CONSTRUCTION CREWS WORK ON VARIETY OF PROJECTS THROUGHOUT THE GEM STATE

Management of fish and game requires adequate equipment, storage space and functional buildings. Responsibility for keeping abreast of the constantly expanding need for construction of new facilities and maintenance of existing equipment falls on the Construction and Engineering Department.

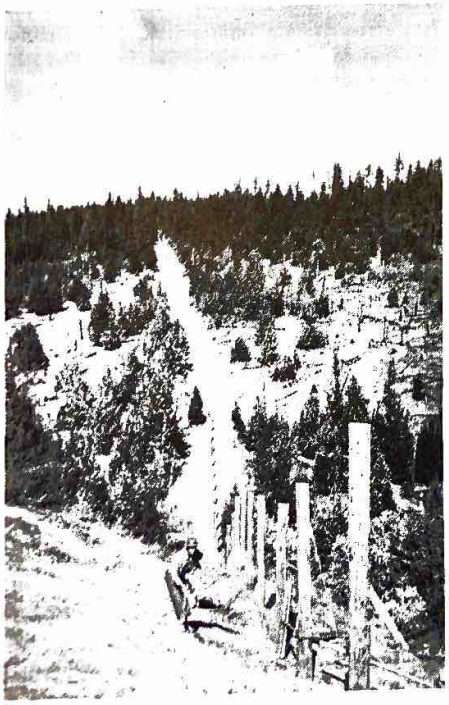
Frank Oster heads the department, and spends many hours at the drawing board, designing, remodeling and outlining projects. Ivol Sies is in charge of field construction, and acts as a roving supervisor, directing actual construction and checking finished projects throughout the state.

As the 1949 construction season heads into cold weather, and a reduction in operations, here is a summary of current projects scattered from one corner of the Gem State to another, all a part of the fish and game department's protection, propagation and management programs.

New granary and quonset-type garage are shown in the foreground at the North Idaho bird refuge in Coeur d'Alene. Acres of wire-topped pens have been reconstructed at the pheasant farm. New work includes a water pipeline and storage shed. (F&G Photo)

Northern Idaho

The buildings at the Boundary county refuge have been painted this summer. Dirt has been hauled in and preparations made for grass seeding. Barley and wheat have been planted to provide fall feed for migrating waterfowl.



Part of a five-mile fence built by the game department's construction crews. The barrier encloses white-tail deer study area, was eight feet high and required 2,100 posts. (F&G Photo)

All pheasant holding pens have been covered, and shrubs have been planted at the North Idaho Bird Refuge near Coeur d'Alene. Construction has started upon a warehouse and workshop adjacent to the district warehouse now at the refuge. Construction of a 2,000-foot pipeline to provide water for the pens awaits approval of water rights.

A new 12-inch pipeline has been laid at the Clarks Fork hatchery. This will supply additional water for holding ponds. A brood stock pond for Kamloop trout has been constructed and the subdivisions placed. The pond is 75 by 300 feet. A dry food fuel and cold storage building 14x20 has been constructed this summer at Clarks Fork Hatchery. A garage remains to be built, and the long concrete raceways are to be subdivided.

The department plans to start work upon a new steel quonset type hatchery near the present Sandpoint hatchery. The old building is to be demolished after completion of the new hatchery. The work will start this fall.

The Fernwood rearing pond area has been improved by raising the old dwelling, placing a new concrete foundation and building a 10x24-foot addition on one end. Modern living facilities have been installed. The swamp has been drained and a turning area graded to provide space for the large department fish truck to turn and unload directly into the holding ponds.

A precipitous falls area on Santa Creek that formerly restricted upstream migration of trout, has been dynamited and pool areas have been created along the sidewalls.

North Central Idaho

The whitetail deer enclosure and study area on Moscow mountain south of Potlatch has been completed with the exception of seeding along the outside fence edges. Nearly five miles of fence, eight feet in height has been placed to enclose the study area. The work called for clearing a strip 12 feet wide a distance of five miles, and placing 2,100 posts. A crew of 25 to 30 men were on this project for over two months. The Moscow Mountain project is a part of the Federal Aid Wildlife Restoration program and will provide for studies of habits, productivity, age determination and range use of the whitetail deer.

