

Investigation of Fish Kill in QUAMICHAN lake, Vancouver Island.

164-u-1

On Thursday, July 31st a telephone message was received by the undersigned from Mr. Stewart, whose residence and property lies on the shores of QUAMICHAN lake in the Duncan area. He reported that a number of dead and moribund trout were to be found around the shores of the a/m lake. Several other reports and later, newspaper accounts of this unusual kill of trout came to my attention. On Thursday, August 7th I visited the lake and made an inspection of a number of beaches and shore areas, taking repeated temperature readings from site to site

The temperature of waters at each of seven points examined was 74 degrees F at the surface, but it is very likely that the surface waters of this lake have been significantly warmer at times during his last six weeks of extremely warm and dry weather.

The waters were, at each location examined, very turbid; algae of a variety contributing mainly to this condition. Although no Secchi's reading was made, I doubt whether a reading in excess of 5 feet could have been recorded.

Dead fish were in evidence at every site examined. Cutthroat trout, Sculpins (sp ?) and threespined Sticklebacks were observed dead both on the shores proper and floating in the lake. There were no "fresh" dead trout observed but several Cottids and most sticklebacks appeared to have been freshly dead. Many sticklebacks were observed swimming and darting about in a state of distress and muscular spasm. These fish showed every symptom of real disease from swimming aimlessly with nose out of water to mad gyrations and whirling "sickness". Many lay just beneath the surface, on their sides with only a trace of opercular movement. Discussion with a number of persons who were witness to these circumstances reveals that the trout, before and during their period of mortality were acting in the same way, some of them having been noted to have driven themselves ashore while so afflicted. Many trout were observed travelling very slowly in schools close to shore, a habit which has never before been attributed to trout of this lake (or any other for that matter)

Informants stated that the dead trout showed not apparent external signs of damage, neither was there any evident change in "normal" color or shape. Examination of the remaining trout when I visited was not possible as decomposition had progressed so far as to prohibit a tender stomach such as mine the pleasure of intimate dissection. No small trout, dead or alive have been observed.

There is no question that a great number of fish remain, of the three species mentioned. Many persons, alerted to the unusual conditions have made observations at the lake shore and all have noted usual mid-water activity such as jumping and surface feeding.

It is estimated that there were to be found about 20 trout for each 50 yards of shoreline at the peak of the kill. Quamichan lake has a perimeter of 10,300 yards and assuming that dead fish were distributed around the entire perimeter, a visible loss on the shores of over 4,000 trout might be possible. Sticklebacks occurred in far greater numbers per 50 yard section of shore, an estimate of in excess of 30,000 being a reasonable figure of observable loss. Cottids were not visibly numerous and any estimate of their numbers lost would be sheer conjecture.

SUMMARY Many of the oldest inhabitants spoken with (30 to 45 years on the lake) can bring to mind no such broad and similar kill of fish. In my experience I have seen nothing quite like it. I do not think that the fish were killed through lethal, high temperatures as Somenos lake at about the same elevation and similar in depth had no reported kill although the surface temperatures at the day of examination were the same as found in Quamichan lake. Furthermore, it seems most unlikely that a factor which at one time or for a short period killed trout AND other species should CONTINUE to kill sticklebacks were it a thermo-physical phenomenon. I believe that a summer-kill in the conventional sense should be ruled out for the facts and circumstances do not fit. The only explanation I can give, and that with the flimsiest of circumstantial evidence, is that the fish which died succumbed to internal disease which flourished due to heat-induced resistance loss of the host. An outbreak of bacteria similar to the Holden lake kill in May 1956 COULD account for the loss in Quamichan lake in 1958.

Quamichan Lake - 1958