

CUTTHROAT TROUT MODULE

AFS Annual Meeting - West Yellowstone, Montana

Thursday, 13 September 1979: 1-4 p.m.

- I. Introduction - objectives of session (5 min.)  
Jack Griffith  
Idaho State University  
Pocatello, Idaho 83209  
(208) 236-2116
- II. Review of cutthroat taxonomy, evolution, and distribution (25 min.)  
Dick Wallace  
University of Idaho  
Moscow, Idaho 83843  
(208) 885-6370  
Bob Behnke  
Colorado State University  
Fort Collins, Colorado 80521  
(303) 491-5320
- III. The status, ecology and management of some major groups of cutthroat (20 min. each)
  - A. Coastal  
Jim Johnston  
Washington State Game Dept.  
Olympia, Washington 98504  
(206) 753-5713
  - B. Westslope  
Ted Bjornn  
Idaho Cooperative Fishery Research Unit  
Moscow, Idaho 83843  
(208) 885-6336
  - C. Yellowstone and fine-spotted Snake River  
John Varley  
National Park Service  
Mammoth, Wyoming 52190  
(307) 344-7381
  - D. Lahontan  
Dale Lockard  
Nevada Dept. of Fish and Game  
Reno, Nevada 89510  
(702) 784-6214
  - E. Bonneville  
Don Duff  
Bureau of Land Management  
Salt Lake City, Utah 84111  
(801) 524-4033  
Terry Hickman  
U.S. Fish & Wildlife Service  
Ft. Collins, Colorado 80521  
(303) 223-5150
- IV. Overview and summary (25 min.)  
Bob Behnke
- V. Discussion (25 min.)





Idaho State University  
Pocatello, Idaho  
83209

Department of Biology

30 April, 1979

TO: Participants in the AFS module on cutthroat trout

FROM: Jack Griffith

The cast of characters for the module is now finalized, as per the attached list. We are scheduled for 1 to 4 pm, Thursday, 13 September.

Ted Bjornn and I have done some initial head-scratching to set some bounds on the session, and have come up with the following ideas as to topics to be included. We stress that these are preliminary ideas only, and are thrown out to start the ball rolling.

Would each of you please add to (or delete items from) this list? As a minimum, scratch some ideas out on this page and send copies of it to Ted and myself. Thanks.

Dean Arnold of the AFS Program Committee would like 250 word abstracts from everyone in the very near future. We're trying to stall him off, but probably won't be able to do so for long. Be forewarned.

Module topics:

1. status of the group of cutthroat you're covering  
(Wallace & Behnke will handle this for the groups not being treated by individual speakers)
  - \* range, population size, whether increasing or decreasing
  - \* dynamics of the stocks and aspects of their ecology that are important to their well-being or responsible for their being in jeopardy (competition, hybridization, etc.)
  
2. what are the management alternatives? Are special management procedures necessary? What about:
  - \* special regulations - how much harvest (if any) is possible?
  - \* cessation of stocking exotics?
  - \* effects of land use practices?
  - \* need to transplant cutthroat into new waters?
  - \* need for hatchery cutthroat programs?



3. what are the present management practices? (for each federal/state agency involved, if more than one is involved)  
What is the rough cost of the present program?
  
4. Where do we go from here? Assuming limited resources, what is "best" management? What will it cost? Is it worth it? What criteria should be used to establish "best" management?

Obviously, we're not looking to standardize these presentations so much that the only difference between them is the name of the group of cutthroat. We do, however, want to make sure that we're asking (and hopefully answering) the same questions.



Official  
Mail



**Idaho State University**

Department of Biology  
Pocatello, Idaho 83209  
CD 006

Dr. Robert Behnke  
Dept of Fishery & Wildlife Biology  
Colorado State University  
Ft. Collins, Colorado 80521





TITLE: A SYSTEMATIC REVIEW OF THE CUTTHROAT TROUT, Salmo clarki  
RICHARDSON, A POLYTYPIC SPECIES

BY: Robert J. Behnke  
Dept. Fishery & Wildlife Biology  
Colorado State University  
Fort Collins, CO 80521

and

Richard L. Wallace  
Dept. Biological Sciences  
University of Idaho  
Moscow, ID 83843

ABSTRACT:

