

Mr. DOUCETT: Is there anything defining the responsibility in respect of navigable waters such as Lake Ontario, where there are great inroads which take away buildings, transportation arteries and so on? In the past there has been great argument as to who is responsible and it generally goes on until some houses disappear, a road disappears or something like that. It also happens in Lake Huron. In those two places, Lake Ontario and Lake Huron, there has been great erosion of huge quantities of soil and there are places in which it goes inland probably a quarter of a mile.

Mr. HAMILTON (*Qu'Appelle*): It is very difficult to give an answer. As I am not an expert I will have to qualify my answer. Generally speaking, however, the resources do belong to the province and we have responsibilities, for instance, for navigation. So there is a complementary responsibility. There is another factor. Certain things are just caused by nature for which no one is responsible; it is an act of God, a subject in respect of which I do not think the constitutional lawyers ever decided—as to who is responsible for an act of God.

I think you all know that Lake Ontario is settling a little in the east end. This causes a change in the water levels. So far as I know, no government, either federal, provincial or international, accepts the responsibility for this shifting of the earth's structure at the bottom of the lake. This is a question which is away over my head.

Mr. DOUCETT: I have often wondered whether or not the pumping of thousands of tons of sand out of Lake Ontario changed the condition of the water and caused some of the erosion. I do not know; I am not an expert either. In the summer they go in there with barges and they take out large quantities of sand for building purposes and so on. From the standpoint of a layman it would appear that might change the general condition.

Mr. HAMILTON (*Qu'Appelle*): You are referring to an engineering aspect on which I am not an authority. Might I ask Mr. Patterson, who does the studies for me and who has done a remarkably good one recently, to speak on the general aspects of these questions in respect of the physical changes in a lake like Lake Ontario.

Mr. T. M. PATTERSON (*Director, Water Resources Branch, Department of Northern Affairs and National Resources*): Mr. Chairman, Mr. Minister, and members of the committee, with regard to the question which was just asked, as I understood it, it was as to what effect the dredging out of large quantities of sand from the lake bottom would have on the surrounding areas and whether or not it might cause additional erosion.

Mr. DOUCETT: Yes.

Mr. PATTERSON: Actually while the quantities of sand may seem quite large in a body of water like Lake Ontario or Lake Huron, they are infinitesimal. At the outlet of Lake Huron there has been considerable dredging and boring of sand and there has been improvement in the navigation channels through the lower levels. This dredging in the navigation channels has been done by the United States at their cost and after consultation with Canada. Based on studies which were made as to what effect that might have, they did put in compensating works in the river channel in the form of underwater dykes which were not in the navigation channel proper, but in other sections of the river, so that Lake Huron would not tend to lower due to the increased outlet capacity in the navigation channels. In so far as it has been possible to study that question, the effects of any work in recent years have been fully compensated for through the construction of these dykes and other means which have been taken.

The CHAIRMAN: Thank you very much, Mr. Patterson. I think we will have an opportunity to go into these problems in more detail at a later date when Mr. Patterson will be with us.