HYDRO ELECTRIC POWER vs
FISHING INTERESTS.

In the Vancouver Province of the 29th ulto. (Dec. 1955) and 1st and 2nd (Jan. 1956) inst. appeared articles written by Norman Hacking reporting on hydro electric development versus the fishing industry, especially with regard to the proposed damming of the Naas river.

For many years I operated a cannery on that river and perhaps am more familiar with its situation than most participants in the fishing industry. From personal knowledge I have no hesitancy in declaring the hydro electric proposal, if permitted, would absolutely kill the Naas river fisheries.

I also know what disasters have happened to the fisheries of other Pacific Coast rivers and the indifference displayed by governmental authorities to the preservation of the national assets committed to their care. With the single, and brilliant, exception of the International Pacific Salmon Fisheries Commission I cannot recall any successful constructive accomplishment of these officials Canadian or American, federal, provinicial or state. They passed regulations restricting the catching of salmon; they installed hatcheries which in 75 years produced such trifling results that in many instances they abandoned their operation; they built ladders and lifts to convey fish over dams in salmon rivers; did so without knowledge of whether they would function properly; they made no provision for fingerling salmon to successfully pass the dam on their descent to the sea; and today they have to admit they are no closer to a solution than they were when they started. They have theorized from generation to generation as to what has happened, is happening, or is likely to happen in future years, but admit they have reached no satisfactory conclusions.

What is more surprising has been, and still is, the apathy of those, both fishermen and packers, toward the preservation and enlargement of the industry on which their financial livelihood depends. In case after case they have seen their operations imperilled by natural causes, manmade obstacles, or neglect, and they made, and make, no effort to halt or overcome disasters.

From 1882 to 1892 the Sacramento river canned salmon pack declined from 200,300 cases to 2,281 cases, as a result of hydraulic mining having buried the main spawning grounds under layer on layer of mud, gravel and detritus. The danger was ignored by everybody until all hope of recovery had passed.

In its heyday the Columbia produced 629,400 cases of Chinook salmon, most of which was procured from the Upper Columbia, Snake and Spokane rivers runs of April, May and June. Irrigation dams and ditches and later hydro electric dams practically exterminated the up river salmon runs, and again those most interested lay back supinely, doing nothing to prevent disaster. Today they admit the Columbia river fishery must be considered an industry of the past; its present worth insignificant compared to hydro electric development's value.

On the Fraser river the Hell Gate catastrophe of 1912-1916 almost elimnated all the upper river salmon runs. For a third of a century following the federal fishery authorities did practically nothing but talk and the commercial interests were equally as apathetic as the Sacramento and Columbia rivers operators had been when their interests were at stake. What the International Pacific

Salmon Fisheries Commission has accomplished on the Fraser river in the past ten years has been magnificant, and clearly demonstrated what opportunities had been over looked and ignored by their predecessors, official and commercial bodies alike.

Dams were built on Quesnel and Adams rivers to aid mining operations and almost extinguished the sockeye salmon runs to those areas. The Allouette sockeye salmon run was completely destroyed by power development and other Fraser river spawning areas, such as Bridge river, have also been adversely affected. None of these inroads on the fishery resources were complained of by the commercial interests prior to construction; probably because they were not consulted by the fishery authorities.

When the Nechako River hydro electric proposal was up for consideration the Ottawa fishery authorities ignored the adverse resolutions of the International Pacific Salmon Fisheries Commission and the Fisheries Council of Canada and aimed instead at a compromise. The fishing and packing interests took no decisive steps to safeguard their investments, and the press, although urged to act, also soft pedaled opposition. No wonder powerful hydro electric interests, having opened the door for the Aluminium Company of Canada, now consider themselves entitled to any other river waters they desire to secure.

Their attitude and expectations are clearly set forth in Bruce Hutchison's book, The Fraser, especially his remarks on pages 338 to 343, Chapter 22, The Future of the River. That this is no idle speculation is proved by the announcement last week of Philip Gaglardia, Minister of Public Works, in the British Columbia Government, that his government has been approached for a permit to dam the Fraser at Moran, near Lillooet, and had the proposal under consideration.

As Bruce Hutchison pointed out, such a dam would be 7 30 feet in height and would create a lake five miles wide and extending past the mouth of the Chilcotin river, for 150 miles up river to Quesnel. This would be only the first of a series of dams visioned. "Beyond Quesnel" Mr. Hutchison added, "a third and a fourth dam could be built close to Cottonwood Canyon, and at Fort George Canyon, ponding the river back to Prince George. Instead of a river a narrow lake would bisect the Cariboo plateau."

