

Baxter, Garrick

From: Travis Thompson [tlt@idahowaters.com]
Sent: Thursday, June 25, 2009 11:21 AM
To: Baxter, Garrick
Subject: Carmen Creek 706 Report
Attachments: 062209 Shaw Memo.pdf; 062509 Thompson Memo.pdf; PODS and SENWNW S2 T22N R22E.pdf

Garrick,

Here are two additional memos and a map (IDFG pod map provided by IDFG in response to my 2/18/09 letter) for your and Gregory's review. Let me know if you have any questions or trouble with the attachments.

Thanks,

Travis

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7/24/2009

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MEMORANDUM

TO: Garrick Baxter, Gregory Taylor (IDWR)
FROM: Travis Thompson
DATE: 6/25/09
RE: Information Related to Certain Water Rights (Carmen Creek)

This memo follows up our May 26, 2009 memorandum. Also, please find attached a memorandum from Dave Shaw dated June 22, 2009. As indicated both memos provide additional information for IDWR to consider in advance of issuing a 706 Report for the SRBA Court.

I. Al and Alvera Fols' Water Rights Place of Use:

IDWR's shapefile for the place of use for water rights 75-14050, 75-14052, 75-14056, 75-14058, 75-14060 was apparently overlaid wrong since it appears to show land in Lot 1 as part of the place of use. All of the Fols' property is located in Lot 2.

II. Submittal by Hyrum Erickson on behalf of "Burns Group":

I received various information from Hyrum Erickson on June 5, 2009, including memos, aerial photos, photos, deeds, and other records.

Issue: Author / Basis for Memos / Remarks

None of the memorandums or marked up photos or maps identify an author of the remarks or interpretation of other documents. Accordingly, this information should be evaluated as to who prepared it and upon what basis. Since no author is identified any remarks or interpretations should be disregarded at this point.

Issue: Aerial Photos

The packet from Mr. Erickson includes aerial photos from 1945, 1960, 1968, 1969, 1978, 1981, 1998, and 2004. IDWR should investigate the origin of these photos to determine a month and date. As depicted, all photos appear to show healthy vegetation growth upon Lot 2. It would be important to know the dates these photos were taken and look to which water rights were in priority at that time based upon Watermaster records.

Issue: IDFG Fish Screens / Diversions

Did IDFG combine or consolidate the points of diversion referenced as C8 and C9? The memo infers this work was interrupted due to "Complaint by Thompson", but no information has been provided to clarify or explain this statement.

None of the information, including the *Carmen Creek Fisheries Report* (Ex. A), identifies a point of diversion on Carmen Creek located in the SENWNW Sec. 2, T 22N, R 22E, Lemhi County (POD #2 in 5/26/09 memo). None of the maps submitted show a point of diversion in this location either.

Although some of the photos allude to some work performed on April 12, 2009, none of the information demonstrates that the point of diversion is capable of delivering water to the claimants Hudson, Mattis, and Jackson, particularly during low water later in the irrigation season. Given the work that was attempted this spring it is obvious our concerns raised with IDFG on February 18, 2009 were valid (although IDFG did not undertake this work). See Ex. B (2/18/09 letter to IDFG).

III. Late Claims Filed

Certain claimants have filed, and the SRBA Court granted motions to file late notices of claim for "exchange" water rights on Carmen Creek: 75-14540. As IDWR is aware, all water under the original "exchange" water rights decreed with 1875 and 1882 priority dates has already been recommended to the existing claimants. Accordingly, unless IDWR issues new recommendations for all claimants, we would submit there is no part of the water right left to recommend for the "late claims".

Although we believe new recommendations should be issued recognizing the "accomplished transfer" of the water rights for lands in Lot 2, IDWR must issue new recommendations for all existing "exchange" water rights in the event that the "late claims" are recommended.

Exhibit A

Carmen Creek Fisheries Report



Prepared for:
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Project Number: 1994-015-00
Contract Number: 27873

March, 2007

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ABSTRACT

The Idaho Department of Fish and Game's (IDFG) Anadromous Fish Screen Program based in Salmon, Idaho conducts fisheries surveys in tributary streams utilizing electrofishing methodologies to document the distribution, occurrence, and abundance of salmonids throughout these watersheds. These initial watershed inventories provide baseline data for monitoring and evaluation assessments of future fisheries improvement projects. The objective of the surveys is to document the presence of fish species and life histories in the watershed and determine management directions for improving irrigation practices for fisheries benefits. Irrigation improvements may include improving fish passage, identifying fish screening opportunities, diversion consolidation, diversion elimination, decreasing irrigation conveyance losses, and producing water-savings for increasing in-stream flow. Carmen Creek, a tributary to the mainstem of the Salmon River, was investigated in the summer of 2006. Twenty sites were systematically selected throughout the watershed for sampling with electrofishing. Fish species sampled include juvenile Chinook salmon *Oncorhynchus tshawytscha*, steelhead/rainbow trout *O. mykiss*, westslope cutthroat trout *O. clarki*, bull trout *Salvelinus confluentus*, mountain whitefish *Prosopium williamsoni*, shorthead sculpin *Cottus confusus*, speckled dace *Rhinichthys osculus*, longnose dace *R. cataractae* and a juvenile sucker species *Catostomus* sp.. Flow measurements taken at several locations throughout the watershed ranged from 2.1 cfs to 63.4 cfs, although the lower stream channel is virtually dry during the peak of the irrigation season. An inventory of irrigation diversions indicate at least 39 points of diversion for 147 claims to water rights. None of the diversions have operational fish screens on them meeting NMFS Fisheries criteria for screening juvenile salmonids. Potential conservation measures for the protection of fish in Carmen Creek include implementation of water savings projects to reestablish flows throughout its length and the installation of fish screens to protect fish from entrainment into irrigation systems.

INTRODUCTION

The Idaho Department of Fish and Game's (IDFG) Anadromous Fish Screen Program (Screen Program) based in Salmon, Idaho is funded in part by Bonneville Power Administration (BPA) through its Fish & Wildlife Program. In the upper Salmon River basin, fish screening to protect anadromous fish has taken place since the late 1950's. The Screen Program has installed fish screens (~235) and fish passageways on most of the main-stem river corridor diversions on the Salmon River, Lemhi River, Pahsimeroi River, and North and East Fork Salmon Rivers. These larger diversions were direct threats to many salmonids, including: migratory pre-smolt and smolt spring/summer Chinook salmon *Oncorhynchus tshawytscha*, steelhead *Oncorhynchus mykiss*, sockeye salmon *Oncorhynchus nerka*, and fluvial bull trout *Salvelinus confluentus*. Most unscreened diversions are currently found throughout both the large and small tributary systems of the main rivers, and number in the hundreds throughout the basin. Unlike most of the main-stem river diversions, which occur on private property, many diversions in the tributaries are located on a combination of private property as well as lands administered by Federal land management agencies, primarily the Bureau of Land Management (BLM) and the US Forest Service (USFS).

Federal land management policy decisions, Endangered Species Act (ESA) recovery goals, and the initiation of third party lawsuits allowed under ESA demonstrated the need for a prioritized approach for implementing projects in the tributaries of the Salmon River basin. State and Federal agencies involved in ESA recovery including IDFG, Idaho Department of Water Resources (IDWR), Idaho Governor's Office of Species Conservation (OSC), National Oceanic and Atmospheric Administration (NOAA) Fisheries Service, Upper Salmon Basin Watershed Project (USBWP), and the United States Fish and Wildlife Service (USFWS) have developed a prioritized tributary work plan for addressing habitat improvement projects in the upper Salmon River basin. The developed document, "Screening and Habitat Improvement Prioritization for the Upper Salmon Sub-basin" (SHIPUSS), effectively ranks tributaries to prioritize restoration efforts (USBWP Technical Team, 2005). The main goal of SHIPUSS was to create a prioritized list of streams within watersheds to guide screening and habitat improvement projects in the upper Salmon River basin. The SHIPUSS document is used by IDFG, USBWP, and other local interested parties in conjunction with project level prioritization to accomplish screening and habitat objectives. The Screen Program uses SHIPUSS as a guide to implement actions funded by BPA. Priority I streams are those that have the potential to realize immediate, tangible benefits to fish if recovery efforts are directed toward them. Priority II streams are those that will also have tangible benefits, but they may be less substantial or may be delayed for quite some time. There may be other factors limiting the potential of these tributaries, such as chemical contamination from mines and uncooperative landowners. Priority III streams are low priority streams because they have very limited production potential, or will require extremely high levels of effort to restore their productivity. The document lists Carmen Creek as a Priority I stream.

Prior to implementing conservation actions, the Screen Program conducts fisheries surveys in prioritized tributary streams utilizing electrofishing methodologies to document the distribution, occurrence, and abundance of salmonids throughout these watersheds. These initial watershed inventories provide baseline data for monitoring and evaluation assessments of future fisheries improvement projects. The objective of the surveys is to document the

presence of fish species and life histories in the watershed and determine management directions for improving irrigation practices for fisheries benefits. This work includes determination of landowner willingness to participate in future year fisheries improvement projects, mapping irrigation systems, and documentation of seasonal in-stream flows, fish passage issues, and identifying water conservation potential.

Irrigation improvements may include improving fish passage, identifying fish screening opportunities, diversion consolidation, diversion elimination, decreasing irrigation conveyance losses, and producing water-savings for increasing in-stream flow. Consolidation of irrigation diversions reduces the number of times a fish is entrained into canals and decreases the overall cost of screening. Diversion eliminations reduce ditch entrainment potential and eliminate fish passage issues at the typical push-up gravel structures. Conversions from gravity flood irrigation systems to sprinkler systems can reduce irrigation water consumption by up to seventy percent. Water conservation and riparian improvements decrease water temperatures, improve habitat for rearing, and improve available in-stream flow conditions. This tributary wide approach has been found to result in better overall fisheries improvements.

STUDY AREA

Carmen Creek is a tributary to the mainstem of the Salmon River, with its confluence at river kilometer 407, ten river kilometers downstream of the mouth of the Lemhi River, eight kilometers north of Salmon Idaho, in Lemhi County. The watershed flows off of the southwest flank of the Beaverhead Mountains in the Bitterroot Range, between Idaho and Montana. Most of the flow comes down the mainstem of Carmen Creek from the north end of the watershed, with an additional amount coming in from the Freeman Creek tributary, about half way up the watershed. Watershed topography is varied, with consistently higher gradients near the headwaters, which is the Continental Divide. Watershed elevations range from 1,175 m at its confluence with the Salmon River up to 3,130 m at Freeman Peak, the highest point in the headwaters of Carmen Creek. Total watershed area is approximately 14,245 ha.

Land ownership is mixed. The bottomland within the lower half of the watershed is mostly privately owned, with much of it irrigated pasture and hay fields. Most of the upper half of the watershed is on publicly owned lands, managed by the Salmon-Challis National Forest, and a lesser amount managed by the Bureau of Land Management (BLM). A good road provides access to the lower half of the watershed, to various private holdings and residences. An improved dirt and gravel road continues past the lower privately owned reaches providing limited access into the publicly owned upper parts of the watershed.

The lowermost reaches of Carmen Creek upstream of the S-09 ditch siphon become dewatered due to irrigation withdrawals after most of the seasonal runoff has ended (Photo 1). The fish screen for the S-09 ditch returns 1.16 cfs of water into Carmen Creek through the ten inch fish bypass pipe immediately downstream of the siphon (Photo 2). This has been observed to be the only flowing water in this segment of Carmen Creek during the irrigation season after the end of upper watershed runoff flows. Downstream of the Hwy 93 bridge Carmen Creek receives water from the Carmen Slough and water diverted into a side channel of the Salmon River, which is described as the S-05/06/07 diversion. This segment of stream flows a short distance until it reaches a fish screen and an Obermeyer weir with a fish ladder (Photo 3).

Fishery Resources

Prior to this year's fishery survey, information on the presence and distribution of anadromous, fluvial or resident fish populations within the Carmen Creek watershed is sporadic. Historically, spawning and rearing habitat was probably supported within the watershed for at least two federally-listed anadromous fish species, spring/summer Chinook salmon and steelhead. Along with all other waters of the upper Salmon River watershed, Carmen Creek was designated as critical habitat for Snake River spring and summer Chinook salmon on December 28, 1993 (58 CFR 68543) and for steelhead on February 16, 2000 (64 CFR 5740). It has probably also supported resident and fluvial forms of westslope cutthroat trout *O. clarki lewisi* and threatened bull trout *Salvelinus confluentus*, and there may have been a resident population of rainbow trout *O. mykiss*. Other native species suspected to be present in Carmen Creek include mottled sculpin *Cottus bairdii*, shorthead sculpin *C. confusus*, redbside shiner *Richardsonius balteatus*, longnose dace *Rhinichthys cataractae*, speckled dace *R. osculus*, northern pikeminnow *Ptychocheilus oregonensis* and bridgelip sucker *Catostomus*

columbianus. It is also possible that pacific lamprey *Lampetra tridentata* were once present in Carmen Creek.

Although IDFG has not stocked fish in any of the free-flowing reaches of Carmen Creek since at least 1967, land owners have stocked rainbow trout of hatchery origin into some of their privately owned ponds. Additionally, Salmon-Challis National Forest personnel and the Shoshone-Bannock Tribe used streamside egg incubation boxes to supplement the watershed with steelhead (Bruce Smith, personal communication). Records indicate that one box in Carmen Creek and one box in Freeman Creek were stocked with up to 55,900 eggs per year with Sawtooth Hatchery or Pahsimeroi Hatchery origin steelhead from 1998 until 2003.

METHODOLOGY

Fishery Surveys

Fish presence and abundance was documented by utilization of backpack electrofishing methodologies in the summer of 2006. Sample sites were systematically selected to be 1.5 km apart from each other as measured with a Geographical Information System (GIS) device. Sample sites in privately owned reaches of the stream were sampled only if landowner permission was granted for access, and some sites were more or less than 1.5 km apart if some physical features of the watershed precluded sampling (e.g. dry). The downstream boundary location of each site was recorded with a GIS device providing a Universal Transverse Mercator location set to North American Datum 27 metric units in Zone 12 (Table 1).

