

Johnston, J.W., 1997, **Barrier complexes at Wasaga Beach and Ipperwash, Ontario**, *International Association for Great Lakes Research* 40th Conference, Buffalo, New York, Program and Abstracts, p.122.

Excellent natural records of various stages of Nipissing, Algoma (?) and other more recent lake level fluctuations have been well preserved at Wasaga Beach (Georgian Bay) and Ipperwash (SW Lake Huron), Ontario. Better knowledge and understanding of beach accretion during Nipissing times (5,000 BP) and past water level fluctuations will help forecast future trends by extending historical water level changes in the Huron basin. The two coastal complexes consist of modern sediments, beach ridges, transitional dunes, parabolic dunes (largest set in Ontario) and lagoon. The most detailed record of past water levels is found within the beach ridge or “washboard” system adjacent to Lake Huron. These two coastal complexes formed in embayments where longshore drift accumulated large amounts of sand and gravel. A Nipissing bar formed across the embayment, enclosing a lagoon during the transgression of Lake Huron. Downcutting of the Port Huron outlet exposed beaches leading to the formation of high parabolic dunes over the Nipissing bar and a wide, well developed zone of beach ridges lakeward. Effects of isostatic rebound have been used to compare these similar coastal complexes as well as surveying, coring, and ground penetrating radar (GPR). GPR was used to map the progradational packages of gravely sand (Nipissing bar) that dip downward towards the lake. Surveying was used to define the geomorphology of the two coastal systems. Analysis of the cores aided in defining the internal structure of the beach ridges and the elevation of the post Nipissing water level planes in the Huron basin.