The viewpoints of the fishing and packing interests submitted to the Gordon Economic Commission, as reported by Norman Hacking, dealt with aspects of fishing and packing operations that have no bearing on the real problem. The points stressed would be of no use whatever if there were no salmon available for packing. As I see it such availability is absolutely and completely tied to the water conditions and flow of the rivers and streams which the salmon ascend to spawn, and this phase of the situation has always been ignored by governmental authorities and industrial operators alike.

Time after countless time Nature has demonstrated that abnormal dry spells, manmade dams, or other contrivances, have prevented adult salmon from attaining their spawning grounds with the result that runs have been decimated or destroyed.

Time after countless time Nature has also demonst ated that flood inundations have destroyed salmon spawn after it had been deposited in the spawning beds.

The International Pacific Salmon Fisheries Commission have reported the change of water temperatures effected by dams is a major consideration as regards the spawning results.

"Protection of the salmon resource require that flow in the residual river be of such depth and velocity that sockeye can swim up the stream successfully and without undue delays. In addition it has been considered necessary for the mean temperature of the river to be below 68 F if the sockeye are to find tolerable conditions." High river temperatures may have lethal effects on the salmon, at all points both above and below the dam sites.

The fishery authorities admitted diverting the Nechako waters to Gardiner Canal would reduce the Fraser river water flow at Prince George by 55%. This was confirmed by the International Pacific Salmon Fisheries Commission in its review of the Sockeye Salmon problems in the Nechako river watershed. The report said:

"During the period of migration the sockeye enroute to the Stuart watershed will have to swim 55 miles up the Nechako in an average of 40% less flow than was formerly available. Sockeye migrating to the Nautley watershed must swim an additional 58 miles in the Nechako river reduced an average of 82% in flow during the migration period."

Engineers who made a study of the situation in the Lower Fraser river valley figured the reduction in flow from this same cause would be about 20% in that area. The effect of dams such as are proposed for both the Fraser and Naas rivers has not yet been reckoned but there can be little doubt the reduction in water flow in both instances would be enormous.

In the consideration of the effect of dams in the water impounded areas it is amazing that no attention whatever seems to have been, or is being, given to the alterations inevitably made in the physiognomy of the affected territory. Existing spawning streams at current levels would be entirely obliterated and buried under depths of water varying between 1 and 730 feet in the case of Fraser river and corresponding depths on the Naas.

Sockeye salmon deposit their spawn in streams that are tributary to lakes. The depth of water in which their eggs mature is under 30 inches and if this depth is greatly increased hatching functions are interfered with or, if too deep, destroyed. Other species of salmon spawy either in the main river or immediately adjacent tributary streams and in such cases any decided increase in the water levels will spell disaster.

Finally any change effected by dams on the Fraser and Naas rivers must be detrimental to the salmon industry and it is idle for politicians, fishery authorities, commercial interests and the press to proclaim these rivers can develope hydro electric power and still retain their salmon resources. It is a case of giving one or the other the preference. The only possible alternative is to confine power development to rivers that carry no appreciable runs of salmon, though even in such instances caution must be exercised and permission refused if water diversions which would ensue affected the main river's water flow.

The sockeye fishery is our greatest salmon asset but the other species, especially the humpback, have also to be considered. Dams such as are proposed for the Fraser and Naas almost certainly would destroy all the spawning areas of these secondary species. How it is that this phase of the damage has escaped emphasis from the Commercial operators certainly passes understanding. If it is not stressed strenuously now the operators will deserve the fate that confronts them.

There is yet another aspect of this situation deserving of consideration. This is the advisability of developing hydro electric power in these districts at all at the present time. Edible food resources are, and always will be, valuable, and those, such as our salmon resources, should be fostered and preserved. But with power development the need, in British Columbia, is not imminent, and possibly may never be as far as concerns water as the producing agency. Scientists are already proclaiming that peace time development of atomic power eventually will displace many other forms of energy, including water power. Caution should preclude our adoption of hasty action now. No crying need exists at present for the proposed Fraser and Naas rivers undertakings while to absolutely destroy our salmon resources for a problematic gain in power borders on a criminal dereliction of the obligations we owe the nation and the world.