the Idaho Water Resource Board held public meetings on these two minimum streamflow applications. Based on public input the Board requested this Department to proceed with processing each of the applications.

The hearing for the applications on Grouse Creek and Lightning Creek will be held at the Federal Bldg., corner of Dover Hwy. and Division St., Sandpoint, at 9:00 a.m. on Wednesday, November 16. Please find enclosed a fact sheet describing the applications and a brochure about the minimum streamflow procedure.

On behalf of the Director of the Idaho Department of Water Resources, you are cordially invited to attend.

Sincerely,

A handwritten signature in cursive script that reads "David R. Tuthill Jr." is written over the typed name.

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosures

MICROFILMED

JUL 12 1988



State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS

Governor

A. KENNETH DUNN

Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

October 27, 1983

Senator Kermit V. Kiebert
Box 187
Hope, ID 83836

RE: Public Hearing Regarding Water Rights for Minimum Stream Flows

Dear Senator Kiebert:

The Idaho Department of Water Resources has scheduled a public hearing on two minimum streamflow applications for water rights proposed in or near your legislative district. You may recall that in September the Idaho Water Resource Board held public meetings on these two minimum streamflow applications. Based on public input the Board requested this Department to proceed with processing each of the applications.

The hearing for the applications on Grouse Creek and Lightning Creek will be held at the Federal Bldg., corner of Dover Hwy. and Division St., Sandpoint, at 9:00 a.m. on Wednesday, November 16. Please find enclosed a fact sheet describing the applications and a brochure about the minimum streamflow procedure.

On behalf of the Director of the Idaho Department of Water Resources, you are cordially invited to attend.

Sincerely,

David R. Tuthill Jr.

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosures

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JUL 12 1988