Evolution within the genus Salmo is considered. We segregate the trouts native to western North American in the subgenus Parasalmo. Original descriptions and nomenclature problems of Salmo clarki are reviewed. Fifteen subspecies are provisionally recognized. The first divergence occurred between coastal and interior ancestral cutthroat trout. Interior stocks subdivided into two major groups, the westslope cutthroat (S.c. lewisi) on the one hand, and a group of large-spotted trout which gave rise via isolation and subsequent divergence to the other subspecies of interior cutthroat trout on the other. These include the cutthroat trouts of the Great Basin, and the subspecies native to the Snake, Yellowstone, Colorado, Rio Grande, and the South Platte and Arkansas River basins. The original distribution of the 15 subspecies is suggested and their current distribution and status discussed. Diagnostic criteria are presented for many subspecies and taxonomic problems reviewed. Two subspecies are believed extinct. One of these, plus three others, are not yet officially named or described. Reasons for the decline, demise or increase of various subspecies are suggested.



Overview and Summary: The Future of  
Cutthroat Trout, Salmo clarki, a  
Polytypic Species

by

Robert J. Behnke  
Department of Fishery and Wildlife Biology  
Colorado State University  
Fort Collins, CO 80523

The cutthroat trout is an excellent example of a polytypic species - a species made up of numerous geographical races. Within the species, a wealth of genetic diversity occurs, governing different life history strategies and adaptations of potential value for innovative and creative fishery programs.

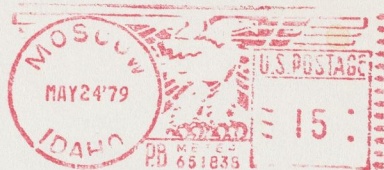
Examples of various management approaches are presented. Enhancement and protection of certain aquatic habitats must be undertaken. Poor land management practices will have to be corrected. Reintroduction of relatively pure populations into waters formerly inhabited by them can enhance the survival of the subspecies and provide improved fishery programs. The potential wise use of the vast amount of genetic diversity is suggested. The proven efficacy of cutthroat trout in special regulation fisheries and a current awareness and interest in the native fauna suggests a more hopeful future of this beautiful species.

It is no longer valid for an agency to plead ignorance of cutthroat trout taxonomy to avoid meaningful programs designed to utilize and enhance the fragments of genetic diversity that still exists.



Wallace  
University of Idaho  
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006-X003



DR. R. J. Behrke  
Dept. Fish. & Wildl. Biology  
Colorado State Univ.  
Ft. Collins, CO  
80521



9K5



Seaman

(C) = Colo. R. basin

29 August 1956

Streams of Northern Colorado known to contain cutthroat trout

Albion Cr. -- Mixed population of brook and cutthroat.

Bench Cr. -- Pure population of cutthroat above Bench Lake, few if any fish below the lake because of stream gradient. Located in the North Inlet drainage in Rocky Mountain National Park.

investigate →

Big South Fork of the Cache La Poudre River. -- Above its junction with Cascade Cr. Contains a mixed population of brook and cutthroat with some rainbows reported.

Big Thompson River. -- Reported pure native population in Forest Canyon, Rocky Mountain National Park.

Black Hollow Cr. -- Tributary of the Cache La Poudre River, entering that river from the south at Idelwile. Contains a mixed brook and cutthroat population.

Corral Cr. -- Apparently pure cutthroat population through Corral Park near Long Draw Reservoir.

(C) → East Inlet of Grand Lake (Hell Cr.). -- Pure cutthroat population through Paradise Park, Rocky Mountain National Park.

(Morgan's Ranch) found only E 35 - 1966 but didn't get very headwaters

Fish Cr. -- Small tributary of the Little South Cache La Poudre at Fish Creek Camp Ground. Only the upper reaches and the few beaver ponds there seem to support any number of fish. Population is mixed brook and cutthroat.

we have sample →

Hague Cr. -- Enters the Big South Cache La Poudre from the north inside the National Park boundary. Contains a mixed brook and cutthroat population.

Kelly Cr. -- Enters the Canadian River from the east in the Colorado State Forest. Contains brook trout for most of its length with a short stretch of cutthroat from upper beaver ponds to its falls.

(C) → Lost Cr. -- Williams Fork drainage, contains mixed brook and cutthroat population above Bill Rutherford's beaver fence. Population of cutthroats is pure in upper reaches of stream.

(C) → North Fork of Colorado River. -- In the vicinity of Phantom Valley Guest Ranch this stream contains a mixed population of brook, brown, cutthroat and rainbow trout.



