

Lakelse Programme - 1950.

As a follow up of last years programme the main objective of the work on Lakelse is to develop methods of obtaining a sustained yield of sockeye salmon at current or higher levels. At a future date a series of changes in the environments of the fish will be instituted and the effects of these changes calculated. Before any changes are put into effect, however, it is first necessary to learn more about the natural production and its controlling factors.

Lake Work - 1949

In the 1949 season netting was carried out during each month from June to November. Plankton collections were made at regular intervals as were records of water temperature and dissolved oxygen concentrations. Meteorological data were kept throughout the period. Two new projects were commenced last year, namely, the analysis of lake water for phosphate and nitrate content, and the attempted capture of young sockeye in the lake.

Lake Work - 1950

In 1950 it is planned that all the above phases will be continued with the addition of a creel census. More effort will be put into the collection of young sockeye in the lake and it is hoped that more satisfactory methods of chemical analyses will be forthcoming. The lake work this year will be expanded to include at least 10 months of 1950.

The suggested studies for this year are as follows:

I. Plankton Studies - using plankton net and a new plankton trap.

1. Sample every 2 weeks at stations 3, 5, and 6 during ice cover.
 - total verticals only plus monthly stage hauls at Stn. 3.
 - Sample ^{every 2 weeks} weekly at Stns. 1, 2, 3, 4, 5, and 6 during open water.
 - total verticals and stage hauls at Stn. 3, total verticals elsewhere, use conventional plankton net for these collections.
2. Sample once per month at all stations with the new trap. Stage hauls at Stn. 3 only.
3. It is expected that plankton analyses will be carried out at least partially while in the field with the use of a binocular microscope for enumeration, and a hand centrifuge for volume determinations.

II. Fish Population Studies (other than salmon).

1. Netting will be carried out as frequently as possible at Positions 1, 3 and 4 during ice cover. Other experimental sets may be made in the south-west corner of the lake. No more than 3 nets will be used at one time, the best appears to be 2, 3 and 4 inch meshes.

II. Fish Population Studies (other than salmon)(cont'd)

2. During the clear water period 8 sets per month will be made and all 6 positions will be sampled equally.
3. Length, weight, sex and scale data will be kept for all fish netted. Stomach samples will include those from all fish caught between February and July and between September and ice cover. For the summer months only those stomachs from every fourth of each species of predator fish caught will be taken.
4. A creel census of at least the main fishermen will be kept from May to the middle of September. A percentage will be sampled for length, weight, sex, scales and stomach. All data pertaining to fish caught by fishermen will be recorded.

III. Young Sockeye Collection

1. Greater effort will be put into the capture of young sockeye in the lake this year through the use of traps and seines.
2. Lengths and stomachs will be kept along with scales, and a sample of whole specimens will be retained.
3. This portion of the work will extend through the months of clear water.

IV. Chemical Analyses

1. Oxygen analysis by the unmodified Winkler Method will be continued as in the past - monthly analysis of the deep, central and surface waters at the deep-hole station.
2. Similar samples will be analyzed for phosphate and nitrate content along with samples from Lakelse river and Williams creek. These analyses will be carried out monthly throughout the clear water period only.

V. Thermal Studies

Water temperatures will be taken concurrently with plankton sampling - using a reversing thermometer during ice cover and a shallow B.T. during clear water.

VI. Meteorological Conditions

1. Precipitation, cloud coverage, wind direction and velocity will be recorded daily at 8 AM and 6 PM.
2. Lake levels will be read daily at 8 AM.
3. Maximum and minimum air temperatures will be recorded daily at 6 PM.
4. Daily sunshine records will be kept.

VII. Analyses.

As well as plankton analyses it is planned that all fish stomach analyses may be done in the field.

Fence Construction

Upon completion of the fry migration work at Scully creek (about May 15) Broadhead and two helpers will commence preparation of the Lakelse river fence site. This will involve clearing an area on both sides of the river, building of trails, etc., and will continue until such a time that water levels allow a switch of effort to the Williams creek fence - (June 10 - 20). They will then dismantle all remaining parts of the main Williams fence, collect piles and get the necessary lumber on the site so that Ragdale can commence construction directly upon arriving at the lake on June 15. Broadhead and one helper will assist construction here until July 1 - 15 at which time they will turn their efforts to ordering and transporting lumber and supplies down the Lakelse river to the fence site.

On completion of the Williams fence, July 15 - Aug. 1, Ragdale and a crew of (4?) will immediately commence construction of the Lakelse river fence. Broadhead and helper will assist in construction until the adult run at Scully creek requires their efforts there. Broadhead's second helper will carry on with Ragdale till about Aug. 15 at which time he will become an assistant in the operation of the Williams creek fences. The fence crew will carry on as late into the fall as water conditions permit (Sept. 15 - 30) in order to get as much as possible of the river fence constructed.

In addition to the fences, some repairs should be effected on the river yearling fence, the old adult fence should be dismantled and a small cabin will be required on the Lakelse river for fence operation crews in future years. Should high water force a delay in construction of fences in the spring or fall, Ragdale could profitably be switched onto these jobs.