

**Memorandum**

To : Files, Letts Lake, Colusa County

Date : June 29, 1984

From : Department of Fish and Game - Region 2

Subject: Fisheries Survey of Letts Lake

On June 13 and 14, 1984, our annual fisheries survey was conducted at the subject water. Of prime interest in these surveys is the relative abundance and health of the SMB, LMB and CCF populations introduced in 1980, as well as the vigor of our continuing catchable trout program. Sampling effort included a creel census on June 13, a series of beach seining hauls at pre-determined locations and an overnight gill-net set at standard sampling sites. Emil Eckman, USFS biologist with the Mendocino Forest assisted with the project.

Below is a summary of information collected.

Creel Census

A standard creel census was conducted by boat from 1020 hours to 1210 hours on June 13. All anglers were contacted during the survey. Additional contacts were made in the campground with anglers who had completed their effort. Only active angler data is summarized below.

A total of 34 anglers had completed a total of 59.2 hours of angling when contacted. A total of 62 fish (all RT catchables) were seen. Catch/angler hour amounted to 1.05, a good figure. All trout were in good condition with obvious weight gain since their June 4 planting. Although there were reports of BK being taken (mid-May plant), we saw none in the creel. A total of ten stomach samples were taken from the creeled trout. All fish contained insects and/or insect parts. One fish contained crawdad parts. No fish contained any GS or other fish parts.

Beach Seining Samples

A total of ten beach seine hauls were made on the afternoon of June 13. The sample sites included the six standard sites monitored every year.

Species taken in the various seine hauls included LMB, SMB, RT, BK and crayfish. Fewer SMB were seen than in past years. Juvenile LMB occurred in numbers equivalent to surveys since 1982. Young-of-the-year centrarchids were numerous in weedy areas, but were still in the yolk-sac stage and unidentifiable as LMB or SMB.

RT were far more numerous in the seine hauls than in past years, and the BK was a slab-sided specimen in prime condition.

Crayfish were less numerous than in past years and were found collectively hiding amid logs, stumps or any available cover. Possible enhancement for this species is discussed below.

No GS were seen in any of the seine hauls, nor were any CCF taken.

#### Gill Net Samples

A total of three, 150-foot monofilament sampler gill nets were fished overnight from 1730 hours to 0815 hours. Mesh sizes ranged from 1/2 to 2 inches. Nets were fished in standard locations on the surface, at mid-depth, and on the bottom.

A total of 37 RT, 3 BK and 1 CCF were taken in the three nets. All BK were taken in the bottom set. Fish ranged from 11.8 to 12.9 inches and were in excellent condition. RT were taken in all nets and ranged from 8.4 to 11.1 inches in length. Condition on the RT was also good. The CCF was also taken from the bottom set and measured 14.5 inches. The fish was in prime condition with a full gut and no external parasites.

Stomach samples from five RT and three BK showed insects and insect larvae to be the primary diet items. One BK contained crawdad parts.

#### Limnological Samples

Below is a summary of monitored parameters on June 14, 1984 at 1030 hours.


Air temperature: 72 F  
Water temperature (surface): 64 F  
(10 ft.): 63 F  
(bottom 19 ft): 62 F  
Secchi Disk reading: 11 ft. 6 in.  
Dissolved oxygen (surface): 9.0 ppm  
(bottom): 8.0 ppm  
PH reading (surface): 9.4  
PH reading (bottom): 8.5

The limnological readings are essentially unchanged from past observations for June, except for water clarity. Water clarity continues to rise at Letts Lake, with this year reading representing a 13% increase over the 1983 data, and a 67% increase over the 1980 and 1981 data. Our previous hypothesis that reduced GS numbers have triggered an increase in zooplankton is still a viable scenario.

One possible negative aspect to the increased water clarity is the occurrence of substrate moss and algae around the lake. This year marks the first time we have observed these species in depths to five feet in the littoral zone.

Conclusions: Recommendations

- 1) Stocking allotment for Letts Lake should remain at 15,000 fish/yr. Encourage use of BK as available.
- 2) Include supplementary plant of 1,000 CCF as available in 1984 or 1985. Catch rate on original plant was excessive, may be too few three year olds left to successfully maintain the population.
- 3) Continue to monitor SMB population. Supplemental plant may be required in future.
- 4) Emphasize habitat improvement project for crayfish, CCF and immature centrarchids. Work with USFS in placement of rock piles in selected areas.
- 5) Continue to monitor weed and algae encroachment. Possible future need for weed or algae control.
- 6) Leave fishing regulation (voluntary size limit) signs in place. Decrease in numbers of immature SMB may be helped by catch-and-release emphasis.
- 7) Include experimental plant of 10/lb. RT in fall (marked) to test RT holdover.

  
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cc: Ryan, Beland, Emil Eckman, Wdn. Wright

JIH:ds