North Fork St. Vrain River. -- Contains a mixed brook and cutthroat population inside the National Park boundary.

① North Inlet of Grand Lake. -- Contains mixed brook and cutthroat trout above Cascade Falls in Rocky Mountain National Park.

Nunn Cr. -- Laramie River drainage, contains pure (?) cutthroat population through Nunn Cr. Basin.

Pinkham Cr. -- Tributary of the North Platte on the east side of north park, contains a mixed population of brook, cutthroat, and rainbow trout.

Roaring Cr. -- Tributary from the north to the Cache La Poudre River near Kinnikinnick. Contains pure cutthroat population above the ridge.

Trap Cr. -- Pure cutthroats above its intersection with the Long Draw, Peterson Lake road.

① Twin Cr. -- Empties into Granby Reservoir from the east near the entrance of the Colorado River. Contains a mixed brook and cutthroat population with a pure or nearly pure cutthroat population in its upper reaches.

Willow Cr. -- Pure cutthroat population from the streams junction with the outlet of Long Draw Reservoir to its head at the foot of Specimen Mountain, Rocky Mountain National Park.

→ Conroy Cr. -- N. Fk. St. Vrain - lakes above - stocked.  
Wild Basin Rky Mt Nat. Park. (Small population)  
" " " " (Rare)

① Cast Inlet - Grand Lake - above 1st falls

① Hells Canyon Fk Cast Inlet

① Brown Gulch (No. Fk Colorado)

① Upper So Fk - Colo

① Hells Canyon (So Fk Colo)

? La Grande Creek - (L) Shipman Park



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Taxonomy of the Cutthroat Trout (*Salmo clarkii* Richardson)  
of the South Platte Drainage, Colorado

WILLIAM H. DIEFFENBACH



# Taxonomy of the Cutthroat Trout (*Salmo clarkii* Richardson) of the South Platte Drainage, Colorado

WILLIAM H. DIEFFENBACH

Taxonomy and selected life history of 50 cutthroat trout (*Salmo clarkii* Richardson) from four high altitude tributary streams of the South Platte drainage, Colorado were studied. Study areas were selected to determine the existence of fish that represent the native greenback cutthroat trout (*S. c. stomias* Cope).

The life history study indicated that the cutthroat trout in the South Platte drainage are either isolated from other trout or in association with brook trout (*Salvelinus fontinalis* Mitchell).

Morphological measurements were of little value in separating cutthroat trout into subspecies. Counts of scales above lateral line, scales in lateral line, scales two rows above lateral line, hyoid teeth, and spotting distribution provided the best information. On the basis of anatomical counts, cutthroat trout from Blackhollow Creek, Larimer County, Colorado, seem to represent the greenback cutthroat trout. Scale counts of 42 above the lateral line, 138 in the lateral line, 194 two rows above the lateral line, and a hyoid teeth count of 7 characterized this population.

## INTRODUCTION

SPECIES of the genus *Salmo* native to western North America include, among others, rainbow trout (*Salmo gairdnerii* Richardson) and cutthroat trout (*Salmo clarkii* Richardson). The cutthroat trout series is interpreted by some to include 11 subspecies (Miller, 1950). Taxonomy at the subspecific level is difficult because of inadequate early descriptions and mixing of populations by man.

The cutthroat trout of the South Platte River was taken from the Platte River near Fort Riley, Kansas, and described by Cope (1871) as *Salmo stomias*. Cope (1872) reported the original area of collection to be erroneous and stated that it inhabited the Kansas River, far to the east of the Rocky Mountains. The confusion surrounding the type location of *Salmo stomias* was increased by Jordan (1891) who stated that the Kansas River contained no trout and adopted the name *stomias* for the trout of the Platte. Jordan designated the native cutthroat trout (*Salmo mykiss stomias*) as abundant in the Park Range and in tributaries of the South Platte River.

Discovery of an unusual cutthroat trout in Albion Creek, a tributary of North Boulder Creek, Boulder County, Colorado in 1955 revived interest in the status of greenback trout. Fish collected from

Albion Creek were examined by Dr. R. R. Miller, Curator of Fishes, University of Michigan, who concluded that the specimens differed from other races of *S. clarkii* and they might represent the endemic greenback cutthroat trout (Cope, 1959). Further interest in greenback cutthroat trout came from a renewed desire to preserve endangered species. Data on greenback cutthroat trout may help clarify the taxonomy of the cutthroat trout complex.

