Appendix II

Shoreline Erosion

Lenville J. Stelle

The stability of the river bank is a major concern. Three of the previous studies of the property include references to features, including burials (J. Brown 1961:63), exposed along the shoreline. Even in the context of the present studies, two more features, one a pit at E195 and the other a burial at W310, were found to have eroded to the point that human osteological and cultural material was being strewn along the river bank. With regard to the east and west fields of the GVOI, M. Brown observed, on the basis of inundated Illinois River Survey bench marks, that at the time of her field work probably thirty feet (9.1 m) of the bank had been lost (M. Brown 1975:10) relative to the 1947 studies. I view her speculation as a minimum estimate, but have used this value in relocating her excavations (see Figures 4.2 and 4.3).

In attempting to calculate the magnitude of erosion occurring in the twenty years since M. Brown’s work, a chart of the shoreline produced by the Corps of Engineers (Starved Rock Pool, Sheets 5 and 6 Channel) and dated April 1974 was digitized and superimposed on our 1994 drawing (Figure 4.6). The interpretation of this comparison needs to be qualified by the realization that the digitization process could have introduced as much as three meters of error to the position of the 1974 shore. Nonetheless, in both the west and east fields there is evidence of significant loss. For instance in the west field, between W180 to W470, there are points where six to seven meters are missing. In the east field, two to three meters are typically missing. At the mouth of the embayment, this value increases to as much as seven meters. The peninsula on the extreme south- cast appears relatively unchanged.

Clearly the shoreline is more active in some places than others, but its proximity to the main sailing line of the Starved Rock pool produces significant and ongoing wave action from the heavy motorized river traffic. Because of the protection afforded by the shoreline level exposure of the St. Peter Sandstone, the best preserved segment of the original river front would be the area of the property designated LS18. This fact is further demonstrated by the enduring locations of the Delbridge Island Day Marks Nos. 232.9 and 233. Our exploration of this region of the GVOI revealed that even here the exposed sandstone evidenced 10 to 20 cm of wave induced undercutting. Shoreline erosion is an issue of continuing concern for the Illinois Historic Preservation Agency and Corps of Engineers (J. L. Decell Memorandum for Record, dated 5 November 1992) and is currently being monitored. Three permanent control points were set by Rohrbaugh during the 1994 field season, so that more precise and current data on rates of shoreline disturbance might be collected. The points are located at S284 W215, S285 W315, and S280 W415. These permanent benchmark marks consist of a two inch PVC pipe sunk to bedrock, filled with sand and concrete, and topped with an aluminum cap stamped with the date and location.

As a major concern for the managers of this important cultural resource, it is hoped that a cooperative plan for stabilizing the GVOI river bank can be devised. At present some of the most important archaeological assets of the GVOI continue to be lost at an alarming and unnecessary rate.