Electrofishing sites were generally 100 m long with a block net set at the upper and lower boundaries. Fish were sampled by using a generator powered Smith-Root Model 15-D POW Electrofisher with electrical wave form and output set to guidelines established by NOAA Fisheries for salmonids listed under the Endangered Species Act. The total amount of time that the electrofisher was activated was recorded in seconds for each pass at each sample site. The sampling crew consisted of one person electrofishing with two to three people netting stunned fish, depending upon stream size. The crew worked their way upstream through the sample site, electrofishing as much habitat as possible, with all fish sampled being put into a five-gallon bucket with an aerator. After the completion of each electrofishing pass, most salmonids were measured for fork-length (mm) and weight (g), and all other fish species were enumerated. Before handling, all fish were anesthetized with a concentrated 30 g/L solution (diluted to 90 mg/L) of MS-222 to reduce stress and prevent injury. In between passes, fish were held in recovery live-wells, and released back into the sample site after completion of all 3 passes and processing.

At least half of the sites were planned to be sampled with two or more passes of electrofishing to derive population estimates for salmonid species by the use of successive depletion techniques and the Microfish 3.0 computer software package (Van Deventer and Platts, 1985). This program uses the Burnham maximum-likelihood population estimate model generating total population estimates, probability of capture, standard error of total population, and 95% confidence intervals for total population estimates (Van Deventer and Platts, 1983). For multiple pass transects, we met the assumptions of depletion-removal electrofishing by (1) placing block nets (0.5 cm mesh) at both ends of a stream sample site (closing the population), (2) sampling each sample site within the same day (usually 3 hours), and (3) using constant effort in each pass. We also used multiple pass electrofishing to produce an index of abundance based on single pass sampling. This was done by regressing the number of fish

sampled (age-1+) in the first pass of electrofishing against the population estimated from the Microfish 3.0 program (Kruse et al. 1998; Kevin Meyer, IDFG, unpublished data). The index for this regression was calculated for steelhead/rainbow trout and cutthroat trout combined from data derived from sampling numerous sites throughout the Lemhi River and upper Salmon River subbasins in 2004, 2005 and 2006. The least-squares linear regression model of the population estimate of rainbow trout and cutthroat trout combined regressed against the number of rainbow trout and cutthroat trout caught in the first pass of electrofishing was $y = 1.83x$, where x is the number of fish caught in the first pass of electrofishing and y is the estimate based on the Burnham maximum-likelihood population model (Van Deventer and Platts, 1983). The r-squared value of this regression was 0.806. The 95% confidence intervals for all x values between 1 and 50 ranges from 29.6 to less than 31.0. We therefore used this method as a predictor of the population estimate without the C.I.

Habitat Surveys and Diversion Inventories

Total area of the electrofishing site was calculated from the average of several wetted stream width measurements taken every 20 m throughout the length of the sample site. The approximate percentage of instream habitat classified as pool, riffle, run, or pocket water was estimated from visual observations. Bank and riparian conditions were given a general rating for providing cover, shading and stability. Elevation of the sites sampled was acquired off of topographical maps. Water temperatures were measured at each site with a hand-held thermometer at the time fish samples were taken. Stream gradient was measured by dividing the rise in elevation as measured with a sight level by total length of the sample site. Total streamflow (discharge) measurements were made by summing the products of the subsection areas of the stream cross section and their respective average velocities. Average velocities were estimated with a Model 2100 Series Current Velocity Meter manufactured by Swoffer Instruments, Inc. A minimum of ten subsections were measured across each stream cross section that flow measurements were taken. The selection of a cross section was based on the presence of laminar flow over a relatively smooth substrate. In most instances the flow measurement was made within an electrofishing sample site, with measurements taken within representative reaches of the watershed or tributary.

The Idaho Department of Water Resources database was searched to acquire information on the total numbers and locations of points of diversion (PODs) and water rights within the watershed. Water users were consulted with for most site inspections and discussions on how water is managed and distributed throughout the watershed. Site inspections were made for evaluating the prospects for diversion consolidation, installing fish screens and implementation of water savings programs and devices.

RESULTS

Fishery Surveys

A total of 20 sites were sampled by electrofishing in the Carmen Creek watershed. There were 13 electrofishing sites on privately owned property and 7 on property managed by either the Salmon-Challis National Forest or the Bureau of Land Management (Figure 1). Collectively all sites encompassed 1,962 m of stream length and 9,129 m² of sampled stream habitat (Table 1). Surveys were conducted between July 5 and July 26, 2006.

Multiple-pass depletion removal electrofishing methodologies were conducted on 15 of the 20 sites for a population estimate of all salmonids present, the rest were sampled with a single pass of electrofishing (Table 2). Fish were found in 19 of the 20 sites sampled. Species sampled include juvenile Chinook salmon, steelhead/rainbow trout, bull trout, westslope cutthroat trout, and shorthead sculpin (Table 3). Population estimates were made only on salmonids at least 70 mm fork length due to inefficient sampling of smaller young-of-the-year fish.

Chinook Salmon

Juvenile Chinook salmon parr were sampled from the five lowermost electrofishing sites on Carmen Creek (Figure 2). The uppermost electrofishing site that Chinook salmon were sampled from was SCC-05, which is approximately 1.5 km downstream of the Freeman Creek confluence. None were measured or weighed to reduce handling stress. The highest density of Chinook salmon sampled was 13 fish in two passes at site SCC-02 for a population and density estimate of 2.8 fish/100m² (Table 4).

Steelhead/Rainbow Trout

Steelhead/rainbow trout were sampled from twelve of the twenty electrofishing sites, which included two tributaries to Freeman Creek (Figure 3). The highest density of steelhead/rainbow trout sampled in the first pass of electrofishing was 14.2 fish/100m² at site SCCFC-02 (Table 5). The size of steelhead/rainbow trout sampled ranged from 25 mm to 240 mm in fork length (Figure 11, Table 6). The remains of an adult steelhead, which appeared to be from a fish that had entered the watershed the previous spring, was found in the water at electrofishing site SCC-05, indicating that adult steelhead did migrate at least eight kilometers into the watershed in the spring of 2006.

Bull Trout

Bull trout were sampled from the three uppermost electrofishing sites on the main stem of Carmen Creek (Figure 4). The highest density of bull trout sampled in the first pass of electrofishing was 6.9 fish/100m² at site SCC-11 (Table 7). The largest specimen was 270 mm in fork length and the smallest 30 mm, indicating that most were probably either juvenile fish or resident adult fish (Figure 12, Table 8).

Westslope Cutthroat Trout

Westslope cutthroat trout were sampled from 5 of the 20 sample sites, with all specimens being found in Freeman Creek or its tributaries (Figure 5). The highest density of westslope cutthroat trout sampled in the first pass of electrofishing was 18.5 fish/100m² in Davis Canyon at electrofishing site SCCFCDC-01 (Table 9). Fork lengths of fish sampled range from 40 mm up to 230 mm (Figure 13, Table 10).

Mountain Whitefish

A total of nine mountain whitefish were sampled from three electrofishing sample sites on lower Carmen Creek (Figure 6, Table 11). There were not enough fish sampled from any of the three sites to generate an estimate of the population with depletion methodologies. None exceeded 80 mm in fork length, indicating that all were probably juvenile fish.

Sculpin species

Sculpin were sampled from 11 of the 20 electrofishing sites in the Carmen Creek watershed (Figure 7, Table 12). Shorthead sculpin were identified as the species from a sample of about fifteen specimens taken from Carmen Creek and Freeman Creek and later identified in the lab.

Dace species

A total of 17 longnose dace *Rhinichthys cataractae* and 25 speckled dace *R. osculus* were sampled from the lowermost site of Carmen Creek at SCC-01. None were sampled from any of the upstream sites.

Sucker species

A single juvenile sucker *Catostomus sp.* specimen, 50 mm in length, not identified to species, was sampled from the lowermost electrofishing site on Carmen Creek. No other suckers of any size were sampled from any of the other sites on Carmen Creek.

Tailed Frogs and Tadpoles

Adult tailed frogs and tadpoles *Ascaphus truei* were sampled from a total of 10 electrofishing sites throughout the Carmen Creek watershed, all were upstream of electrofishing site SCC-06 (Figure 8).

Habitat Surveys and Diversion inventories

The riparian areas of lower and mid-Carmen Creek are dominated by willows and cottonwoods. Most of it remains relatively intact with a few areas showing signs of heavy grazing, with little new growth and some streambank erosion. Observations of instream habitat indicate the presence of most habitat types required for survival of salmonid species in most of the sites surveyed (Table 13). The uppermost sites on the Freeman Creek tributaries have a gradient of 13%, but most were found to support westslope cutthroat trout except for electrofishing site SCCFC-04, which is upstream of a waterfall that appears to be a barrier to the upstream migration of fish (Photo 4).

The lower half of the watershed, from the Freeman Creek confluence downstream, can be characterized as a B2 or B3 stream channel type (Rosgen, 1996). This classification indicates that the stream is predominately contained within a single thread channel, is moderately entrenched, has a width/depth ratio of 12 or greater, the substrate is composed mostly of boulders or cobble, and it has a gradient that ranges from 2% to 4%. Upstream of Freeman Creek most of the main stem watershed takes on the characteristic of a B2a channel, which has a higher gradient than the B2 or B3 channel. Riparian conditions on Carmen Creek were rated to be in fair to excellent condition, with most sites in excellent condition.

Water temperatures, as measured with a hand-held thermometer at the time fish were sampled, ranged from 9°C up to 17°C. The highest reading was at electrofishing site SCC-03, which was at about 1200 hours on July 8, 2006, when instream flows were probably less than 10.0 cfs at the sample site.

Measurements of flow were made at ten locations throughout the Carmen Creek watershed (Figure 9, Table 14). The main stem of Carmen Creek was found to provide most of the base flow with the highest volume measured to be 63.4 cfs on June 23, 2006, which was upstream of the uppermost diversion.

A search of the Idaho Department of Water Resources water rights database indicates that there are at least 147 records for water rights on Carmen Creek, Freeman Creek and Smout Creek combined. All irrigators and water rights are unofficial, and are only being used as preliminary guidelines to understanding water use in the watershed. Any official documentation of legal water rights or claims should be conducted through the Idaho Department of Water Resources. Most are for irrigation uses for less than 1.00 cfs, but the largest is for 10.08 cfs. There are 39 known active gravity fed irrigation diversions throughout the Carmen Creek watershed, which includes seventeen on the main stem of Carmen Creek, five on Freeman Creek, seven on Davis Canyon Creek of Freeman Creek, six on Smout Creek of Freeman Creek, and four on Golway Gulch Creek of Freeman Creek (Figure 10). Due to withdrawals of water for irrigation uses, Carmen Creek is completely dewatered at various times below diversions SCC-01, SCC-01A, SCC-02, SCC-02A, SCC-03, SCC-06, and SCC-11 (Diversions are numbered sequentially upstream, with no relation to electrofishing sites numbered the same way). When dewatered, Carmen Creek regains some flow from the S-09 ditch fish screen bypass discharge of 1.16 cfs, and from natural recharge as it approaches the Salmon River flood plain.

Freeman Creek appears to maintain a year-round flow with its connection to Carmen Creek. None of the PODs on Freeman Creek completely dewatered the stream at any time during stream surveys in 2006, and none of the PODs appeared to be upstream fish passage barriers at the time they were visited or appeared likely to constitute fish passage barriers at low flows.

Davis Canyon Creek is seasonally connected to Freeman Creek. The stream is typically dewatered by mid July at POD SCCFCDC-05, but recharge allows water to be diverted at SCCFCDC-04 and SCCFCDC-03, which dewater the stream below those diversions. During August no water reaches either SCCFCDC-03 or SCCFCDC-04.

Smout Creek provides a seasonal connection to Freeman Creek. There are 6 known active gravity irrigation diversions on Smout Creek, none of which appeared to be a barrier to the upstream passage of fish. Smout Creek is occasionally dewatered below POD SCCFCSC-01. It is also dewatered at SCCFCSC-04 as early as July 15. The East Fork of Smout Creek, which is supplemented during irrigation season with flows diverted from Golway Gulch, enters Smout Creek just above SCCFCSC-02.

Golway Gulch Creek is the uppermost tributary to Freeman Creek that is known to have irrigation diversions. Point of diversion SCCFCGG-04 is located high up in the watershed and is used during higher streamflows to supplement the East Fork of Smout Creek. It appears that this stream does not dewater, primarily due to the irrigator's choice of diversion practices. No fish passage barriers were observed in Golway Gulch Creek.

