State of California

Memorandum

Beland
The Resources Agency

To J. Heinz

To : Letts Lake, Colusa County Files

Date: August 3, 1981

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From : **Department of Fish and Game**

POB

Subject: Sampling Survey and Management Recommendations

On July 28/29, 1981, a gill net and seining survey was conducted on Letts Lake to document the status of LMB and SMB introduced into the lake in August, 1980. We were particularly interested in locating a 1981 year class of the centrarchids, if present.

On the sampling dates, surface water temperatures in Letts ranged from 76°F in the mornings to 82°F by late afternoon. Maximum lake depth recorded was 20 feet. Below is the temperature/dissolved oxygen profile taken on July 29 at 10:00 hours in the middle area of the lake.

Depth (ft)	Temp (°F)	Dissolved O_2 (mg/l)
0	77	10.0
5	77	9.5
10	76	9.4
15	76	5.8
20	76	4.5
bottom	75.5	4.5

A total of five seine hauls were made on July 28 using a 100 foot beach seine with a bag constructed with ¼" mesh. The seine produced an abundance of small GS (3/4 to 5 inches in length), three catchable RT (8 to 10 inches long), two LMB (10.1 and 8.3 inches f.l.), two SMB (11.9 and 11.0 inches f.l.), and numerous crayfish. All species of fish were robust and in apparent good health. All of the sampled bass contained punched caudal fins indicating they were from the 1980 plant.

Two sampler monofilament gill nets were fished from 1830 hours on July 28 to 0800 hours on July 29. The nets had a combined length of 250 feet. One net was fished at a depth of five feet, the other at 15 feet. One net was fished perpendicular to the north shore of the lake, the other was fished parallel to shore along the east/west axis of the lake.

The gill nets contained a staggering number of GS, ranging in size from 3.0 to 7.5 inches (f.l.). The two nets produced a total of 62 pounds of GS (estimated number = 400 fish). The GS were in prime, robust condition and were actively spawning in the littoral areas of the lake during the evening period.

Also present in the nets were 3 RT (8.5 to 10.0 inches f.l.), 3 LMB (8.0, 8.0 and 10.3 inches f.l.), and 14 crayfish. The two smaller LMB were unmarked and were likely fish from the 1980 plant of LMB fingerlings, The largest LMB contained a caudal punch. No young-of-the-year bass were recovered.

Recommendations

1. The survival and growth of our 1980 plants of bass is confirmed, but we did not monitor any recruitment from these fish. The high numbers of GS may be overwhelming the relatively small number of LMB and SMB stocked to date. More bass should be transplanted in spring, 1982, prior to the spawn.

2. High prevailing water temperatures throughout the lake makes this water questionable as a trout fishery after the spring period. Trout are doubtlessly surviving in conjunction with the several major springs in the basin, but are severely limited in foraging activity by the hot water. Stocking of catchable salmonids should not be extended beyond the first week in July.

3. More predators are definitely needed in Letts Lake at this time. The littoral zone has been essentially taken over by the GS. The introduction of CCF at catchable-plus sizes may aid in providing predation in the littoral zone. I recommend moving CCF from the November rescue at Black Butte Lake, or from hatchery stocks if the rescue procurement fails. The initial stocking of CCF should be at a high rate (75 lbs/acre) to maximize their predatory potential. This rate amounts to about 3,000 pounds of fish, preferable of catchable-plus fish.

4. The prevailing ecology of Letts Lake is closer to that of a warmwater system with limited, seasonally cold water, than it is to a cold water system with warm littoral areas. Although political pressure may not favor it, our emphasis at this water should be to develop a balanced warmwater system. The future introduction of crappie and redear sunfish should be considered as displacement species for the GS. A limited (spring) put-and-take fishery for catchable RT could be continued, but should be recognized as a temporal fishery which cannot sustain high use through the summer months.

ORIGINAL SIGNED BY
RICHARD D. BELAND

FOR

John I. Hiscox
Fishery Biologist

cc: Ryan, Beland, Hiscox, Mike Dennis (USFS-Stonyford), Wdn. Chris Wright, Emil Ekman (USFS-Willows)

JIH:ss

bad thing to say in a field report that goes to outside + our HQ. This may kill the WW program. What is the political pressure? RPB