The present investigation was designed to study populations of cutthroat trout that may possess similarities to the greenback cutthroat trout. Data collected will determine if one or more of the populations are different and if characteristics of the greenback cutthroat trout are apparent. Fish collected from four populations were studied intensively. Characteristics used were those of value in other cutthroat trout studies.

Selection of the four study areas was based on a review of previous studies and stocking records. Field reconnaissance was conducted on many streams in the high mountain tributaries of the South Platte River before final selection was made.

## METHODS

Sampling in 1963 was by angling, and in 1964 by electro-fishing and angling. Fifty fish were collected from each population.



A Review of the Cutthroat Trout, Salmo clarki,  
a Polytypic Species

Robert J. Behnke  
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Fort Collins, CO 80523

Abstract

The cutthroat trout is an excellent example of a polytypic species--a species made up of numerous geographical races. Within the species, a wealth of genetic diversity occurs, governing different life history strategies and adaptations of potential value for innovative and creative fishery programs.

Although the cutthroat trout was the first trout recorded by European man in North America and has the greatest indigenous distribution of any North American trout, it remains the least known trout to both biologists and anglers. In interior waters, the cutthroat trout was in rapid decline by the early twentieth century from a changing environment and from the introduction of nonnative trouts. Some of the interior subspecies are extinct and others are extremely rare as pure populations. In interior waters, the only area in all North America where pure, native cutthroat trout can still be found in a relatively large environment, in the absence of nonnative trout, is the Yellowstone River drainage, above the great falls of the Yellowstone, in Yellowstone National Park. In relation to the present status of several subspecies of cutthroat trout, past management practices can be characterized as ranging from benign neglect to deliberate extermination.

The proven efficacy of cutthroat trout in special regulation fisheries and a current awareness and interest in native fauna suggests a more hopeful future for this beautiful fish.

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Robert E. Vincent

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— Green — "Trout of Colorado"  
**Outdoor Empire.....**



## North Lake Held Big Fish

.....**By Bob Saile**

THE PRODUCTIVITY and popularity of a fishing lake can rise and fall like the ocean tide. It may sustain a period of years when it gives up incredible numbers of fish, or significant numbers of really large fish, and then die slowly away until it's just another lake.

Such is North Lake, a water-supply impoundment about 40 miles west of Trinidad, near Monument Lake.

William S. Green, a retired Denver Public Schools teacher, remembers when North Lake gave up huge cutthroats, brook trout and rainbows, in generous quantities.

In fact, it yielded what now would be the state record cutthroat, if the angler had bothered to have the fish officially recorded as such.

The angler was William S. Green Sr., Green's father. Green was there at North Lake on July 7, 1917, when his father landed the tremendous cutthroat.

### 'The Fish Wouldn't Fit' in Net

"I remember splashing around with our landing net trying to net the trout for him," Green said. "The fish wouldn't fit. Finally my father worked him into shallow water at the inlet, grabbed him through the gill slits and heaved him ashore." The elder Green caught the trout on an Indiana spinner fished with a fly rod, a rig that was his "secret weapon," his son said.

They took the great trout back to the elder Green's drugstore in Trinidad, where it weighed exactly 17 pounds on what Bill Jr. said was an accurate scale.

(The existing state record for cutthroat trout—and one that undoubtedly will hold up forever—is 16 pounds. The record fish was caught by the late George Hbranchak in 1964 from Twin Lakes.)

"Nobody worried about records much in those days," said Green, now 72. "My father and I were just having a lot of fun fishing."

Green, however, did mount the fish for his father, coming up with an admittedly rough-hewn homemade job. "Later I flunked out of taxidermy school," he said, chuckling. The Greens hung the trophy over the drugstore tackle counter as an inducement to buyers.

Green still has the mounted cutthroat and also has a photograph of a lunker brook trout from North Lake. The brookie is hanging from the side of an old Willys-Knight touring car, and the fish is as long as the door of the car is high.

"What happened was this," said Green. "The city of Trinidad built an earthen dam at the lake to store water for the city water supply. They diverted water into it from the North Fork of the Purgatoire River.

"Apparently the trout came over in the diversion plume and got into the lake," Green continued. "The lake had a lot of good feed in it, particularly a form of salamander scientifically known as the axolotl. This thing could grow to six or more inches in length, and the trout really got fat on it."

### 'Big Swirls From Those Trout'

"One day my father just happened to stop at the lake, saw some big swirls from those trout, and that's how we started fishing it."