A dwelling at Deary has been remodeled and modernized. The department crew built a new bridge across Lapwai Creek at the bird farm. The Lapwai fish holding ponds were

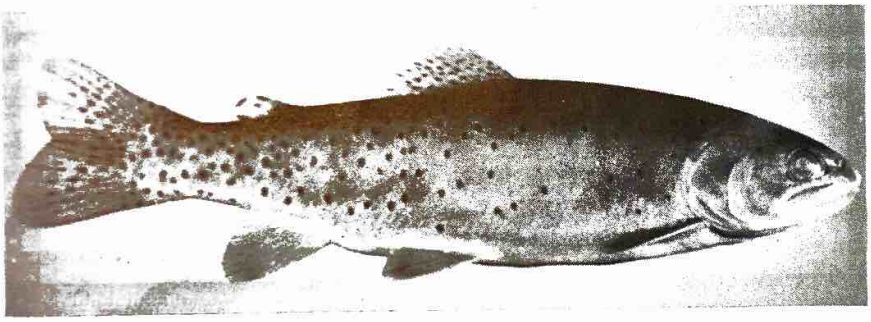
FISHES OF IDAHO No. 7

Cutthroat Trout

Salmo clarkii lewisi
(GIRARD)

By JAMES C. SIMPSON
Idaho Fish Culturist

The cutthroat trout is known by a variety of common names, such as: native trout, blackspotted trout and redside native trout. There are several color variations of the cutthroat trout found in Idaho. However, it is impossible to distinguish between the variations from a standpoint of anatomical characteristics. Of particular interest is the cutthroat trout of the Salmon River drainage, which has more red on the sides and a lighter yellow on the belly than do the regular Snake River cutthroat and, hence, the common name "redside native." Both the Snake River cutthroat and the Salmon River cutthroat differ some in spotting and in color from the Yellowstone blackspot, which has been widely introduced. The cutthroat trout is one of the two trout native to Idaho and is found throughout the majority of the waters of the state. No doubt, the blackspotted trout of Yellowstone Lake is a descendant of the cutthroat trout of the Snake River, since at one time Yellowstone Lake drained into the Snake River.



The cutthroat trout . . . a fish of many colors (F&G Photo)

The cutthroat can be distinguished from other trouts by the red slash on the dentary or under jaw. The black spots are large and scattered over the body, but concentrate more toward the posterior end of the body, particularly on the caudal fin. There are seldom any spots found on the belly. The belly usually has a yellowish cast which may vary in intensity. The scales on the body are small, numbering from 156 to 190 along the lateral line. The average is 165 to 170.

As a food fish, the cutthroat is unsurpassed by any other species of trout. It is particularly sought after by anglers from eastern states, inasmuch as this species has not been widely distributed in the east.

It is more difficult to rear cutthroat in hatcheries than the other species of trout. However, because of the fact that it is native to the state and has done well in the majority of waters, it is still propagated extensively by the Fish and Game Department. Two spawntaking stations are maintained for the taking of cutthroat trout eggs. The Wolf Lodge spawning station on Wolf Lodge Creek, a tributary to Coeur d'Alene Lake, produces approximately 1,500,000 eggs annually. The other spawning station, Henrys Lake, is truly the last frontier for the production of a relatively pure strain of cutthroat trout. This station produces between 9 and 11 million eggs annually. Unfortunately, other color variations of cutthroat have been introduced into Henrys Lake. However, with careful selection during spawn-taking operations and the planting back into the lake of the true Snake River cutthroat, it is felt that eventually the strain can be developed to conform with the original Snake River cutthroat. The Snake River cutthroat taken from Henrys Lake apparently does exceptionally well in either lakes or streams and, for that reason, the Department is making every effort to retain Henrys Lake as a strictly cutthroat lake.

The cutthroat trout is a spring spawner. The time of spawning probably depends upon altitude and temperature of the waters. Spawning at Henrys Lake commences usually about the first of May.

