This research synthesizes archaeological, historic, and environmental data pertaining to the Upper Niagara River prehistoric fishery. Figure 1. Certain past fishery characteristics such as fish species, size, age, spawning locations, and fishing strategies are inferred through the study of bones (Fig 2, 8) and other artifacts (Fig 4) recovered from archaeological fishing sites, including radiocarbon dated deposits. By accessing these data sets, changes in the fishery can be associated with human causes and responses. The goals of this study are to generate baseline ecological information for the prehistoric and early historic period and spur multidisciplinary approaches to environmental reconstruction and rehabilitation.

Methods

- Modern and historic environmental conditions are studied in relation to archaeological evidence from five prehistoric sites (Martin, Peace Bridge/Fort Erie, Riverhaven 1, Riverhaven 2, and Burnt Ship) in the upper Niagara River drainage to identify characteristics of the prehistoric upper Niagara River fishery. Published and unpublished data are used (Fig 1).
- Relative abundance of fish bones from these sites are compared with current fish communities in the area.
- A Martin site bone deposit (F 12) is radiocarbon dated, and analyzed in detail, then compared with comparable data from the Peace Bridge site (F 158) (Fig 5, 6).
- Traditional archaeological interpretations of the artifact class called 'net sinkers' are tested by comparing net sinker mass to modern water velocity (Fig 7).
- Modern data suggest possible prehistoric fish procurement strategies and technologies.

Results Summary

- Modern and archaeological fish communities do not correspond well. The prehistoric fishery appears focused on exploitation of walleye and bluegill species that are rare today and are not known to spawn in the upper Niagara River (Fig 1).
- Martin and Peace Bridge site radiocarbon dated fish bone deposit comparisons suggest large-scale exploitation of mature spawning walleye, possibly with nets, ca. 2,000-1,300 ybp (Fig 5, 6).
- A common archaeological interpretation of notched stones as net sinkers relates mainly on their associations with aquatic contexts and the presumed correlation of net sinker size and speed of water current.
- A relationship appears to exist between net sinker mass and modern stream velocity at the sites (Fig 7).
- Historical information suggests that Iroquois people netted spawning fish including walleye with seines in the upper Niagara River into the early nineteenth century. Stones may have functioned as net sinkers.

Conclusions

The upper Niagara River fish community was likely more robust and biologically diverse in prehistory, but changed rapidly since 1825. Spawning walleye were taken in nets in large numbers in the Middle Woodland period (ca. 500 B.C.E.). Iroquois people are documented using similar methods into the early 1800s. Today, walleye are uncommon catches in the upper Niagara River, and are not known to spawn in that section of the river. Moreover, walleye are thought of as a key predator species and are the focus of an ongoing spawning rehabilitation program in Lake Erie (GLFC 2003:39).

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