Now, North Lake is mostly a put-and-take rainbow fishery, with a few small brook trout.

Green, who lives at 1133 Hudson St., was a science and audiovisual teacher in the Denver schools. In 1937, he published, through the Denver Museum of Natural History, a book he wrote on the trout of Colorado and their history.

Although 5,000 copies were printed and distributed through the museum, schools and libraries (at a price of 25 cents a copy to the reader), Green knows of only two which still exist. He has them both.

There are some fascinating tidbits of trout history contained in the paperback volume. For instance, it tells of the introduction of steelhead trout into the St. Vrain River near Lyons, Colo. Some 14,000 were dumped into the stream in 1902.

The book also notes that golden trout from California were introduced into "Gwendolyn Lake" in 1932 and "are doing well," reaching up to 18 inches in length. (There is a two-acre lake called Gwendolyn Lake in the Trappers Lake area. This is apparently the lake in question, but it is said to hold only cutthroat trout now.)

Green seemingly was way ahead of his time in 1937, as far as his concern for the state's trout resource. He noted that the best fishing even then was being found farther and farther away from the main roads, and he warned that strict conservation measures were needed to protect this fishing.

### 'Task Is Well Worth the Effort'

He advocated inventories and studies of streams and the curtailing of land erosion caused by overgrazing and clear-cutting.

"This we must do if we want the best fishing, and the task is well worth the effort, not only for ourselves but for future generations," he wrote.

Green said he still loves to fish.

"I don't climb around under those willows like I used to," he quipped, "but I still go."

## Baby Bu's Face Husk

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# Outdoor Empire.....



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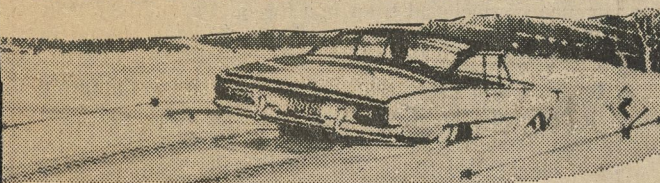
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 30 'TIL 6 SAT. 'TIL NOON PH. 892-0007

**ER BLEM  
 CULAR!!!  
 COME ON DOWN!**



**\$1700**

**F 78-14**  
 White Tubeless  
 PLUS F.E.T. 2.37  
 No Exchange Required



**Dayton Thorobred  
 INTERURBAN 78**

A handsome snow-

SIZE	WHITE	FED. EX. TAX.
F78-14	\$16.00	2.22



Departmental Correspondence Only

STATE OF COLORADO

DEPARTMENT OF GAME AND FISH

TO: District W.C.O.'s

DATE: 2/18/64

FROM: Rolf Nittmann

SUBJECT: Native Trout Lakes

The Denver office has requested a listing of all lakes and streams in the region which contain the following:

- (1) Native Trout (only)
- (2) Native and Rainbow (only)
- (3) Would also like to know which lakes have spawning areas and which do not.
- (4) Which streams have populations of natives only guarded by downstream natural barriers, i.e., waterfalls, etc.

Please check the enclosed list for the lakes and streams in your district in regard to the species contained and presence or absence of spawning areas. This list may be inaccurate.

Any corrections, additions, subtractions and/or comments are solicited.

