Van Woert

OUTDOOR CALIFORNIA

Vol. 21, No. 9-10 California Department of Fish and Game September-October 1960

Major Clearance Program

10-Year Stream Clearance Program Is Approved by Wildlife Conservation Board

A master plan for clearing valuable silver salmon and steelhead spawning streams of logs and other debris was approved September 19, 1960 by the California Wildlife Conservation Board at a meeting in Eureka.

The big job will be done over a 10-year period at an estimated cost of $500,000. A survey among salmon and steelhead anglers made in 1953 indicated that the total value of the sport fishery would now be worth over $23,000,000 annually to the State of California if the north coastal streams are cleared.

The salmon and steelhead fishery has generally been on a decline for many years. The approved plan will encompass the rehabilitation of about 1,700 miles of coastal streams from Oregon to Monterey Bay which are outside the national forests.

Once Excellent Habitat

These streams were once excellent habitat for salmon and steelhead. The majority of the mileage has been adversely affected by poor logging practices starting as early as 1895. Logging practices have recently been improved as provided for by legislation enacted between 1951 and 1957.

Experience has shown that two years of stream clearance work and one year of followup are adequate to accomplish good results on each watershed.

Much is being done to correct some of man's harmful effects by constructing ladders and fishways over and around the various manmade barriers, screening diversion intakes, cleaning up industrial and domestic pollution and rearing fish in hatcheries. But a great deal remains to be done to clean up the litter on the coastal watershed left by some 65 years of logging, much of it from before the days of better forest practices.

Enforcement of Law

It is of note that the only blockages that will be cleared are those where responsibility for cause cannot be determined. In regard to the total job, Walter T. Shannon, Director, Department of Fish and Game in a communication to the Wildlife Conservation Board said, "It should be pointed out that the program is not merely a cleanup of streams. It is our intention to continue to bring before the public the seriousness of the problem through conservation education as well as to expand the enforcement of existing laws relating to erosion and debris."

(Continued on page 3)

One and One = A Big One

If Life Magazine can do it—Outdoor California Magazine can do it!

Obtaining the very best stories and articles for this magazine is a never ending job and sometimes very time consuming. In the past two or three months extra days of work have slipped in after deadline dates and have caused this magazine to come out late.

This issue of the magazine is larger than usual as a bonus for the readers to compensate for combining the September and October magazines into one.

Don't Shoot! Help Canvasback and Redheads Comeback

Canvasback and redhead ducks are being given every chance to make a comeback. Federal hunting regulations, according to the U.S. Department of the Interior were drawn this year to help those two ducks respond to the improvements expected next year in conditions on the breeding grounds.

Last year's hunting of these two species, restricted though it was, took a heavy toll of the adult birds and left a void which only can be filled by birds from this year's broods—provided that hunters make sure the bird in their gunsight is not a canvasback or redhead.

This year's rains brought back much of the lush vegetation so necessary to the nesting of these and other species. If next year's rainfall is equally abundant in the potholes—and if sufficient "cans" and redheads return to their breeding grounds, a quick recovery of these species can be expected.

(Continued on page 6)

Commission to Meet

Notice is hereby given, in accordance with Section 206 of the Fish and Game Code, that the Fish and Game Commission shall meet on December 9, 1960, in the State Building Auditorium, First and Broadway, Los Angeles, California, to hear and consider any objections to its determinations and proposed regulations in relation to fish, amphibia, and reptiles for the 1961 angling season, such determinations and orders resulting from hearing held on October 4, 1960.

In the August 1960 issue of Outdoor California the date of the December Fish and Game Commission meeting was erroneously reported as December 19. The correct date for the regulatory powers meeting is December 9.

