

effect on the fish run, and system A, at the same time, provides means whereby the flood waters of the Fraser can be controlled. I might say as well that the research that is being done, as far as the problem of fish passage by power and other dams is concerned. It will go on independently of what the report of the board is, or what the board recommends, or whether the board is in existence or not.

Mr. DRYSDALE: There is an expenditure on that research. Approximately how many people are devoted to it, and how much money is being put into it?

Mr. MACLEAN: I must leave that question to Dr. Pritchard.

Dr. PRITCHARD: We now have on the Pacific coast eleven biologists, ten engineers and twenty seven technicians doing nothing else but trying to solve the problems involved with the impact of industry on the fisheries. Ninety per cent of those people are spending their time trying to draw up measures to overcome the effects of power development. This is just one aspect. The fisheries research board of Canada is also carrying on certain research now on the physiological phase, considering the behaviour and capacity of the fish to swim against and withstand the currents. This is basic information which we must have. In addition to that we are closely bound to all the scientists in the United States in the Pacific northwest states, and the experiments are arranged in such a way that there is no real duplication, because we all regard this as an urgent situation.

Now, in toto; there is something in the neighbourhood of 75 scientists and engineers working on this power problem, and they are spending approximately \$3 million a year on research on this problem alone. That is regardless of anything that happened here. We consider this as an ad hoc problem. It is a serious one and we have to get at it, but nevertheless, the research still has to go on. In that connection I might point out that we had some mention in this committee, Mr. Chairman, of Robertson creek—that is on the west coast of Vancouver island—where there is now being built a second spawning channel to test the effects of creating artificial spawning grounds, and a test flume for Dr. Brett's physiological work.

We have as yet no final solutions, but to date we are getting good information which we think, and we certainly hope, will enable us to look askance at a dam over 100 feet and say, "Well, we can overcome that." This is going on all the time, because these dams are coming, not only in the Fraser, but elsewhere.

With regard to the Fraser river basin board, I think the major fact is the one which our minister stressed, Mr. Chairman. It has had this effect, that the fisheries scientists have convinced the members of the Fraser river basin board that what we have been saying all along is absolutely true; in spite of press dispatches to the contrary and glowing reports of discovery, at the present moment there is no sound way of getting fish over high dams, either up or down, without serious loss.

Mr. DRYSDALE: The point that worries me is that in the report itself, on page 132, it says:

It will very likely take many years to find an acceptable solution to the problem of transporting anadromous fish over several barriers in one stream, so that complete freedom to develop the Fraser river and its tributaries for flood control and power production seems to be some distance in the future while the need for flood control is urgent.

Then in the recommendations, No. 7 recommends:

That programs of fisheries research regarding the effects of dams and flow regulation on fish maintenance, and the possibilities and relative efficiency of various means of artificial propagation be accelerated.