Very truly yours,

Rolf B. Nittmann  
Regional Fish Mgmt. Biologist

RBN:cwl

*Denver office Copy:*

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NATIVE TROUT LAKES

SPAWNING AREAS

<u>Name</u>	<u>Yes</u>	<u>No</u>	<u>Unknown</u>
Upper Agnes Lake			X
Agua Fria Lake (Park Range)			
Abert Lake (Buffalo Pass)		X	
American Lake, Upper		X	
*Arapahoe Lakes, #1 (East Portal)		X	
*Arapahoe Lakes, #3 (East Portal)		X	
Arapahoe Lake (Coyote Creek Lake) National Park		X	
Arapahoe Lake (Kidney Lake) National Park		X	
Banana Lake (Eldora)		X	
Bear Lake (Park Range)			X
Bear Lake, North (Park Range)		X	
Bear Lake, North (Park Range)	X		
**Bear Track Lake, Upper (Mount Evans)		X	
Big Horn Lake (Park Range)	X		
Bill Moore Lake			X
Blue Lake (Cameron Pass)	X <sup>2</sup>		
Blue Lake, Upper (Ward)			X
Bob Lake (Corona Pass)		X	
Bryan Lake (Empire)			X
***Caroline Lake (Idaho Springs)		X	X
Clear Lake (Colo. State Forest)		X	X
Corona Lake (Corona Pass)			X
Cone Lake (Berthoud Pass)			X
Coney Lake, Lower (Ward)			X
Coney Lake, Upper (Ward)			X
Crator Lake #1 (Rawahs)		X	
Crator Lake #2 (Rawahs)	X		
Dorothy Lake (Eldora)			X
Envy Lake (Peaceful Valley)			X
Ethel Lake (Empire)			
Gem Lake (Encampment)			X
George Lake (Buffalo Pass)	X		
Hagarman Lake			X
Hang Lake (Cameron Pass)		X	
Heart Lake, Big (East Portal)		X	
Heart Lake, Little #2 (East Portal)		X	
Herman Lake (Loveland Pass)			X
Ice Lake (Idaho Springs)		X	
Iceberg Lake, North (East Portal)			X
Iceberg Lake, South (East Portal)			X
Illinois Lake (Bowen Pass)			X
Isabelle Lake (Ward)			X
+Island Lake (Rawahs) <i>(West Branch)</i>		X	
James Peak Lake (Tolland)		X	
Kearney Lake (Loveland Pass)			X
++Kealy Lake		X	

- \* Surveys indicate barren, N fry stocked  
 \*\* May be brooks present  
 \*\*\* May be lake trout present  
 + May have brooks  
 ++ May plant N and/or grayling



King Lake (Corona Pass)			X
Longs Lake (Troublesome Pass)			X
Lost Lake (Rabbit Ears)			X
Mitchell Lake, Big (Peaceful Valley)			X
Mitchell Lake,			
Rainbow Lake, Upper (Mount Ethel)	X		
Rainbow Lake, Middle (Mount Ethel)	X		
Rainbow Lake, Lower (Mount Ethel)	X		
Rabbit Ears Lake (Rabbit Ears)			X
<del>Rawah #4 (Rawahs)</del>		X	
Rogers Lake (Rawahs)		X	
Roosevelt Lakes (Mount Evans)	X		
Roxy Anne Lake (Park Range)	X		
Upper and Lower Sawmill Lakes (Buffalo Pass)		X	
Seven Lakes #1 (Pearl)	X		
Seven Lakes #2 (Pearl)	X		
Slide Lake, Upper (Park Range)	X		
Slide Lake (Park Range)	X		
Square Top Lake, Upper	X		
Square Top Lake, Lower	X		
Ute Lake (No. Fk. No. Platte)			X
Zimmerman Lake (Cameron Pass)	X		

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\* Tentative poisoning and N restocking project  
 \*\* Brook, Native and Rainbow  
 \*\*\* May have Brook

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<u>Name</u>	<u>Yes</u>	<u>No</u>	<u>Unknown</u>
Manzanares Lake (Encampment)			X
Mitchell Lake, Little (Peaceful Valley)			X
Murray Lake (Guanelia Pass)	X		
Peggy Lake (Park Range)			X
Peterson Lake (Cameron Pass)		X	
Rock Creek Lake (Rand)			X
Rock Hill Lake (Rawahs)		X	
Rogers Lake (East Portal)			X
Ruby Jewel Lake (Clark's Peak)		X	
Sapphire Lake (No. Boulder Cr.)			X
Shoestring Lake (Buffalo Pass)			X
Silver Dollar Lake (Guanelia Pass)		X	
+++Slater Lake (Idaho Springs)			X
Storm Lake (Jasper Creek)	X		
Turquoise Lake (No. Fk. Mid. Boulder)			X
Victoria Lake (Buffalo Pass)		X	
Wattenberg Ponds (No. Fk. No. Platte)		X	
<i>Rawah #14</i>		X	
<i>Seeberg</i>		X	