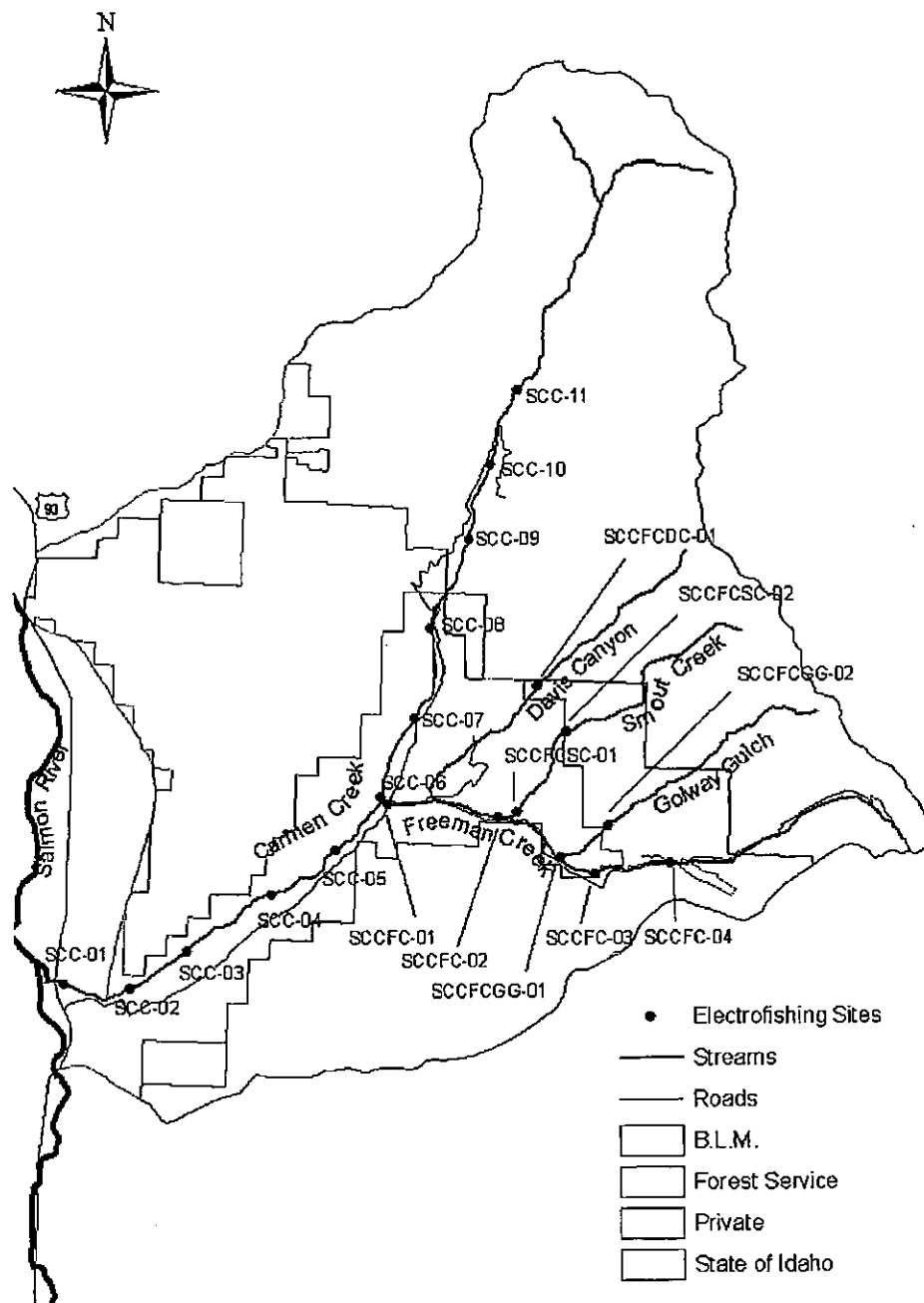


Figure 1. Locations of sites sampled with electrofishing by the Idaho Department of Fish and Game in 2006, Carmen Creek watershed, Lemhi County, Idaho.

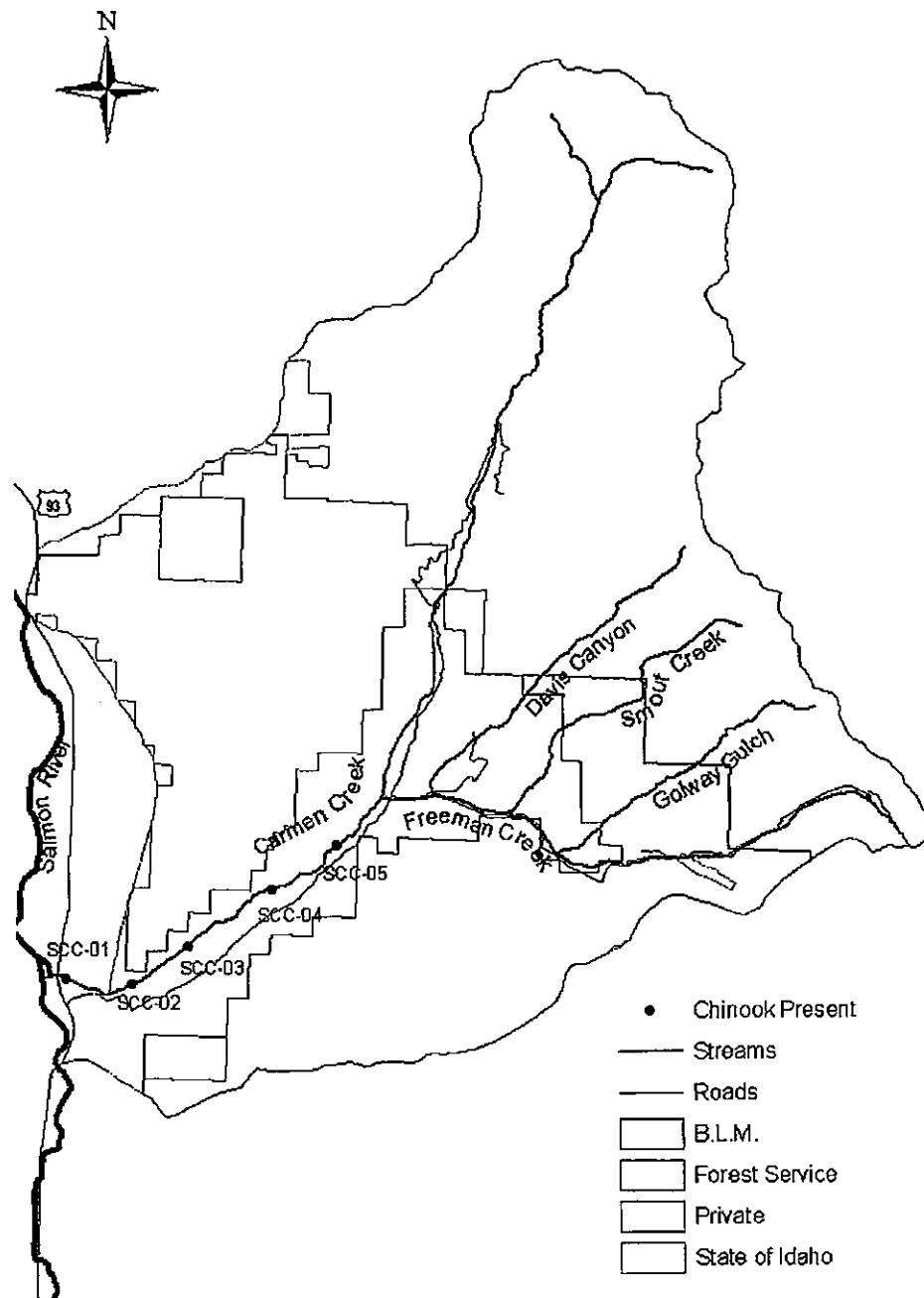


Figure 2. Locations of electrofishing sites where Chinook salmon parr were sampled during 2006 electrofishing surveys, Carmen Creek watershed, Lemhi County, Idaho.

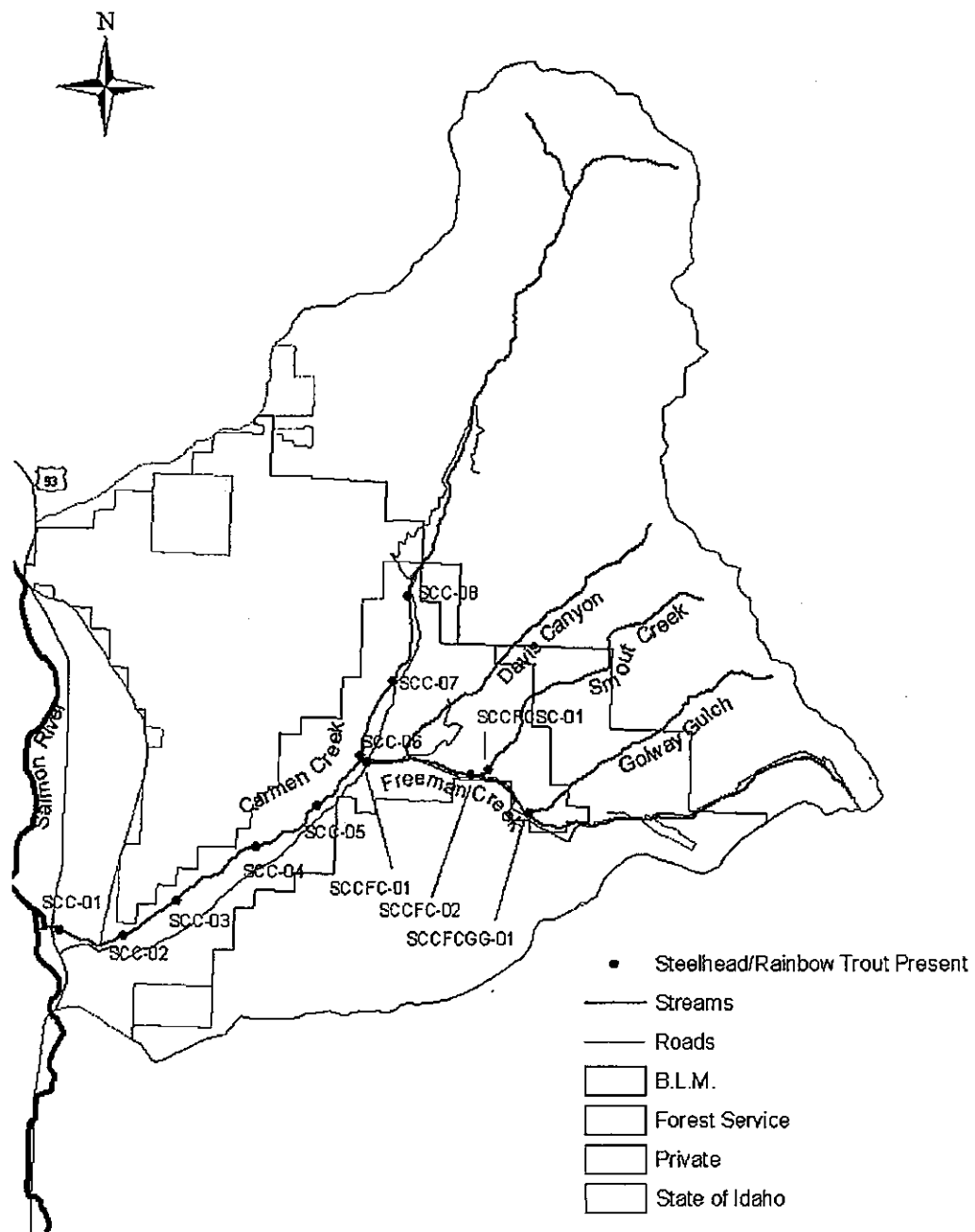


Figure 3. Locations of electrofishing sites where juvenile steelhead/rainbow trout were sampled during 2006 electrofishing surveys, Carmen Creek watershed, Lemhi County, Idaho.

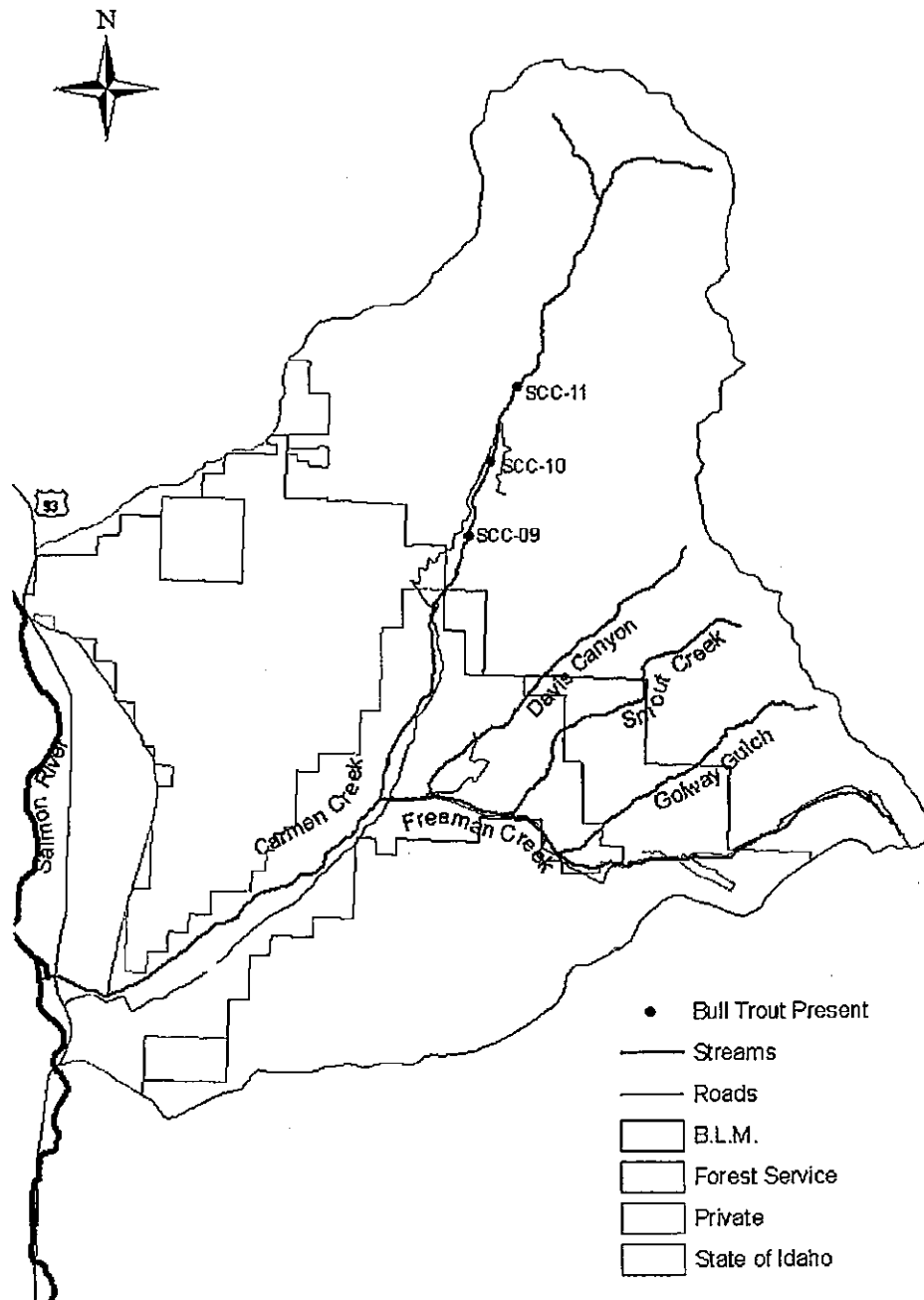


Figure 4. Locations of electrofishing sites where bull trout were sampled during 2006 electrofishing surveys, Carmen Creek watershed, Lemhi County, Idaho.