The cutthroat and rainbow trout will cross readily with the resulting fish having low reproductive capacity but with a hybrid vigor. Generally the trout which are crosses between a rainbow and a cutthroat will grow larger and much faster. As a result of this vigor, there is some demand by fishermen for the Deparment to cross the two species and plant the crosses in various bodies of water in order that they might catch larger fish. However, cutthroat will also grow to a large size. There are several records of 12- to 14-pound cutthroat which have been taken from Henrys Lake. In 1949 a 17-pound cutthroat was caught in a fish trap on St. Charles Creek, a tributary of Bear Lake.

Care of Game Is Duty of Nimrod

Proper care of game animals after the kill, with proper equipment to effect removal of the deer or elk from the hunting area to the hunter's camp or home, has been and is being emphasized by the Idaho Game Department this fall.

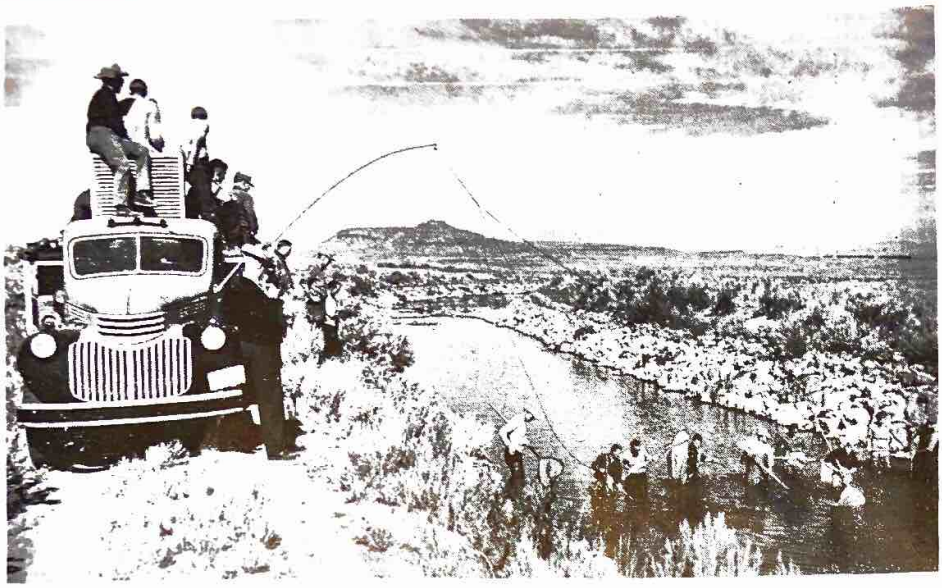
Reports have been numerous, and not altogether unfounded, of elk or deer being left to spoil, or spoiling along the trail. Hunters quite often bring their game into lockers and cooling rooms, only to have the meat turn sour, due to poor field care.

Leaflets have been prepared by the department, and will be furnished to each hunter at checking stations. Some are distributed from the license vendors. Information included outlines the equipment needed, and the care that should be taken of the animal after the kill.

Authorities have emphasized the necessity of cleaning an animal at once, and thoroughly. The brisket should be opened and the windpipe removed. The carcass must be elevated from the ground either by hanging from a tree limb or by placing suitable limbs or boughs under the quarters. The more rapid the heat loss from the game—the better the meat. Game left on the ground will not cool for many hours.

Elk are large animals and require extra rope for tying up the quarters; a large hunting knife and hatchet or small axe. Horses or mules are an absolute necessity to transport the heavy parts from the kill area to the camp or the car. The hunter should protect the meat from snow and rain by canvas or shelter if possible. If the animal is not brought into camp, inspection should be made every day. Good muslin sacks are handy to keep flies from the meat.

Penalties are provided for the failure of any person to properly dress and care for any game animal.