LANDLOCKED SALMON

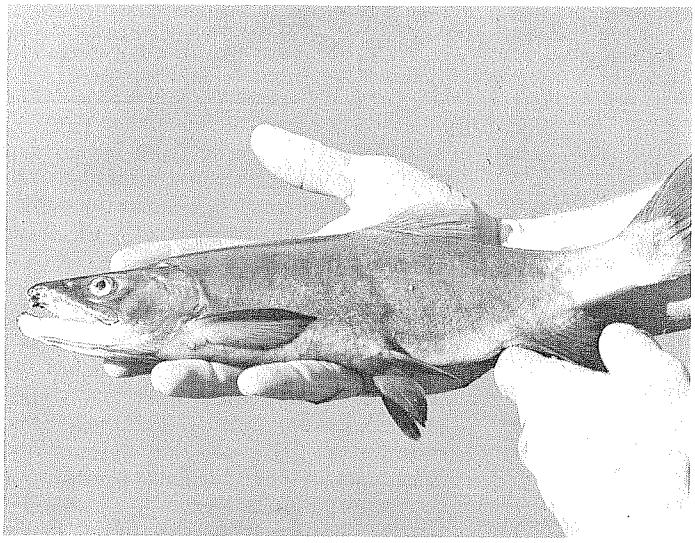
Kokanee Salmon Offers Good Angling

By Robert C. Tharratt
Fisheries Biologist

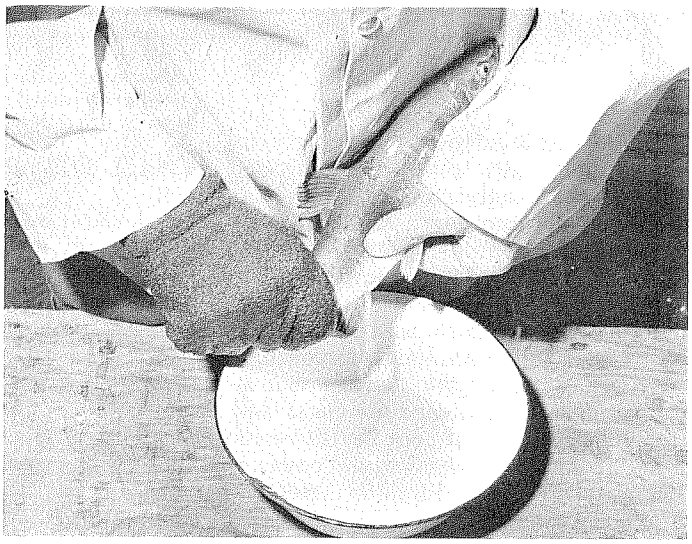
Kokanee salmon, a fish little known to many California anglers, may occupy a more prominent position in California's future inland fisheries programs. By 1978, it is anticipated that there will be 47 large coldwater reservoirs with a total of approximately 66,000 surface acres in area.

Kokanee hold real promise as a partial solution to the problem of providing good angling at a reasonable cost in such waters, because they can be stocked successfully just after they reach the "swim-up" stage and begin to feed.

These salmon, known elsewhere as little redfish and silver trout, are the landlocked, diminutive form of the sea-going sockeye salmon of the Pacific Northwest. Unlike their seafaring cousins, the kokanee have been completely adapted to spending their entire lives in fresh water.



There he is on the left, a beautiful 13-inch male kokanee salmon. These landlocked salmon may offer good fishing in the future at reasonable cost. This particular male was taken at Lake Arrowhead. On the right a female



kokanee is shown being stripped of her eggs. Note that the worker is wearing a woolen glove on his right hand; that is done to get a better grip on the tail without unduly crushing the fish. Both pictures were taken by Ward Gillilan.

Experimental Planting

Because of the excellent fishing produced by the kokanee in certain lakes in Washington, Idaho, and Canada, a shipment of kokanee eggs was obtained by California from Idaho in 1941 for experimental planting.

The first plant was made in Salt Springs Reservoir, Amador County, in July of 1941, when some 67,000 fingerlings were released. These fish did well and in late 1943 eggs were obtained from foot-long mature adults. From this initial stock and further egg imports, kokanee have been introduced into a number of California lakes.

The major "bottleneck" in the kokanee program has been the uncertain supply of eggs. The department has had to depend heavily on other states for them. Nearly 70 percent of the 1,300,000 kokanee planted during the 1958-59 season were obtained from eggs received from out-of-state. The remaining eggs were procured from Donner Lake, Millerton Lake, and Lake Arrowhead.

Efforts are being made to find a suitable permanent source of kokanee eggs in California. The key to success may be traps on tributary streams such as at Chatterdown Creek, Shasta County. Here the eggs are obtained from trapped kokanee without the time consuming lake seining operations which have often been necessary in the past.

Plankton Feeders

Kokanee are primarily plankton feeders. Their food consists of small aquatic insects, water fleas, freshwater shrimp, and other small organisms found swimming or floating free in the water. Because of their feeding habits, kokanee do well in some reservoirs in which severe fluctuations of water levels limit the production of bottom foods.

When mature, kokanee in California are usually 10 to 16 inches long and weigh one to two pounds. In some lakes (for example, Donner Lake) they grow considerably larger. Spawning usually occurs during the third or fourth year of life, although there are records of two- and five-year-old spawners. Kokanee normally spawn from September through December in gravel areas along the shorelines of lakes, possibly to considerable depths, as well as in tributary streams. Like all Pacific salmons, kokanee die after spawning.

At Donner Lake State Park, Nevada County, kokanee can usually be seen spawning in Donner Creek in November and December. This activity has become quite an "off-season" tourist attraction in the park. Lake-spawning kokanee can often be observed from the boat docks along Donner Lake during the same period.