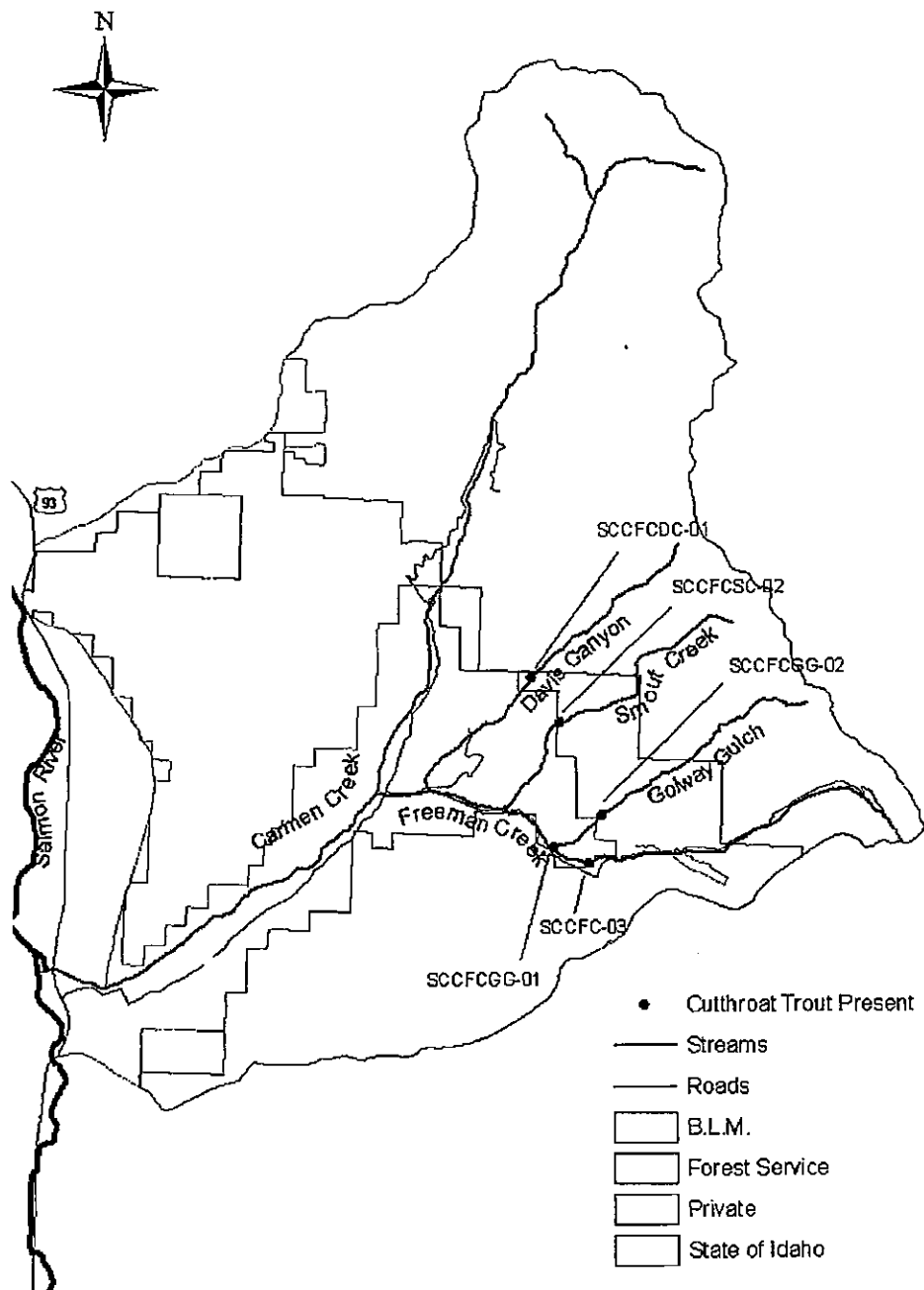


Figure 5. Locations of electrofishing sites where westslope cutthroat trout were sampled during 2006 electrofishing surveys, Carmen Creek watershed, Lemhi County, Idaho.

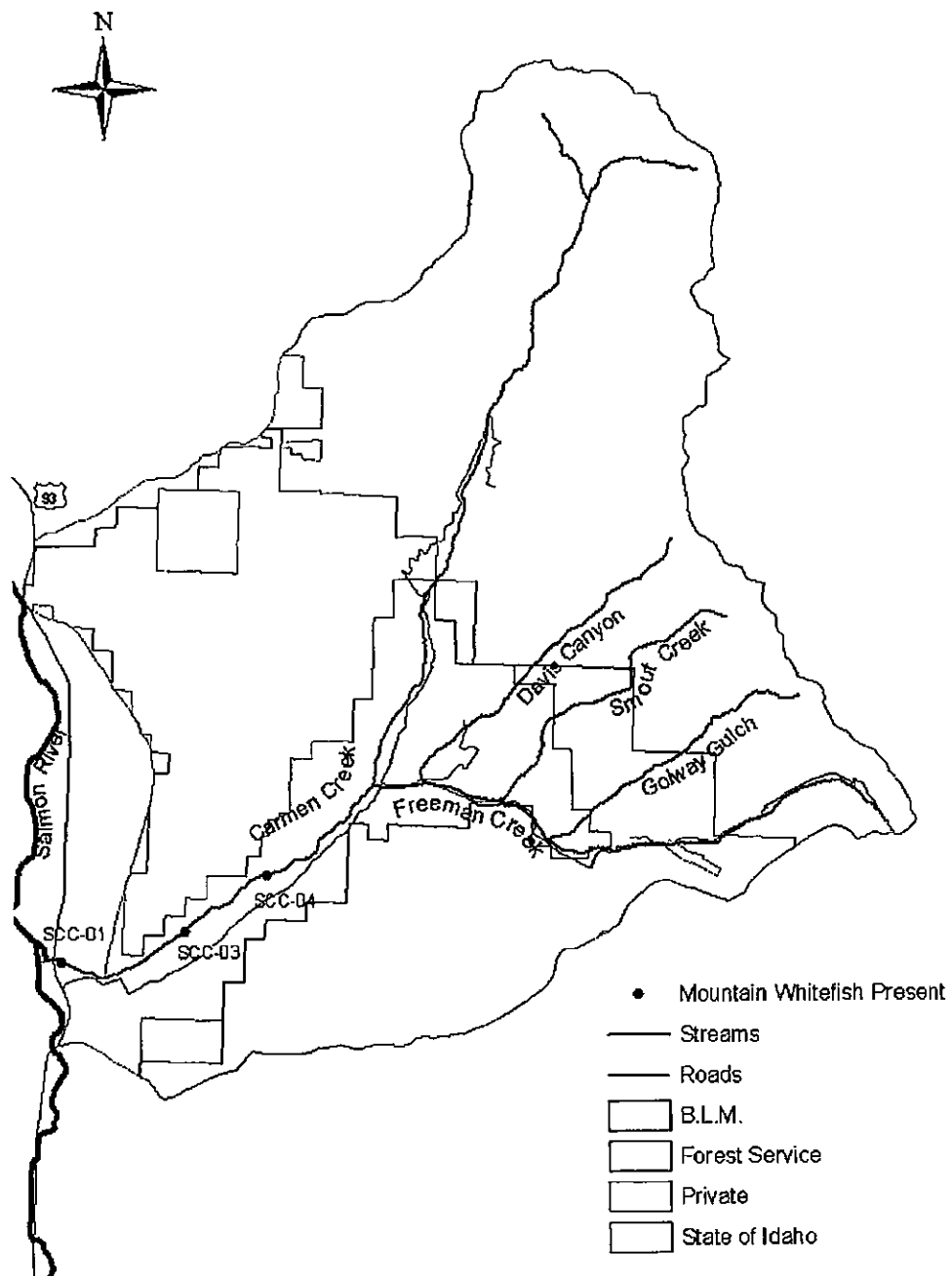


Figure 6. Locations of electrofishing sites where mountain whitefish were sampled during 2006 electrofishing surveys, Carmen Creek watershed, Lemhi County, Idaho.

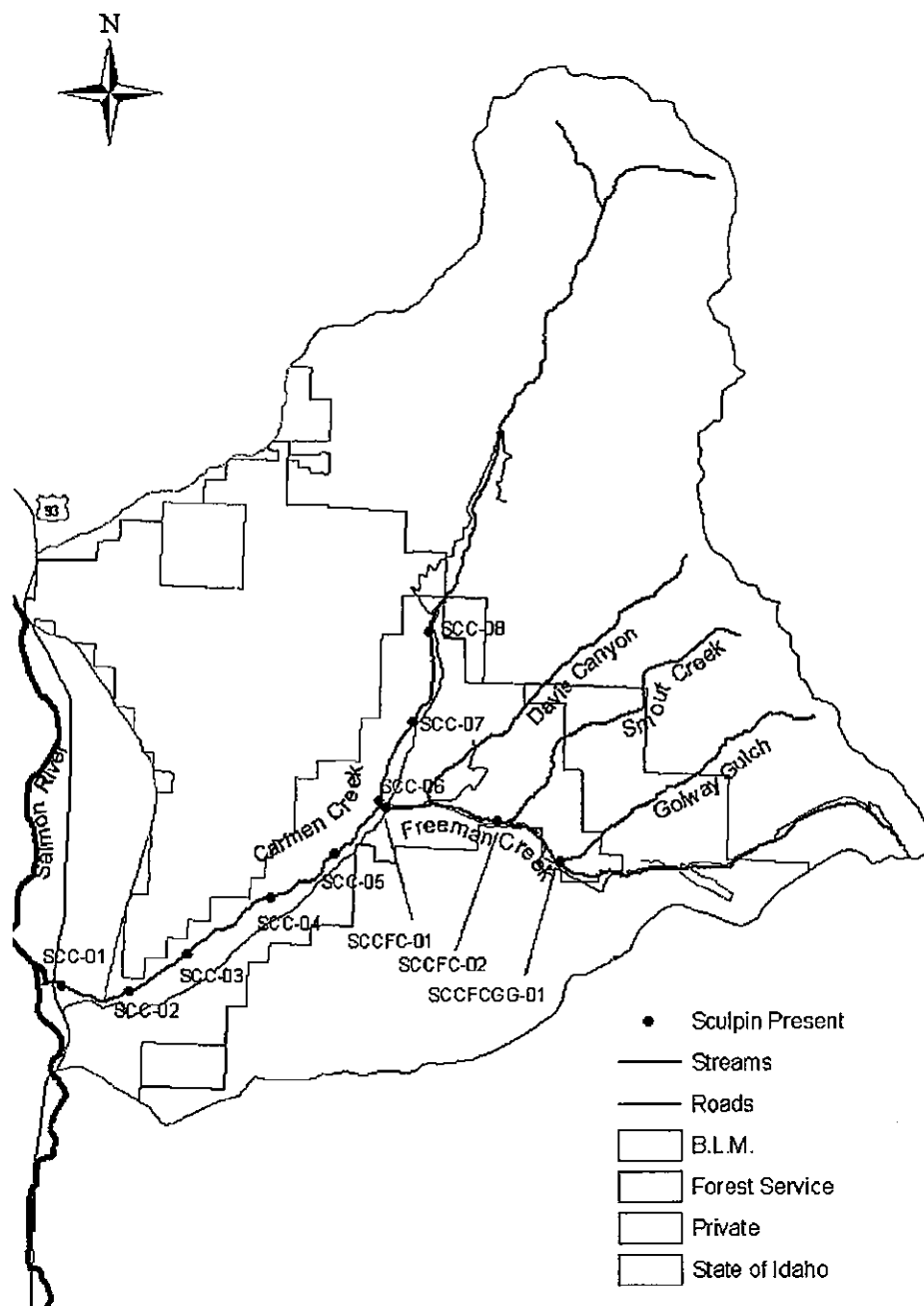


Figure 7. Locations of electrofishing sites where sculpin were sampled during 2006 electrofishing surveys, Carmen Creek watershed, Lemhi County, Idaho.

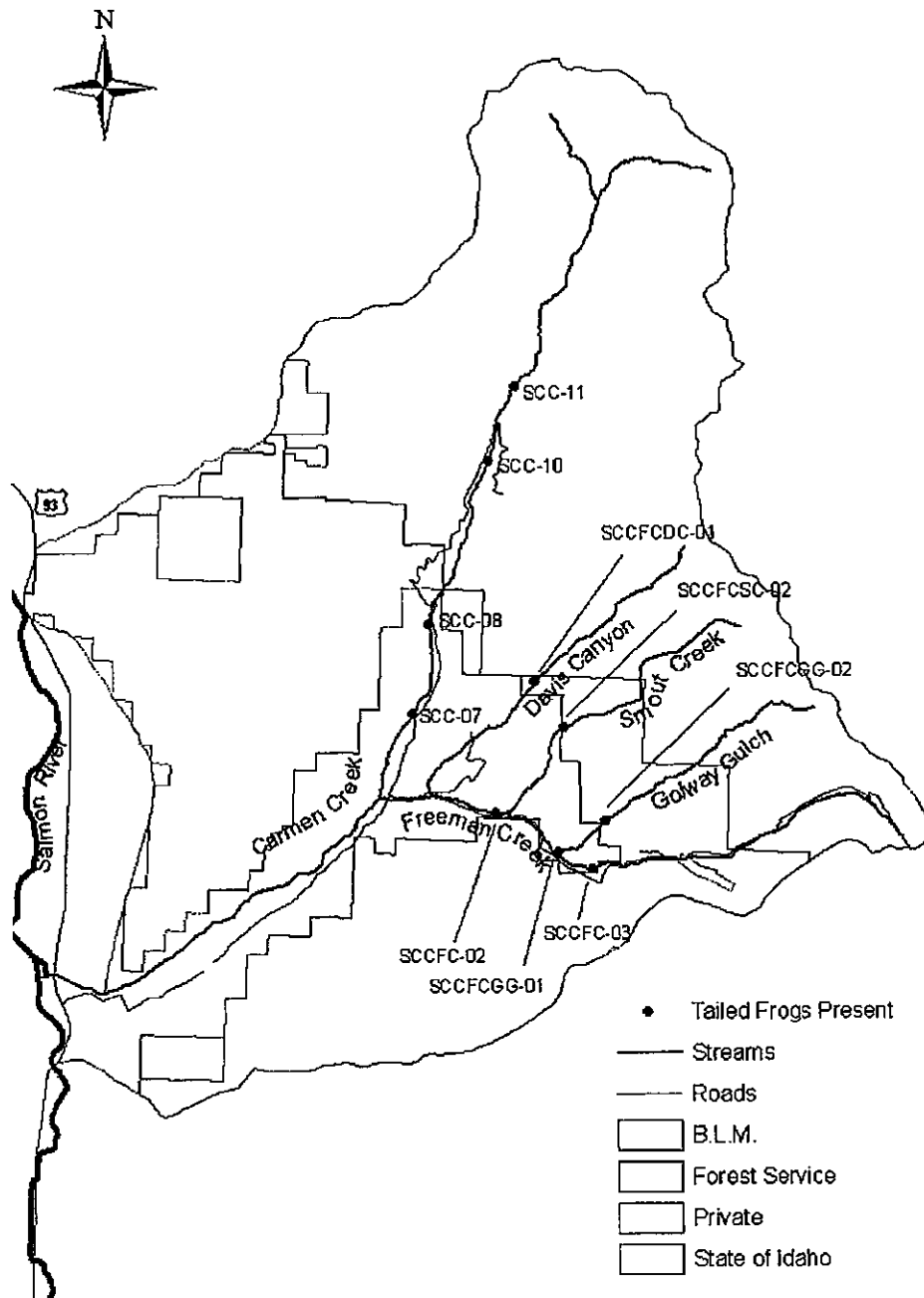


Figure 8. Locations of electrofishing sites where either tailed frog adults or tailed frog tadpoles were sampled during 2006 electrofishing surveys, Carmen Creek watershed, Lemhi County, Idaho.