+++Probably barren, N stocked

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## NATIVE AND RAINBOW LAKES

## SPAWNING AREAS

Name	Yes	No	Unknown
Abyss Lake			X
American Lake, Lower		X	
Arapahoe Lake (Lost or Long Lake) North Park		X	
Arapahoe Lake (Willow Lake) North Park		X	
Betty Lake (Corona Pass)	X		
Blue Lake (Ward)		X	
Ceanothuse Lake (Park Range)			X
Chicago Lake, Upper (Mt. Evans)	X		
*Cirque Lake (Pingree Park)		X	
Cirque or Frozed Lake (Mt. Evans)		X	
**Devil's Thumb Lake (Eldora)		X	
Forest Lake (Rawahs)		X	
Gibraltar Lake (Peaceful Valley)			X
Goose Creek Lake (Helena)			X
Hidden Lake (Coalmont)		X	
Iceberg Lake (Rawahs)			X
Jonah Lake (Coalmont)	X		
King Lake (Corona Pass)		X	
Longs Lake (Troublesome Pass)			X
Lost Lake (Rabbit Ears)			X
Mitchell Lake, Big (Peaceful Valley)			X
Mitchell Lake,			X
Rainbow Lake, Upper (Mount Ethel)	X		
Rainbow Lake, Middle (Mount Ethel)	X		
Rainbow Lake, Lower (Mount Ethel)	X		
Rabbit Ears Lake (Rabbit Ears)			X
***Rawah-#4 (Rawahs)		X	
Rogers Lake (Rawahs)		X	
Roosevelt Lakes (Mount Evans)	X		
Roxy Anne Lake (Park Range)	X		
Upper and Lower Sawmill Lakes (Buffalo Pass)		X	
Seven Lakes #1 (Pearl)	X		
Seven Lakes #2 (Pearl)	X		
Slide Lake, Upper (Park Range)	X		
Slide Lake (Park Range)	X		
Square Top Lake, Upper	X		
Square Top Lake, Lower	X		
Ute Lake (No. Fk. No. Platte)			X
Zimmerman Lake (Cameron Pass)	X		

\* Tentative poisoning and N restocking project

\*\* Brook, Native and Rainbow

\*\*\* May have Brook

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NATIVE TROUT STREAM SECTIONS WITH NATIVE ONLY

<u>Name</u>	<u>Location</u>
Big Creek (Pearl)	From Big Creek Falls upstream
Box Prairie Creek (Buckhorn Cr.)	Above Buckhorn Ranger Station
Buffalo Creek (Coyote Cr., Grizzly Cr., N.P.)	?
Carrol Creek (Big So. Cache la Poudre)	Headwaters to road to Long Draw Campground.
Coyote Creek (Big Grizzly)	Spicer Peak Area ?
Face Creek (Chambers Lake)	Blue Lake down ?
Nunn Creek (Deadman Park)	Headwaters to Deadman Cr.
Roaring Fork Creek (Poudre River)	Headwaters down ?
Whaler's Creek ( Grizzly Cr.)	Headwaters down ?
<i>Unnamed Fork of Grizzly Creek</i>	<i>Rabbit Eau Pass Down</i>

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Most of the specimens from Trout and Birch Creek exhibit a profusion of basibranchial teeth in dense patches, typical of the trout in Pine Creek and Hendrys Creek. Also specimens were examined with teeth appearing on the hypobranchial segment of the gill arches, a highly unusual character, otherwise commonly found only in cutthroat trout from Pine Creek and Hendrys Creek. Biochemical analysis of many groups of cutthroat trout performed at Utah State University has provided cogent evidence of a unique genetic event occurring in the ancestral progenitor of the Snake Valley cutthroat after their separation from other Bonneville cutthroat trout, which is shared in common by the present Trout Creek and Pine Creek (specimens from Goshute Creek were used) populations, differentiating them from other Bonneville trout (and all other cutthroat trout tested).

The A form of the lactate dehydrogenase enzyme (LDH-A) of muscle tissue typically reveals a very stable and unchanging pattern in all cutthroat and rainbow trouts surveyed to date. In both the Pine Creek and Trout Creek cutthroat trout, an unusual banding pattern was exhibited, suggesting that one of the genes governing LDH-A expression functions in a most "abnormal" manner. Whatever the explanation of such a phenomenon, the unique LDH-A shared by the Pine Creek and Trout Creek populations, distinguishing them from all other trouts examined, supports the morphological data that the Snake Valley cutthroat trout represents an ancient divergence from S. c. utah. The biochemical analysis is reported on in an annual progress report, NMFS Project No. 1-87-R, June 1, 1974 - May 31, 1975 by Stalnaker, Klar, Braman, Kao and Farley. Utah Cooperative Fishery Unit, Logan, Utah.

The first collection of 17 trout from Trout Creek above the barrier made in 1974 were poorly preserved and a later collection was made. The last collection separated the specimens from three collecting sites (probably less