

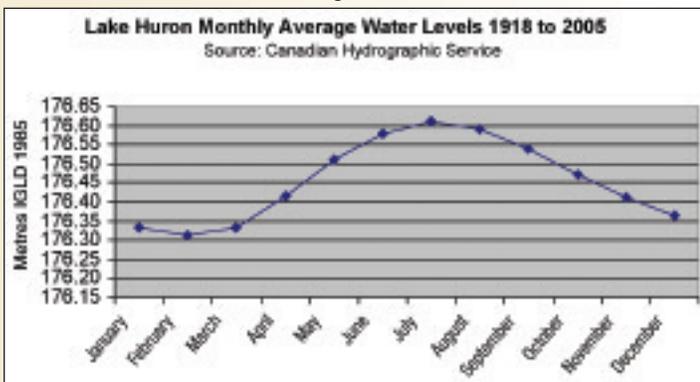
More Notes on Historical Context – The Islands of Georgian Bay (Part 2, Application)¹

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Important Water Levels²

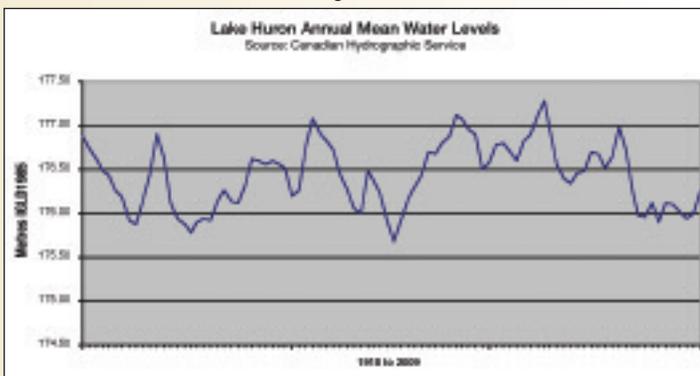
Normal water levels in Lake Huron have historically varied over two metres. The highest monthly mean recorded since 1918 is 177.50 metres (October 1986); the lowest is 175.58 metres (March 1964). Obviously, daily means have exceeded those monthly mean extremes.

Figure 1.



Seasonal changes are predictable as illustrated in Figure 1; yearly highest water levels typically occur in July and the lowest in February, with a range of about 0.3 metre. But the Figure 1 seasonal curve moves up and down in level from year to year, and there is no regular pattern to long-term changes, as shown in Figure 2. The long-term changes are generally due to climatic conditions.

Figure 2.



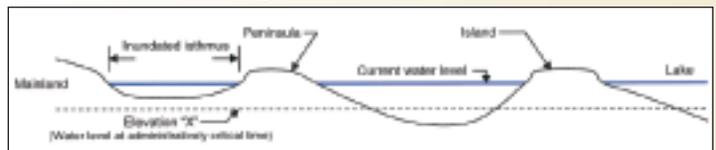
The changing water levels significantly affect any land bounded by Lake Huron, especially locations with relatively flat shores. Some shore areas are peninsulas in fact when water levels are low, but are islands in fact when water levels are high. The challenge is to determine which islands are in fact peninsulas that simply appear to be islands due to

higher water levels. For the purposes of this article, the effect of alluvial erosion and accretion will be ignored.

In answering the question, it is necessary to develop a 3-dimensional model for the particular site. The isthmus joining an island to mainland (or to another island) when water levels are low will be covered by water when water levels are high. To determine whether an island is a peninsula with an inundated isthmus, or simply an island in fact, a particular water level—the water level when administration of the land first occurred—is required to make the distinction, as illustrated in Figure 3.

For example, the islands north of Moose Deer Point (excluding the “Manitoulin Group”) and the adjoining main-

Figure 3. Schematic Profile



land were surrendered under the 1850 Robinson-Huron Treaty. Thus (as discussed in Part 1), at confederation, both islands and mainland were assigned to provincial administration. If the water level was high when a particular mainland township survey was done, some islands existing at that time will subsequently attach to the mainland as a result of low water levels. But because the survey was done at a high water level, the island remains as a geographic entity separate from the mainland township even when joined with the mainland at low water levels; the island does not become part of the mainland geographic fabric simply because a formerly inundated isthmus becomes exposed as the waters retreat. Similarly, if waters were low when the township survey was done, peninsulas that subsequently become separated due to high water levels remain as part of the mainland township fabric.