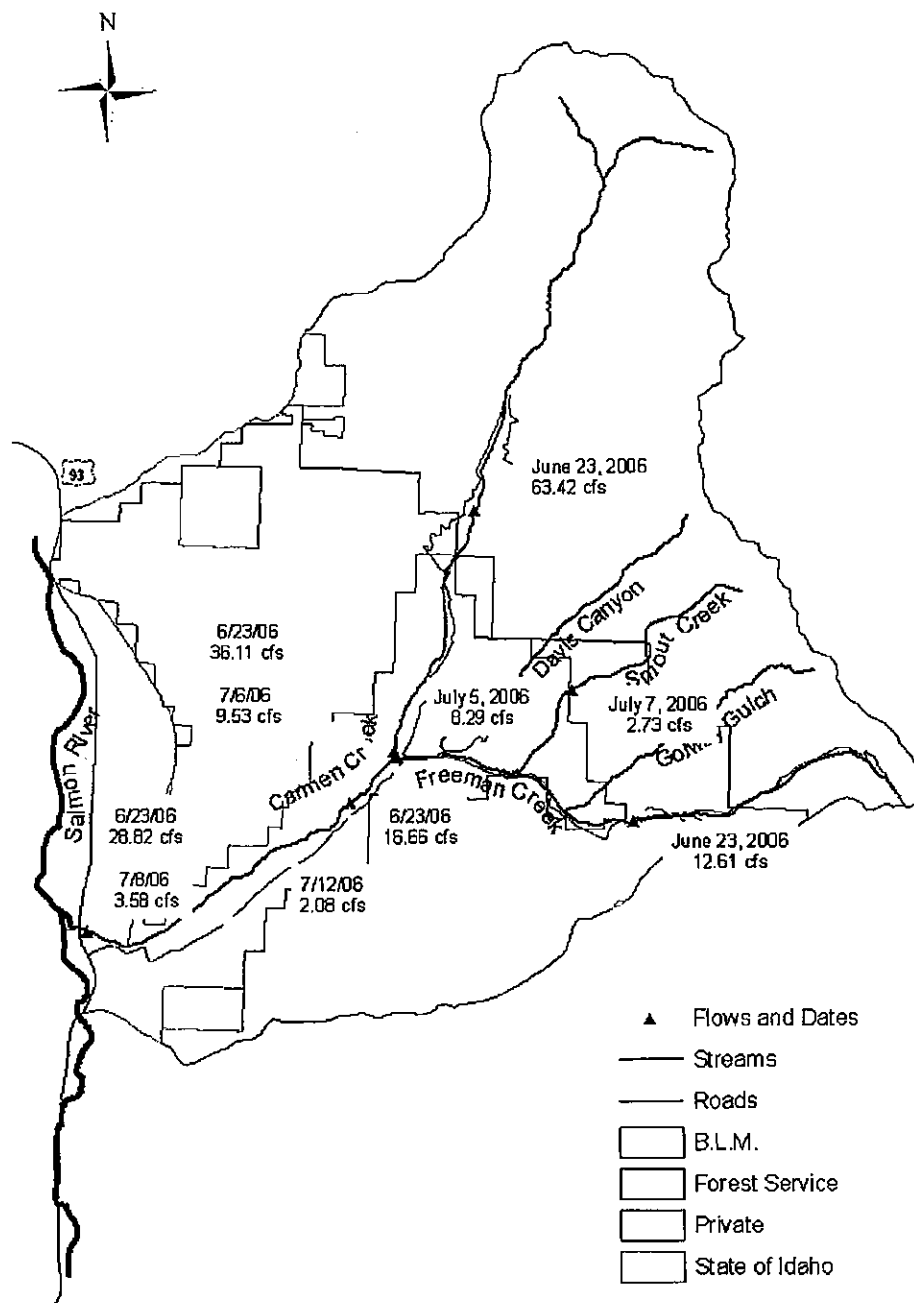
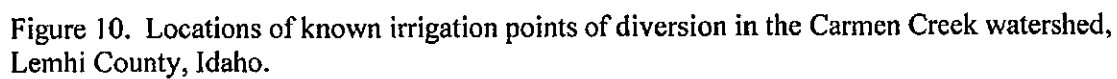


Figure 9. Locations and dates of flow measurements taken in the Carmen Creek watershed in 2006, Lemhi County, Idaho.



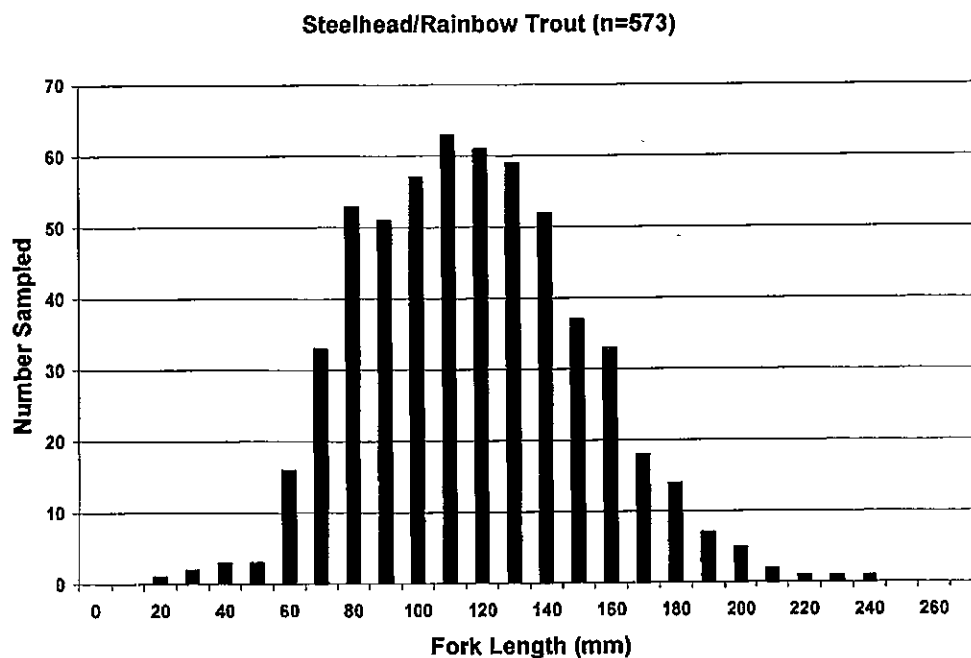


Figure 11. Length frequency of steelhead/rainbow trout sampled in Carmen Creek watershed in 2006.

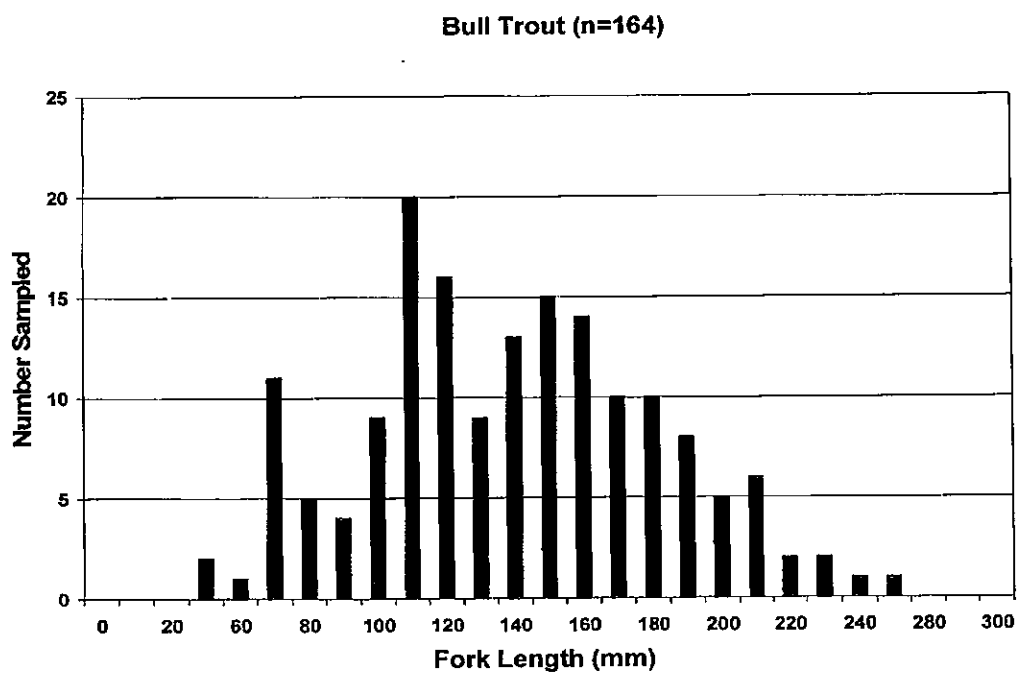


Figure 12. Length frequency of bull trout sampled in Carmen Creek watershed in 2006.

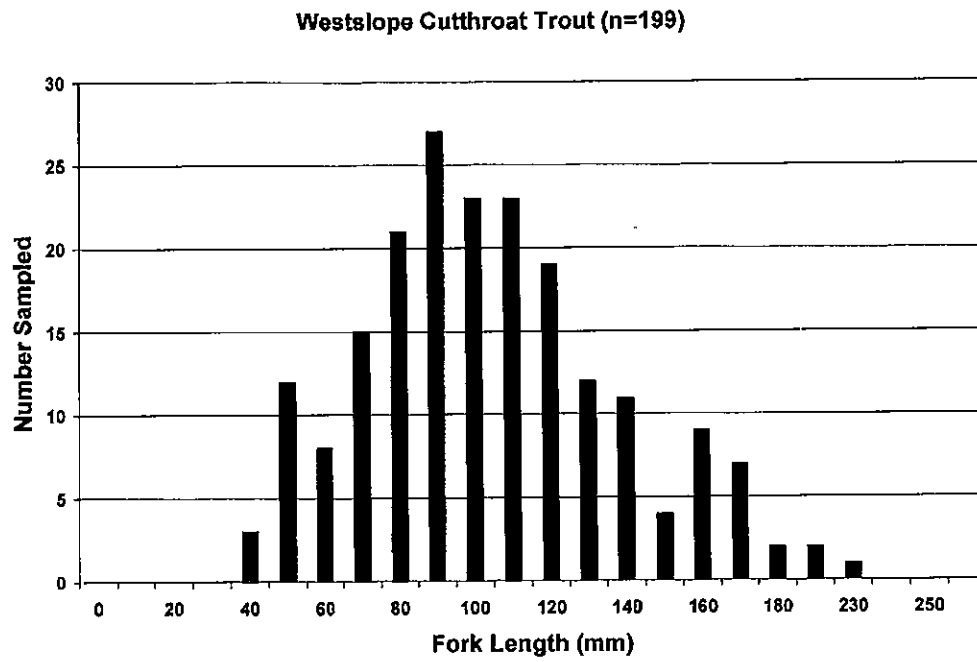


Figure 13. Length frequency of westslope cutthroat trout sampled in Carmen Creek watershed in 2006.

DISCUSSION

Fishery Surveys

Chinook Salmon

The presence of juvenile Chinook salmon up to the SCC-05 electrofishing site indicates that the species utilizes lower Carmen Creek for early rearing habitat. Juvenile Chinook salmon probably move into Carmen Creek from the Salmon River during periods of high spring run off, as irrigation diversions dewater lower Carmen Creek by the middle of summer. Several of the Carmen Creek watershed diversions were historically screened to reduce fish entrainment over twenty years ago, but no screens meeting NOAA Fisheries criteria have been installed or maintained anywhere within the watershed since then. As a result, it is likely that juvenile Chinook salmon are being entrained into the irrigation system in lower Carmen Creek. Several landowners and water users have expressed an interest in cooperating with the Anadromous Fish Screening Program to install fish screens on their diversions and potentially implement water conservation measures. Such cooperative measures have the potential to reduce entrainment losses and possibly restore a perennial flow of water throughout the watershed.

Steelhead/Rainbow Trout

Along with all other waters of the upper Salmon River watershed, Carmen Creek was designated as critical habitat for steelhead on February 16, 2000 (64 CFR 5740). A visual survey conducted on April 7, 2003 confirmed the presence of multiple adult steelhead in lower Carmen Creek watershed, approximately 0.5 km upstream of the S-09 fish screen bypass (IDFG, unpublished data). Evidence suggesting that steelhead spawned in Carmen Creek in 2006 were the finding of remains of an adult fish at electrofishing site SCC-05. Adult steelhead move upstream into the watershed early in the spring which would be prior to the dewatering of Carmen Creek. Adult fish are probably still present when some of the irrigation systems are turned on, possibly entraining prespawning adults. The presence of large numbers of small *Oncorhynchus mykiss* in the lower to middle reaches of Carmen Creek and tributaries suggests that these fish may be juvenile steelhead. The installation of fish screens meeting NOAA Fisheries juvenile salmonid screening criteria would provide a significant benefit to the steelhead population in Carmen Creek.