Salvage crew takes fish stranded in Richfield canal to Shoshone Rod and Gun Club's fish truck, left, for replanting in Wood River. Game department personnel and sportsmen cooperated to rescue 1,500 fish. Boom pole keeps power lines from generator to electrodes clear of ground and out of user's way. "Hot" electrode was placed in center, and a "cold" electrode on each side, creating field across entire canal. (F&G Photo)

Salvage Operation Saves 1500 Rainbow for Idaho Fishermen

Salvage operations on the Richfield canal in Shoshone county October 1-3 netted more fish than ever before. Forrest Hauck, fisheries biologist, reported. Game department personnel and interested sportsmen saved 1,531 fish marooned in the irrigation canal after water was shut off at Magic Dam.

Average weight of the rainbows was 2.1 pounds. Game department electrical shocking equipment was used. Sportsmen from Ketchum, Hailey, Shoshone and Jerome turned out to help in salvage operations.

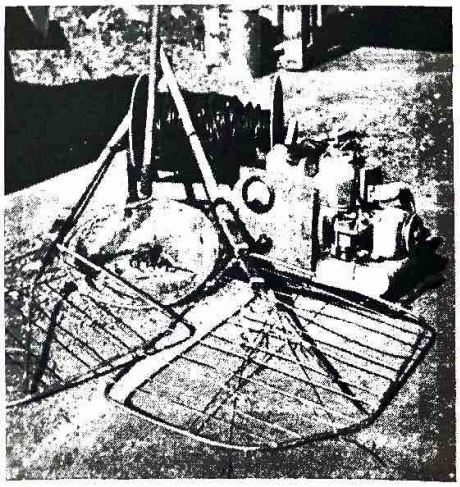
The electrical shocking device stuns fish temporarily and causes them to surface. Dip nets are used to transfer the fish to waiting tank trucks. The Shoshone Rod and Gun club's fish tank and a game department tank truck relayed the fish to planting sites on Wood River above Magic Dam.

A total of 1,319 fish were replanted in Wood River. Mortality rate was 13 per cent. Largest fish netted during salvage was eight pounds.

Huck said the salvaged fish cost 6.1c each. Fish grown in hatcheries to the same size would have cost $10 each. The total cost of the operation was $195.90.

A rotary type drum screen across the mouth of Richfield canal would cost approximately $50,000 to install, the biologist said. "Salvage is an economical method of saving the fish for Idaho anglers," he added.

Growth conditions were found to be excellent in the canal. Fresh water shrimp and other desirable forms of fish feed are plentiful. Hauck pointed out that the canal provided another fishing stream for residents of the area, as fish grow faster in the canal than in many surrounding streams.



Portable gasoline generator supplies 95-volt current to electrodes. Electricity stuns fish temporarily, causing them to surface. Dip nets transferred fish to truck. (F&G Photo)

STATISTICS ON FISHING TREND ARE GATHERED

Extensive information about fishing success and numbers of fish taken by the angling public has been gathered during the past summer at Spirit Lake in northern Idaho. The data has been compiled under the terms of an experimental creel census designed by Daniel R. Embody of the Embody Statistical Laboratory.

Mr. Embody came to Idaho after leaving the armed services and entered business as a research consultant. While attending Cornell University he specialized in fisheries research and extensive study with reference to problems of fish production.

The census was initiated on Sunday, May 8, and was outlined to provide samples over a six months period. Fourteen census days in all will be utilized for the project. The days are chosen to allow a complete sample of the entire fishing period, and the records are not necessarily taken on days when large numbers of fishermen are on the lake.

Six stations were established about the lake, and sportsmen, resort owners, and conservation officers cooperated and worked diligently as a team to record the information. Information cards were designed by Embody and printed by the Spirit Lake Sportsmen Association. Posters with information regarding the census were printed and placed about the lake.

On opening Sunday, 2,459 fish were caught by 220 fishermen in 1,227 fishing hours. The next check was made on Saturday, May 28, when numbers dropped to 827 fish for 104 fishermen who fished 614 hours.

The complete results of the census will be published when the project has been completed this fall. At that time a valid estimate of the total catch for the season will be compiled.

Channel catfish have been planted in the Snake River. The cats' have shown satisfactory growth and are frequently taken by anglers between Weiser and the Seven Devils country.

The badger can dig a hole large enough to completely conceal itself in two minutes.