The critical date with respect to islands south of Moose Deer Point will be 5 June 1856, the date of the Treaty with the Chippewas of Lake Simcoe and Lake Huron. With application of the 1876 intergovernmental Pardee-Laird agreement (discussed in Part 1), the Province had jurisdiction to include in township surveys only those lands that were mainland at the time of the 1856 Treaty; the federal government could only deal with islands that existed at that date.

There is no single water elevation that can be universally applied. Jurisdictional issues between the federal and provin-

cial governments affect the Manitoulin Group of islands and the islands south of Moose Deer Point. As in the 1876 Treaty example, where the federal government has jurisdiction, the defining water level will be related to treaty dates and related intergovernmental agreements, as in Table 1.

Whether an island in fact is to be treated as an island or as a detached peninsula will depend on the water level of

Table 1. Treaty Date Water Levels

Treaty Date	Approximate Water Level (metres, IGLD1985)	Islands Affected
9 September 1850	177.0 [†]	Islands north of Moose Deer Point, except Manitoulin, Cockburn and Barrie
5 June 1856	177.1	Islands south of Moose Deer Point
5 October 1852	177.3	Manitoulin group

Source of water level data prior to 1860: Quinn and Sellinger, 1990; for 1862: U.S. National Ocean and Atmospheric Administration (Harbor Beach gauge).

[†] The closest available information is the monthly means of September 1848 and September 1852 (Quinn and Sellinger, 1990); the average of those monthly means is 177.0 meters (IGLD85, or 176.7 IGLD1955).

Lake Huron at the time of the particular Treaty (as in Table 1) or, as discussed above, at the time of the original survey in some cases. The circumstances of every island must be considered individually in the context of that island's history.

As a further consideration, some islands were granted by the federal government based on information extracted from much earlier mapping records, as opposed to surveys done for the specific purpose of disposition. In those cases, it will be necessary to consider water levels at the time of the early mapping to determine the subject of the grant.

For example, the sale of La Cloche Island occurred in 1882 (the catalyst for the temporary suspension of the 1876 Pardee-Laird agreement, as discussed in Part 1), but the grant was based on the 1820/21 shore and hydrographic survey work by Lt. Henry Bayfield. The water level at the time of Bayfield's work was about 176.0 metres. A tracing of a portion of his mapping was used as the basis of the grant, as opposed to a new survey for the purpose. Figure 4 is a copy of the tracing, which has been recorded as Plan T1432 CLSR. Consequently, any lands attached to La Cloche at the time of the Bayfield survey—even if they were separate islands in 1882—would form part of the 1882 grant. However, any water-covered lands, such as inundated isthmuses, would not have been included in the 1882 grant, but would attach to the upland islands and mainland with any recession of the water due to lower levels approaching 176.0 metres.

Island or Peninsula?

In reviewing 19th and early 20th century survey records and related administrative correspondence, it appears that many decisions were made without consideration of the fact that Lake Huron water levels change significantly over periods of years.

Following the 1914 Canada-Ontario accord (discussed in Part 1), many islands off the north shore of Lake Huron were surveyed as early as 1915 by the Province for disposition. However, the available information does not reflect any consid-

eration of the effect of changing water levels, which (as noted above) have irregularly varied over 2 metres. It is apparent that, before about 1920, most government officers were simply unaware that Lake Huron water levels changed at all. Isthmuses exposed at low water levels were sometimes identified as “former channels” with no explanation as to why they were now dry. In some cases, “new” islands were discovered—coincidentally at high water levels—of which there was no previous record. These situations appeared to be surprises to land administrators.

For example, Tiny Island in Nottawasaga Bay was identified as a peninsula of Lot 21 in Concession 13 in the original 1821 survey of Tiny Township. However, the water level was low—about 176 metres—at the time of that township survey.

When water levels were high in 1912 to 1914, attempts were made to purchase Tiny Island from the federal Department of Indian Affairs (as a Georgian Bay island south of Moose Deer Point). The fact of an island being observed, the island was then granted by the Department in 1915—fortunately to the same person that owned the island already as part of Lot 21, Concession 13.

Shore Road Allowances

Figure 4. Portion of T1432 CLSR



Mainland territories that were surrendered unconditionally in return for consideration were surveyed by the Province for settlement. North of the Severn River, shore road allowances were created by the original township surveys