Bull Trout

Bull trout in Idaho exhibit either a resident non-migratory, fluvial migratory, or an adfluvial migratory life history. Bull trout in the Carmen Creek watershed are of either the resident non-migratory or fluvial migratory form, which would migrate into the mainstem of the Salmon River for part of their life history. Fluvial bull trout spend the first few years of their life in their natal stream before migrating downstream into the mainstem of a larger river system, where they have the opportunity to forage and grow to a larger size than their resident counterparts. During periods of high flow associated with snowmelt, pre-spawning adult bull trout migrate back up into their natal streams, where they remain throughout the rest of the summer until they spawn in the late summer or early fall. The difference in size between the two adult life history forms can be significant, with resident fish rarely exceeding 350 mm long

and fluvial fish frequently exceeding 500 mm. Bull trout have more specific habitat requirements than most other salmonid species, making them an indicator species for intact and unimpacted habitat. The presence of bull trout in upper Carmen Creek indicates that aquatic and riparian habitat there is relatively undisturbed. The largest bull trout sampled was 270 mm (fork length), out of a total of 164 fish, suggesting that the population may be composed primarily of resident fish. The absence of larger fish in the sample does not exclude the possibility that there is a fluvial component in the watershed population, particularly since the mainstem of Carmen Creek maintains connectivity to the Salmon River during the spring. The installation of fish screens meeting NOAA Fisheries criteria for juvenile salmonids would likely benefit bull trout in Carmen Creek.

Westslope Cutthroat Trout

Westslope cutthroat trout were found in five out of the twenty electrofishing sites, and all of those were in the headwaters of Freeman Creek. There was little sympatry between westslope cutthroat trout and other fish species found in the Carmen Creek watershed, except at the lowermost site on Golway Gulch, where there were half as many steelhead/rainbow trout as there were westslope cutthroat trout. Upper Salmon River populations of adult fluvial westslope cutthroat trout have been observed to make most of their relocation movements during the month of May, which is associated with spawning migrations into and out of tributary streams (Schoby, 2006). Juvenile offspring may remain in the natal tributary until moving downstream as subadults, at which time they are at risk of entrainment into one of the many unscreened irrigation diversions. A fish screening program implemented to protect the Federally listed fish species in Carmen Creek would also work to protect any downstream migrating westslope cutthroat trout.

Habitat Surveys and Diversion Inventories

The source of Carmen Creek water is snowmelt from the higher elevations of the west flank of the Beaverhead Mountains. This creates a potential thermal refuge for fish seeking cooler waters from the main stem of the Salmon River. The documented presence of anadromous fish in Carmen Creek indicates that fish probably move upstream from the Salmon River before instream flows are shut off in the lower reaches. Although Carmen Creek and some of its tributaries become intermittently dewatered from irrigation withdrawals, the stream channel and riparian habitat is in relatively good condition throughout most of its length. There appears to be little channelization or streambank reinforcement, other than the areas around some of the diversions and bridges. Some of the riparian areas do indicate that grazing is having an impact on streamside vegetation and loss of streambank stability, but overall impacts are minimal.

Potential conservation measures that would benefit fish in Carmen Creek include the reestablishment of perennial flows throughout its length. This would require implementing water savings measures such as the construction of pipelines to replace open ditches and replacing flood irrigation with sprinklers. Although the lower reaches of Carmen Creek are seasonally dewatered, there is still an anadromous fish presence. It is highly probable that many of these fish are being entrained through the various unscreened irrigation systems. Installing fish screen meeting NOAA Fisheries criteria in the ditches up to at least the Freeman Creek confluence would potentially reduce significant entrainment of juvenile Chinook salmon, steelhead, fluvial rainbow trout, westslope cutthroat trout and bull trout.

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Table 1. Characteristics of electrofishing sites in Carmen Creek watershed, 2006.

Site ID	Survey Date	Survey Time	Site Start UTM E (Z12)	Site Start UTM N (Z12)	Elevation (m)	Site Length (m)	Site Area (m ²)	Water Temp (°C)
SCC-01	7/8/2006	840	273040	5014169	1030	100	560	15
SCC-02	7/11/2006	753	274344	5014061	1216	100	466	14
SCC-03	7/8/2006	1200	275471	5014778	1237	100	692	17
SCC-04	7/11/2006	1100	277093	5015850	1286	100	556	15
SCC-05	7/12/2006	845	278335	5016721	1320	100	612	14
SCC-06	7/6/2006	830	279222	5017581	1341	60	367	13
SCC-07	7/12/2006	1310	279887	5019248	1402	100	634	12
SCC-08	7/25/2006	900	280204	5020964	1449	100	478	13
SCC-09	7/26/2006	1435	280963	5022672	1579	100	632	12
SCC-10	7/26/2006	900	281406	5024094	1693	100	528	9
SCC-11	7/25/2006	1315	281920	5025550	1795	110	656	12
SCCFC-01	7/6/2006	1230	279258	5017552	1353	100	504	15
SCCFC-02	7/5/2006	1400	281619	5017292	1438	100	374	11
SCCFC-03	7/10/2006	1500	283356	5016239	1585	92	278	10
SCCFC-04	7/11/2006	1445	284814	5016434	1844	100	418	9
SCCFCSC-01	7/5/2006	1130	281826	5017368	1463	100	252	14
SCCFCSC-02	7/7/2006	930	282833	5018962	1744	100	356	9
SCCFCGG-01	7/10/2006	845	282648	5016536	1548	100	224	12
SCCFCGG-02	7/10/2006	1130	283617	5017178	1731	100	272	10
SCCFCDC-01	7/7/2006	1615	282283	5019852	1706	100	270	11

Table 2. Electrofishing survey data for sites sampled in Carmen Creek watershed, 2006.

Site ID	Number of Electrofishing Passes	Total Time Electrofished (Seconds)			Settings	Volts
		Pass #1	Pass #2	Pass #3		
SCC-01	2	987	772		50 Hz, 4ms	500
SCC-02	2	803	769		40 Hz, 1ms	500
SCC-03	1	1246			40 Hz, 2ms	500
SCC-04	3	963	648	610	40 Hz, 2ms	500
SCC-05	3	961	994	944	40 Hz, 4ms	500
SCC-06	3	767	752	666	60 Hz, 4ms	500
SCC-07	3	1441	1141	989	60 Hz, 2ms	500
SCC-08	2	831	699		70 Hz, 8ms	500
SCC-09	1	1118			60 Hz, 8ms	600
SCC-10	3	919	792	781	60 Hz, 8ms	500
SCC-11	3	1245	1121	978	80 Hz, 6ms	600
SCCFC-01	2	1102	1232		60 Hz, 6ms	500
SCCFC-02	3	828	974	753	60 Hz, 6ms	500
SCCFC-03	2	722	641		60 Hz, 2ms	500
SCCFC-04	1	375			60 Hz, 6ms	500
SCCFCSC-01	1	768			60 Hz, 2ms	500
SCCFCSC-02	3	568	507	456	80 Hz, 6ms	500
SCCFCGG-01	2	459	276		40 Hz, 4ms	500
SCCFCGG-02	2	463	395		50 Hz, 4ms	500
SCCFDC-01	1	744			60 Hz, 6ms	500

Table 3. Number (%) of electrofishing sites containing juvenile Chinook salmon, steelhead/rainbow trout (RBT), westslope cutthroat trout (CTT), bull trout (BLT), mountain whitefish (MWF), sculpin (SCU), and Dace in Carmen Creek watershed, 2006.

Stream	Number of Electrofishing Sites	Number (%) of Sites w/ Chinook	Number (%) of Sites w/ RBT	Number (%) of Sites w/ BLT	Number (%) of Sites w/ CTT	Number (%) of Sites w/ MWF	Number (%) of Sites w/ SCU
Carmen Creek	11	5 (45%)	8 (73%)	3 (27%)	0 (0%)	3 (27%)	8 (73%)
Freeman Creek	4	0 (0%)	2 (50%)	0 (0%)	1 (25%)	0 (0%)	2 (50%)
Smout Creek	2	0 (0%)	1 (50%)	0 (0%)	1 (50%)	0 (0%)	0 (0%)
Davis Canyon	1	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)	0 (0%)
Golway Gulch	2	0 (0%)	1 (50%)	0 (0%)	2 (100%)	0 (0%)	1 (50%)
Entire Watershed	20	5 (25%)	12 (60%)	3 (15%)	5 (25%)	3 (15%)	11 (55%)

Table 4. Population estimates/densities of Chinook salmon in Carmen Creek electrofishing sites, 2006.

Site ID	Number Electrofishing Passes	Total Chinook Sampled	Number Chinook Pass 1	Number Chinook Pass 2	Number Chinook Pass 3	Number Chinook 1 st Pass/100m ²	Population Estimate of Chinook $\pm$ 95% CI	Density Estimate of Chinook/ 100m ²	Capture Probability
SCC-01	2	2	2	0		0.4			
SCC-02	2	13	10	3		2.1	13 $\pm$ 2	2.8	0.813
SCC-03	1	1	1			0.1			
SCC-04	3	2	1	0	1	0.2			
SCC-05	3	1	1	0	0	0.2			

Table 5. Population estimates/densities of steelhead/rainbow trout (RBT) in Carmen Creek electrofishing sites, 2006.

Site ID	Number of Electrofishing Passes	Total RBT Sampled	Number of RBT $\geq$ 70 mm Pass 1	Number of RBT $\geq$ 70 mm Pass 2	Number of RBT $\geq$ 70 mm Pass 3	Number of RBT 1 st Pass/100m ²	Population Estimate of RBT $\geq$ 70 mm $\pm$ 95% CI	Density Estimate of RBT $\geq$ 70 mm/100m ²	Capture Probability
SCC-01	2	25	17	8		3.0	29 $\pm$ 11	5.2	0.610
SCC-02	2	16	10	6		2.1	20 $\pm$ 14	4.3	0.533
SCC-03	1	17	17			2.5	31 ^a	4.5	
SCC-04	3	55	29	18	7	5.4	61 $\pm$ 11	11.0	0.505
SCC-05	3	113	64	32	14	10.5	123 $\pm$ 13	20.1	0.534
SCC-06	3	42	27	13	2	7.4	43 $\pm$ 3	11.7	0.677
SCC-07	3	87	46	26	8	8.2	87 $\pm$ 10	13.7	0.559
SCC-08	2	61	41	18		8.8	70 $\pm$ 13	14.6	0.596
SCCFC-01	2	56	29	24		5.8	128 $\pm$ 202	50.8	0.233
SCCFC-02	3	87	47	17	13	14.2	85 $\pm$ 11	23.9	0.535
SCFCGG-01	2	6	5	1		2.2	6 $\pm$ 1	2.7	0.857
SCCFCSC-01	1	8	8			3.2	15 ^a	6.0	

^a Population estimate without 95% CI based on regression of $y=1.83x$, where y = population estimate, x = number of fish caught in first pass of electrofishing.

Table 6. Length frequencies of steelhead/rainbow trout sampled in the Carmen Creek watershed, 2006.

Fork Length (mm)	SCC-01	SCC-02	SCC-03	SCC-04	SCC-05	SCC-06	SCC-07	SCC-08	SCCFC-01	SCCFC-02	SCGFCGG-01	SCCFCSC-01	Total	Avg. Wt. (g)
20									1				1	
30									2				2	
40					2			1					3	
50				1									3	
60							7	1		8			16	
70						1	14	3	4	9	2		33	
80						5	18	6	9	13	2		53	
90						7	9	1	11	10			51	
100						4	4	10	3	13			57	14
110	3	3	4	10	10	4	8	6	7	5		3	63	17
120	1	1	2	13	12	5	7	8	3	8		1	61	23
130	9	3	5	9	10	6	6	4	1	5		1	59	29
140	5	2	3	2	15	2	4	7	5	5	1	1	52	37
150	4	4		5	11	2	3	1	2	5			37	43
160	3		1	3	13	3	2	2	2	3	1		33	58
170				1	7		3	3	4				18	65
180		2	1	2	2	2	1	3		1			14	74
190				1	1		1	3	1				7	82
200				2	2	1							5	102
210		1						1					2	123
220					1								1	132
230									1				1	150
240								1					1	148
Total	25	16	17	55	113	42	87	61	56	87	6	8	573	

Table 7. Population estimates/densities of bull trout (BLT) in Carmen Creek electrofishing sites, 2006.

Site ID	Number Electrofishing Passes	Total BLT Sampled	Number BLT ≥ 70 mm Pass 1	Number BLT ≥ 70 mm Pass 2	Number BLT ≥ 70 mm Pass 3	Number BLT 1 st Pass/100m ²	Population Estimate of BLT ≥ 70 mm $\pm$ 95% CI	Density Estimate of BLT ≥ 70 mm/100m ²	Capture Probability
SCC-09	1	38	37			6.0			
SCC-10	3	62	32	23	5	6.1	66 $\pm$ 9	12.5	0.541
SCC-11	3	64	45	12	7	6.9	66 $\pm$ 4	10.1	0.667

Table 8. Length frequencies of bull trout sampled in the Carmen Creek watershed, 2006.

Fork Length (mm)	SCC-09	SCC-10	SCC-11	Total	Average Weight (g)
30		2		2	
/					
60	1			1	
70	3	1	7	11	
80		4	1	5	
90	1	1	2	4	
100	1	7	1	9	11
110	2	5	13	20	14
120	1	11	4	16	18
130	4	2	3	9	24
140	4	4	5	13	29
150	5	7	3	15	39
160	3	5	6	14	47
170	1	3	6	10	57
180	2	2	6	10	66
190	3	2	3	8	88
200	1	3	1	5	101
210	3	1	2	6	115
220	1	1		2	115
230	2			2	152
240			1	1	143
/					
270		1		1	171
Total	38	62	64	164	

Table 9. Population estimates/densities of westslope cutthroat trout (CTT) in Carmen Creek electrofishing sites, 2006.