FISH PROBLEM HAS SAME FACE FOR 49 YEARS

By Jack Anderson

Where have all the fish gone? Modern day anglers ask this question perhaps more than any other, except "What are you going to do about it?" There is an air of despondency about Joe Angler as he ponders the situation. He remembers his father and cronies, who have an album full of time-yellowed photos, showing a group of grinning fishermen standing behind a string of fish that would take a three-fourths inch cable to support, and could have fed the Liberian army for 16 days.

As he dejectedly surveys his airy creel, he formulates invectives to hurl at the fish and game department for not keeping fish in the streams as "thick as sardines like they uster be."

Well, Joe and his fellow anglers are in for a rude shock. Things never can be like they "wunce was." Streams have changed, times have changed, and Idaho is becoming more thickly populated. "Malarkey," shouts Joe. But facts are facts.

According to the 1929 biennial report, Idaho sold a total of 93,000 licenses for all kinds of fishing and hunting in 1929. Only 70 of these were non-resident hunting and fishing licenses.

License sales indicate that in 1949 there will be nearly 225,000 licenses sold in Idaho. This increase of more than 200 per cent in 20 years is bound to be reflected in the share of fish and game any one individual may receive.

Productivity of our streams and habitat has steadily declined. Agricultural land has taken over wildlife habitat. Streams have been altered, polluted and lessened in flow by poor management of watersheds.

When more people are competing for less game, someone is going to go empty handed. A look at the first game department biennial report, 'way back in 1900, shows that the same problems which today are stark reality, were foreseen as conservation crises.

Some of the unwise practices in force then have been eliminated, but others continue to exist nearly a half-century later.

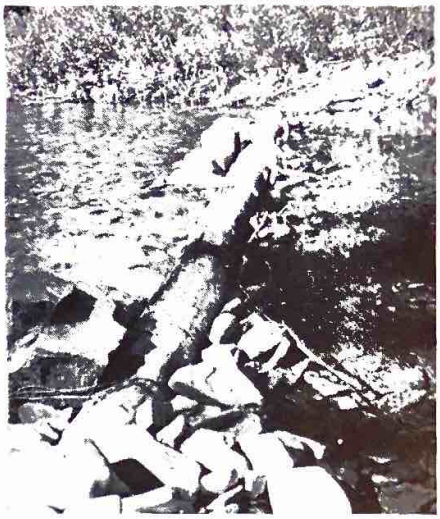
Charles H. Arbuckle, then state warden, recommended that non-resident and local hunters be required to have sufficient equipment to remove game meat from the forest without waste. Idaho still has no regulation, except a wastage law, which is easy to violate by use of the airplane and avoidance of checking stations.

The warden reported shipments of 90,000 pounds of game fish from the Henry's lake area to Utah. Bag limits reduce the daily shipments per individual today, but the season's total is staggering.

Loss through irrigation ditches was a problem in 1900. Forty-nine years later with a tremendously expanded irrigation system in operation, ditch losses are still a major problem.

But let's look at the progress side of the ledger. In 1900, there was no limit on waterfowl, spring shooting of upland game birds was allowed. Marauding bands of Indians presented problems by their exemption from law. Predatory animals were uncontrolled. Game wardens received no pay unless they obtained a conviction, there was no bag limit on fish, spearing and seining were legal. The entire game department received an appropriation of $300 per year for all activities, and no license to hunt cr fish was required. Many of these situations have been remedied and corrected.

Despoilage of natural resources has outrun conservation. Now the backlash of short-sighted usage is fouling our fishing lines, and will require patient, long-range undoing, and some sacrifice by all of us, in the form of reduced catches and kills.



Simple log obstruction creates enough water disturbance to dig sizable hole in streambed of Coeur d'Alene River. Watercourse improvement is in its infancy in Idaho; points to better fishing in many eroded streams. *(See story, page 9.)* *(F&G Photo)*

A rattlesnake can strike without coiling, and often doesn't rattle before striking.

Fisheries Biologists Tim Vaughn and Forest Hauck census Idaho stream by electric shocking method. Current turns over many fish never seen by fishermen, proves that natural feed conditions affect fish's inclination to bite real or artificial lure. *(F&G Photo)*