

Fish, Frederic, and Robert B. Rucker. "Pollution in the Lower Columbia Basin in 1948- With Particular Reference to the Willamette River." Special Scientific Report: Fisheries no. 30. Washington D.C.: United States Department of the Interior: Fish and Wildlife Service, 1950.
(Reviewed by Alletta Brenner)

This paper gives a basic survey of the water quality in the Willamette River and its major tributaries during 1948. Beginning with an overview of water quality problems, historically and at the time, the document then goes on to record measurements of water temperature, dissolved oxygen, B.O.D. (Biological Oxygen Demand), and conductivity, throughout the course of the river. These measurements, taken during the period of September to October of 1948, are displayed on a series of tables and graphs and compared throughout the report to measurements taken earlier in 1944 and 1945. Accompanying these is a series of written statements contextualizing and evaluating the data, and drawing conclusions on the water quality of each major section of the Willamette and each of its major tributaries.

A few major points outlined in the survey are thus: There is significant enough main-stem pollution in the Willamette to cause an oxygen block during low-flow periods, and to adversely affect aquatic life all year round; The pollution load of the Willamette river appears to have increased significantly in the period between 1944 and 1948; too little information is known of the circumstances that result in an oxygen block to concretely understand its impact on migratory fish; and finally, further research of Willamette river pollution should be a top priority.

Critique

Overall, this report provides a useful tool in the evaluation of the historical state of pollution in the Willamette river basin prior to any major efforts to clean it up. Aside from the data given, it also contains several bibliographic references to other sources that may be quite helpful. On the other hand, I give the following critiques.

First, though the report references other data sets that seem to provide a more complete view of “worst case scenario” pollution in the river, this report uses samples taken during the fall, when river flows are up. As a result, the picture they give may not be accurate in terms of the significance of the river's pollution, as it is the worst case [the lowest summer flow] that is most important in terms of impacts on overall river health. Second, the report is based upon a single data set for each location, taken over a period of two months. Consequently, the data cannot provide insight into the whole picture of river pollution, as it fluctuates over the course of seasonal changes. Likewise, because the measurements for different locations in the basin were taken over such a long period, it may be more difficult to draw conclusions about the flow of pollution between sites, and its natural mitigation (i.e. due to oxygenation). Another problem is that the report only minimally references possible pollution sources, either point or non-point. This makes it difficult to contextualize the data and draw greater conclusions on the consequences of specific human impacts. Finally, while the report gives some reference to the

impact of pollution on fish, virtually no information is given on human health concerns and effects. This in itself may be an interesting insight into the way environmental degradation was viewed at the time.

[return to info sources page](#)

[return to home page](#)