Site ID	Number of Electrofishing Passes	Total CTT Sampled	Number of CTT $\geq$ 70 mm Pass 1	Number of CTT $\geq$ 70 mm Pass 2	Number of CTT $\geq$ 70 mm Pass 3	Number of CTT 1 st Pass/100m ²	Population Estimate of CTT $\geq$ 70 mm $\pm$ 95% CI	Density Estimate of CTT $\geq$ 70 mm/100m ²	Capture Probability
SCCFC-03	2	40	22	9		10.4	35 $\pm$ 10	12.6	0.646
SCCFCGG-01	2	13	10	2		4.9	12 $\pm$ 1	5.4	0.857
SCCFCGG-02	2	49	30	11		12.1	45 $\pm$ 9	16.5	0.683
SCCFCSC-02	3	47	28	12	6	7.9	49 $\pm$ 6	13.8	0.582
SCCFCDC-01	1	50	46			18.5	86 ^a	31.9	

^a Population estimate without 95% CI based on regression of $y=1.83x$, where y = population estimate, x = number of fish caught in first pass of electrofishing.

Table 10. Length frequencies of westslope cutthroat trout sampled in the Carmen Creek watershed, 2006.

Fork Length (mm)	SCCFC-03	SCCFCGG-01	SCCFCGG-02	SCCFCSC-02	SCCFCDC-01	Total	Average Weight (g)
40	1		1		1	3	
50	7		4		1	12	
60	1	1	3	1	2	8	
70	2	2	1	4	6	15	
80	4		4	5	8	21	
90	5	1	10	4	7	27	
100	3		8	4	8	23	14
110	2	4	6	7	4	23	18
120	6	2	2	6	3	19	22
130	1		3	3	5	12	28
140	1	1	2	4	3	11	33
150	1	1	1		1	4	43
160	4	1	2	2		9	53
170	1		1	4	1	7	56
180			1	1		2	83
190	1			1		2	71
/							
230				1		1	119
Total	40	13	49	47	50	199	

Table 11. Number of mountain whitefish (MWF) sampled in the Carmen Creek watershed in 2006.

Site ID	Number of Electrofishing Passes	Number of MWF in Pass 1	Number of MWF in Pass 2	Number of MWF in Pass 3	Avg. Length (mm)
SCC-01	2	4	2		70
SCC-03	1	2			80
SCC-04	3	0	1	0	70

Table 12. Number of sculpin sampled in the Carmen Creek watershed in 2006.

Site ID	Number of Electrofishing Passes	Number of sculpin in Pass 1	Number of sculpin in Pass 2	Number of sculpin in Pass 3	Avg. Length (mm)
SCC-01	2	4	1		72
SCC-02	2	49	24		72
SCC-03	1	94			78
SCC-04	3	89	39	25	75
SCC-05	3	68	29	0	69
SCC-06	3	57	38	32	72
SCC-07	3	113	50	49	63
SCC-08	2	85	32		80
SCCFC-01	2	113	112		66
SCCFC-02	3	82	61	46	61
SCCFCGG-01	2	2	4		63

Table 13. Habitat characteristics of sites electrofished in the Carmen Creek watershed, 2006.

Site ID	Average Width (m)	% Pool	% Run	% Pocket Water	% Riffle	Bank Condition	% Gradient
SCC-01	5.6	10	45	10	35	Fair	1.7
SCC-02	4.7	10	50	15	25	Fair	1.8
SCC-03	6.9	10	40	10	40	Fair	2.2
SCC-04	5.6	20	40	20	20	Good	2.8
SCC-05	6.1	5	10	5	80	Excellent	3.2
SCC-06	6.1	5	40	20	35	Fair	1.8
SCC-07	6.3	5	15	10	70	Excellent	2.6
SCC-08	4.8	10	35	20	35	Excellent	4.5
SCC-09	6.3	25	30	20	25	Excellent	4.3
SCC-10	5.3	10	5	5	80	Excellent	5.2
SCC-11	6.0	25	20	15	40	Excellent	6.0
SCCFC-01	5.0	10	35	25	30	Fair	3.2
SCCFC-02	3.7	15	30	30	25	Excellent	4.0
SCCFC-03	3.0	20	15	20	45	Excellent	8.3
SCCFC-04	4.2	30	10	20	40	Excellent	13.0
SCCFCSC-01	2.5	5	5	10	80	Fair	8.7
SCCFCSC-02	3.6	15	10	15	60	Excellent	13.6
SCCFCGG-01	2.2	10	10	15	65	Good	9.4
SCCFCGG-02	2.7	15	15	15	55	Good	13.2
SCCFCDC-01	2.7	10	15	30	45	Excellent	13.8

Table 14. Stream flow measurements taken at various locations and dates throughout the Carmen Creek watershed in 2006.

Location of Stream Flow Measurement	UTM E (Z12)	UTM N (Z12)	Date of Measurement	Discharge (cfs)
Electrofishing Site SCC-01	273040	5014169	7/8/2006	3.6
Electrofishing Site SCC-05	278335	5016721	7/12/2006	2.1
Electrofishing Site SCC-06, Upstream of Freeman Creek Confluence	279222	5017581	7/6/2006	9.5
Upstream of POD SCC-15	281024	5022450	6/23/2006	63.4
Carmen Creek Immediately Upstream of Freeman Creek Confluence	279211	5017560	6/23/2006	36.1
Carmen Creek Immediately Upstream of POD SCC-09	273049	5014178	6/23/2006	28.8
Freeman Creek Immediately Upstream of Confluence with Carmen Creek	279223	5017533	6/23/2006	16.7
Electrofishing Site SCCFC-02	281619	5017292	7/5/2006	8.3
Upper Watershed	284066	5016339	6/23/2006	12.6
Electrofishing Site SCCFCSC-02	282833	5018962	7/7/2006	2.7



Photo 1. Lower Carmen Creek stream channel immediately upstream of S-09 siphon, April 2004.



Photo 2. Lower Carmen Creek stream channel and S-09 fish screen bypass return pipe (file photo, 2001).

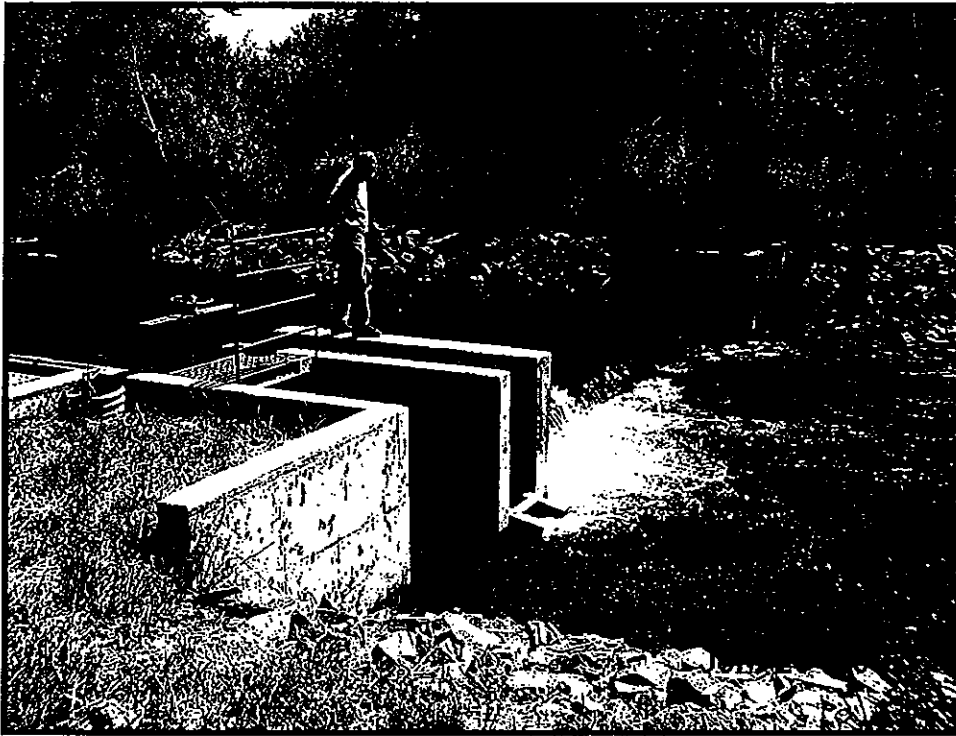


Photo 3. Obermeyer weir and fish ladder at the S-05/06/07 diversion.



Photo 4. Waterfall creating possible barrier to upstream migration of fish on Freeman Creek between electrofishing sites SCCFC-03 and SCCFC-04.



Photo 5. Juvenile Chinook salmon sampled from Carmen Creek electrofishing site SCC-05.

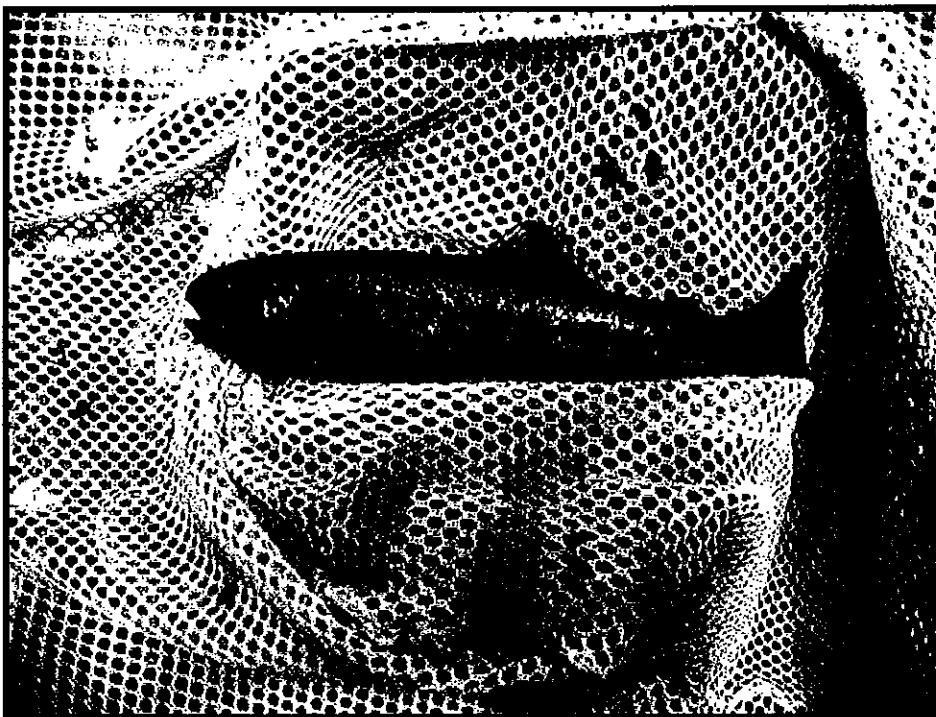


Photo 6. Juvenile steelhead/rainbow trout sampled from Carmen Creek electrofishing site SCC-07.



Photo 7. Juvenile steelhead/rainbow trout sampled from Carmen Creek electrofishing site SCCFC-01.



Photo 8. Bull trout sampled from Carmen Creek electrofishing site SCC-10.

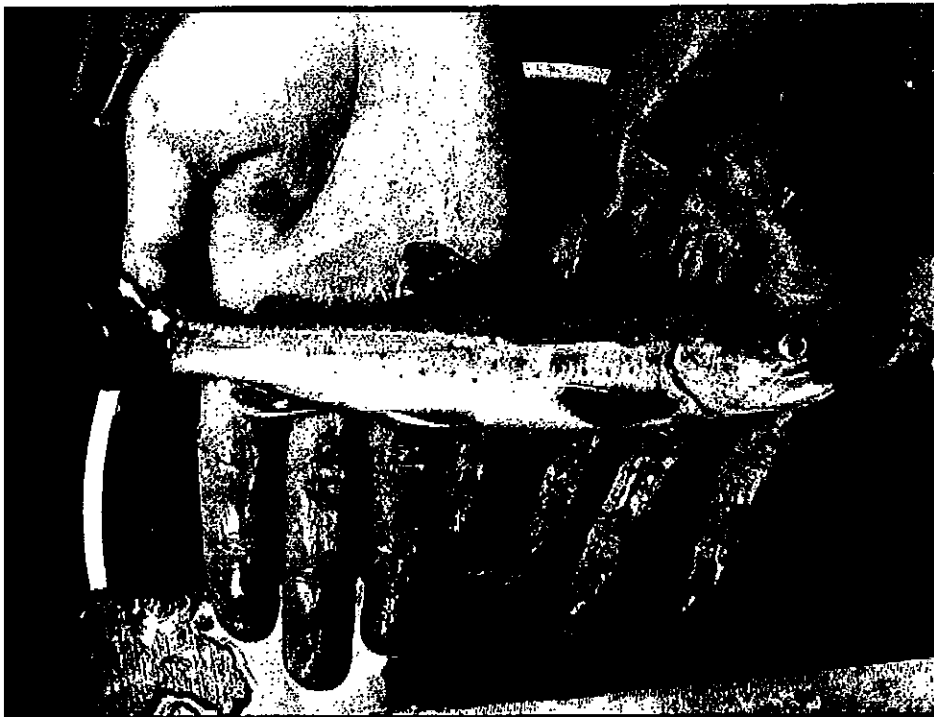


Photo 9. Bull trout sampled from Carmen Creek electrofishing site SCC-11.



Photo 10. Westslope cutthroat trout sampled from Carmen Creek electrofishing site SCCFCSC-02.



Photo 11. Speckled dace and longnose dace sampled from Carmen Creek electrofishing site SCC-01.



Photo 12. Upper boundary of Carmen Creek electrofishing site SCC-01.