Figure 5. Portion of Tiny Township Original Plan

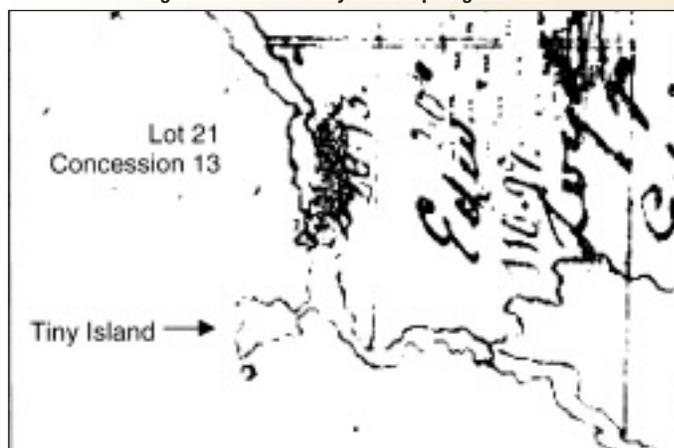
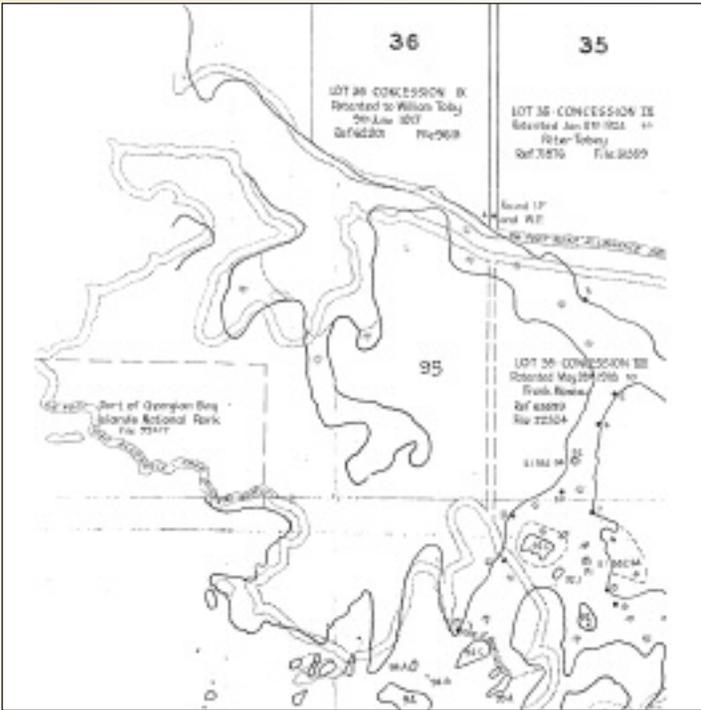


Figure 6. Portion of 1947 “Plan Showing Conflict of Ownership”



made under the 1,000-acre sectional system. At the time of those surveys, little was known about the changing water levels of the Lake and, depending on water level, certain islands that existed at the critical moment—whether treaty or original survey—have later been perceived as part of the mainland, and vice versa.

Baxter Township, surveyed in 1878, is an example. The shore line of Baxter was roughly traversed, with few ties to the shore. While not posted, a Shore Road Allowance was created by the original plan. More precise information was acquired when the nearby islands were surveyed in 1896. Some years later, it was discovered that the 1878 and 1896 surveys overlapped as illustrated in Figure 6; Island 95, surveyed by the Department of Indian Affairs in 1896 is shown overlapping the lot fabric of the mainland Baxter Township.

In such cases, the question of water levels must be

answered. If the land is part of the mainland, a road allowance exists along the shore; if it is an island, there will be no shore road allowance even though attached to the mainland at low water levels.

Concluding Remarks

Natural boundaries can be (and have been) created by treaty, legislation, administrative agreement or decision, Crown adoption of original surveys, transfer, or by any other legal operation that divides interests in land. It is the same with any boundary; retracement requires thorough research to identify how a boundary was created. Once the boundary is identified, the tracing of interests on both sides of the boundary is thereby simplified: “*nemo dat qui non habet*” (no one can give who does not possess).

For an island to be treated as an island in fact, it must be shown that the water’s edge was circumambient at the time when the boundaries of the island were created. By corollary, the island will be a peninsula of adjacent lands if the joining isthmus was dry at the critical administrative moment. The vertical dimension is just as important as the two horizontal dimensions that appear on plans.

The surveyor’s responsibility is to apply technical ability to historical knowledge in answering necessary questions in determining extents of interests in land; the Georgian Bay Island issues are just one instance. 

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¹ “Part 1” of this topic, “History of Administration”, was published in the Winter 2010 issue of the Ontario Professional Surveyor. References to that article are indicated in this article with “Part 1” in parentheses.

² The datum for all water elevations in this article is the dynamic International Great Lakes Datum 1985 (IGLD85). Differences between IGLD85 and the Canadian Geodetic Vertical Datum, which provides orthometric heights, will vary between locations on the Great Lakes.