Deep, Cool Lakes

In their native range, kokanee are typically inhabitants of large, deep, cool lakes; however, they have

achieved surprising success in some rather different environments in California. For example, kokanee were introduced into Shasta Lake in 1951, largely through the efforts of Henry E. Clineschmidt, then president of Kamloops, Inc., and presently a member of the California Fish and Game Commission. Today, Shasta Lake probably has the largest kokanee population of any lake in California.

In Millerton Lake, a large, lowland, warmwater, fluctuating reservoir in the Central Valley, the survival of planted kokanee is quite high and growth is excellent, with three-year-old fish attaining a length of 15 inches or more.

In Idaho's famed Lake Pend Oreille, kokanee are so plentiful that they support a commercial fishery as well as a sport fishery. They are also reported to be utilized as forage by the large Kamloops rainbow trout there. Kokanee has been suggested as forage for lake (Mackinaw) trout, and it would seem that this combination might be highly effective. In California, these two species occur together in both Donner and Tahoe Lakes, but it is still unknown whether kokanee are being utilized extensively as forage by lake trout in these waters.

WATERS PLANTED WITH KOKANEE IN CALIFORNIA

Water	County	Year first planted	Spawning population established?
Salt Springs Reservoir	Amador	1941	Yes
Strawberry Lake	Tuolumne	1944	Yes
Waterhouse Lake	Tuolumne	1944	No
Echo Lake	El Dorado	1944	No
Donner Lake *	Nevada	1944	Yes
Lake Tahoe	El Dorado/Placer	1949	Yes
Shasta Lake	Shasta	1951	Yes
Lake Almanor	Plumas	1951	Yes
Eagle Lake	Lassen	1952	No
Lake Britton	Shasta	1953	No
Don Pedro Reservoir	Tuolumne	1953	No
Topaz Lake	Mono	1954	Unknown
Bucks Lake	Plumas	1954	Yes
Gold Lake *	Sierra	1954	Yes
Independence Lake *	Sierra	1955	No
Lake Arrowhead	San Bernardino	1955	Yes
Millerton Lake *	Fresno/Madera	1956	No
Lower Twin Lake *	Mono	1958	Yes
Upper Twin Lake *	Mono	1958	Yes
Florence Lake	Fresno	1959	Unknown
Huntington Lake	Fresno	1959	Unknown
Lake Mendocino	Mendocino	1959	Unknown
Icehouse Reservoir *	El Dorado	1960	Unknown

* Waters planted in 1960.

Fisherman's Viewpoint

From the fisherman's viewpoint, kokanee have both good and bad attributes. Their tendency to go into relatively deep water during the peak of the fishing season, and thus play "hide and seek" with the summer angler, certainly does not create an ideal situation. At such times, deep trolling with multiple flashers and a small spoon or baited hook, or still-fishing with salmon eggs, are the favored methods for taking kokanee. However, it is often a long time between strikes, unless the angler is fortunate in locating and staying with the rather compact schools of fish. In the spring, and again in the autumn, when surface water temperatures are cool, kokanee can be found feeding near the surface and angling is much better. At such times fly fishing can often be very productive.

Among the kokanee's virtues are the fact that they are an excellent food fish, and many anglers who have eaten them prefer them to trout. Also, when taken on fly or light spinning tackle, kokanee have a surprising amount of fight for their size.

Special Tackle

Mention should be made of the special tackle employed by some kokanee anglers. Trolling gear is often rigged with an elastic band between line and leader to ease the strike, because kokanee have soft mouths and a sudden, hard pull can easily dislodge the hook.

Some bait fishermen, particularly at Lake Almanor, resort to a method called "sugar cubing" to reduce the chances of a "sinker strike"; the theory being that many times kokanee hit the sinker instead of the baited hook. A sugar cube fastened to the leader with a rubber band replaces the sinker. Once the line is in the water, the sugar cube dissolves and the bait floats free, leaving it the prime attraction to any fish that might come close to investigate.

At present, the best kokanee fishing lakes are Shasta Lake, Shasta County; Gold Lake, Sierra County; Donner Lake, Nevada County; Lake Almanor, Plumas County; and Lake Arrowhead, San Bernardino County. Other waters, such as Millerton Lake, Fresno County, and Salt Springs Reservoir, Amador County, produce spotty fishing, with good catches made by anglers who know how to fish for kokanee and are present at the right time and place.

Long Bow

Manitoba, Canada, just announced its first nonresident archery deer season: October 7 to 15.

In Canada they must use a long bow with a draw weight of at least 45 pounds at 28 inches and arrow heads of seven-eighths of an inch or more in width.

Barbed, poisoned and explosive heads are not allowed, nor is shooting from a vehicle.

An interesting point concerning the hunt is that the archer's name and address must be on each arrow shaft.

The chameleon was supposed to be able to perform such prodigies of endurance that the Greeks were moved to honor him by calling him "chamaileon"—little lion.