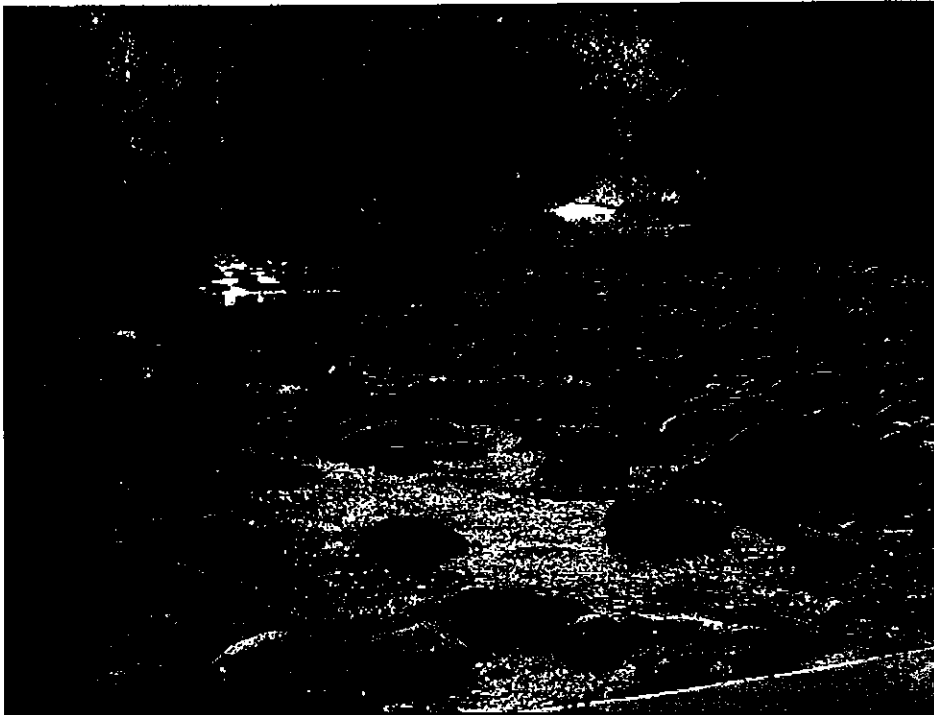


Photo 13. Lower boundary of Carmen Creek electrofishing site SCC-02.



Photo 14. Upper boundary of Carmen Creek electrofishing site SCC-02.



Photo 15. Lower boundary of Carmen Creek electrofishing site SCC-03.



Photo 16. Upper boundary of Carmen Creek electrofishing site SCC-03.



Photo 17. Upper boundary of Carmen Creek electrofishing site SCC-04.



Photo 18. Upper boundary of Carmen Creek electrofishing site SCC-05.



Photo 19. Upper boundary of Carmen Creek electrofishing site SCC-06.



Photo 20. Lower boundary of Carmen Creek electrofishing site SCC-07.

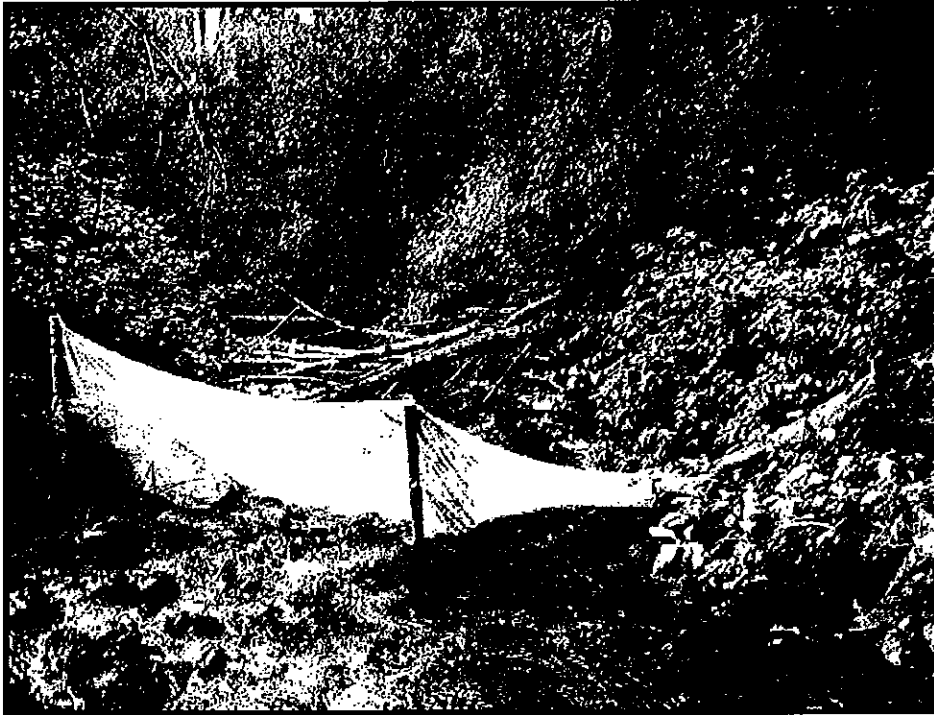


Photo 21. Upper boundary of Carmen Creek electrofishing site SCC-08.



Photo 22. Upper boundary of Carmen Creek electrofishing site SCC-09.



Photo 23. Upper boundary of Carmen Creek electrofishing site SCC-10.



Photo 24. Lower boundary of Carmen Creek electrofishing site SCC-11.



Photo 25. Upper boundary of Freeman Creek electrofishing site SCCFC-01.

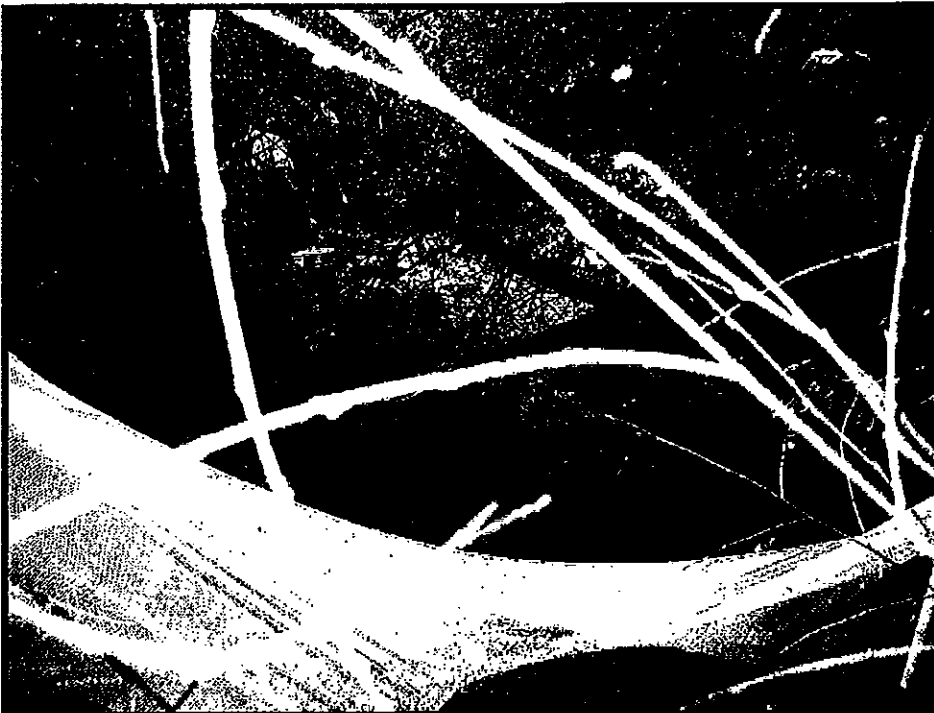


Photo 26. Upper boundary of Freeman Creek electrofishing site SCCFC-02.

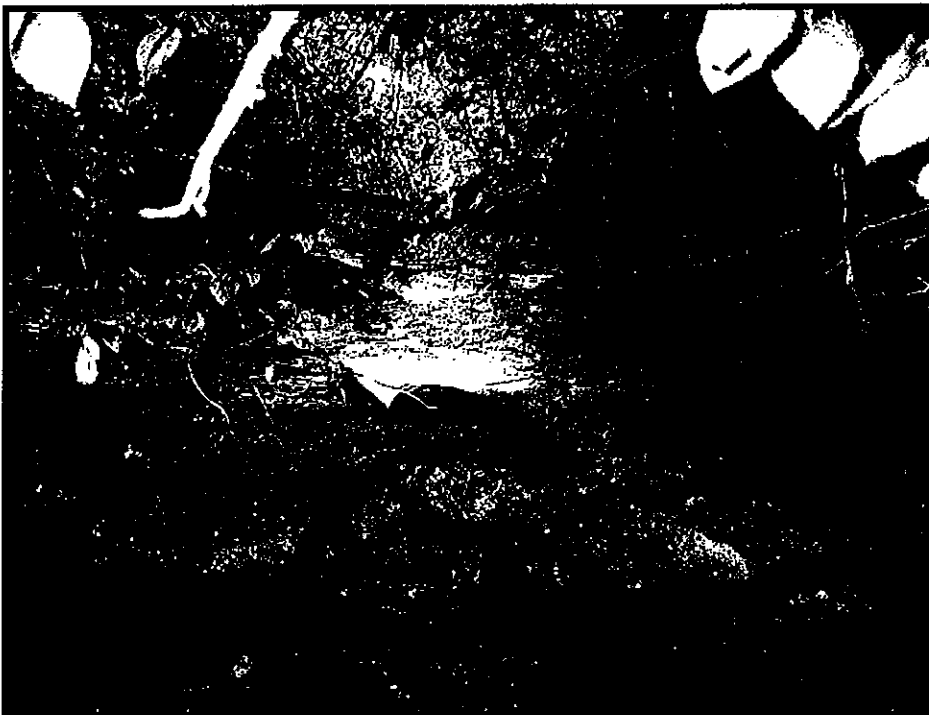


Photo 27. Upper boundary of Freeman Creek electrofishing site SCCFC-03.



Photo 28. Upper boundary of Freeman Creek electrofishing site SCCFC-04.



Photo 29. Lower boundary of Golway Gulch electrofishing site SCCFCGG-02.



Photo 30. Upper boundary of Smout Creek electrofishing site SCCFCSC-01.



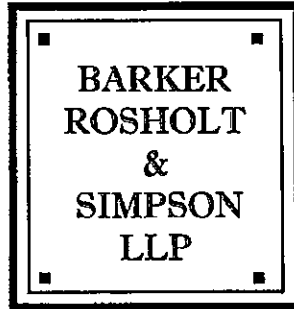
Photo 31. Upper boundary of Smout Creek electrofishing site SCCFCSC-02.



Photo 32. Irrigation diversion structure on Carmen Creek near electrofishing site SCC-05.

Exhibit B

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February 18, 2009

Cal Groen, Director
Idaho Dept. of Fish & Game
P.O. Box 25
Boise, Idaho 83707

Jim Lukens, Supervisor
Idaho Dept. of Fish & Game
P.O. Box 1336
Salmon, Idaho 83467

Re: Installation of Fish Screens (Carmen Creek) / Public Writings Request

Dear Sirs:

This firm represents certain water right holders¹ on Carmen Creek (hereinafter collectively referred to as "Carmen Creek Users"). It is our understanding that IDFG (or its contractor) is proceeding with a project to install fish screens on various water diversion structures on Carmen Creek north of Salmon, Idaho. Our clients have the following concerns regarding this project and the impact it may have on existing litigation over water right claims in the Snake River Basin Adjudication (SRBA) District Court.

For your information, our clients have all filed water right claims in the SRBA and have filed objections to other claimants' claims as well. Importantly, part of the Carmen Creek Users' objections involve the lack of a viable point of diversion for water right claims filed by Thomas and Donna Jackson (#75-10062AB, #75-70S), James Hudson (#75-100061B, #75-100062C, #75-69B, #75-70B), and Shirley Mattis (#75-10061Z, #75-10062X, #75-69P, #75-70P). These claimants have claimed a point of diversion located on Carmen Creek in the SENWNW, Section 2, Township 22N, Range 22E, Lemhi County.

¹ Our clients are Albert & Alvera Fols, Charles & Mary Harling, A.C. & Luella Pilkerton, Lloyd & Sheryl Tutor, Marci Dixon, and Tracy Mascia.

Our clients dispute the existence and use of this point of diversion, particularly during the time of the year when water is "low" on Carmen Creek and only the senior most priority rights receive water (1875, 1882 priorities).

Accordingly, our clients would request IDFG (and its contractor) to refrain from performing any work including altering the present condition of the diversion structure located in the SENWNW, Section 2, Township 22N, Range 22E, Lemhi County. The existing condition of the diversion is important evidence in the SRBA litigation and must be preserved until the case is resolved through trial or otherwise. Pursuant to Idaho law, IDFG cannot "destroy" or "alter" the existing diversion structure since it will be used for trial in the SRBA. *See* Idaho Code § 18-2603.

Apart from the above request, the Carmen Creek Users, pursuant to Idaho's Public Writings Act (Idaho Code § 9-338 *et seq.*), request the following information from IDFG related to its fish screen installation project on Carmen Creek:

- 1) Copies of all documents, including notes, photographs, electronic communications, and any other documents contained in IDFG's files on this project;
- 2) Copies of all documents related to the fish screen designs, and any and all stream flow measurements used for purposes of that design;
- 3) Copies of all federal and state permits related to this project, including, but not limited to Section 404 permits issued by the U.S. Army Corps of Engineers and stream alteration permits issued by the Idaho Department of Water Resources;
- 4) Copies of any communications or notes of communications, including contracts, between IDFG personnel and its contractor for the project;
- 5) Copies of any communications or notes of communications between IDFG personnel (and its contractor) and any and all of the following persons concerning the fish screen installation project: James Hudson, Shirley Mattis, Thomas & Donna Jackson, John & Ruth Burns, Rodney & Susan Edmiston, Johnny Cabigas, William Clementz, Robert & Jacqueline Ernest, Phillip Eisenhauer, Shelley Erwin, Terry & Veralyn Hershey, George Matjeko, Robert & Fransicka Mosher, Rick & Linda Rice, James & Cathleen Tippet, and Steven Yowell.

Our clients would appreciate a timely response to the above requests. Again, the preservation of the existing diversion at the location listed is important evidence and is protected by Idaho law. As such, IDFG should refrain from taking any actions that would "destroy" or "alter" the present condition of the diversion structure. In addition, our clients would appreciate

Mr. Cal Groen, Mr. Jim Lukens
February 18, 2009
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notification if IDFG is aware of any actions by others that may affect the condition of the existing diversion structure. Thank you for your attention to this matter and please call met at (208) 733-0700 if you have any questions.

Sincerely,

BARKER ROSHOLT & SIMPSON LLP

A handwritten signature in black ink, appearing to read 'T. Thompson', with a long horizontal line extending to the right.

Travis L. Thompson

cc: Albert Fols (c/o Carmen Creek Users)
Ray Rigby
Dallas Burkhalter
Special Master Terrence Dolan, SRBA Court