

Radiocarbon Dating of a Fish Spine Suggests There is not an Archaeological Site East of Edgewater View, Edgewater Park, Cleveland, Ohio.

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In December 2020 Kent State University archaeologists received an email from an interested party about possible bone artifacts washed up on the Lake Erie shore of Edgewater Park (Figure 1). These possible artifacts looked like needles: narrow, thin, and possessing a point on one end and an “eye” on the opposite end (Figure 2). So, Kent State archaeologists and the objects’ discoverers planned an afternoon excursion to visit the find spot a few days after the initial email contact. More needle-like items were recovered on the shore (Figure 3). Survey of the adjacent cliffs south of the beach yielded no sign of any archaeological material, which suggested that these “needles” washed up on shore from a recently disturbed underwater site. Given the geological development of the Great Lakes (Jackson et al. 2000; Larson and Schaetzl 2001), the conversation quickly turned to the possibility of a disturbed underwater Pleistocene site (see Lyman 2015 for a review of Pleistocene bone needles). Everyone was puzzled by the lack of flaked stone debitage, but given the number of pointy objects (n=12), Eren provisionally suggested some sort of “Pleistocene needle cache.”

A subsequent review of the literature by Bebber quickly quashed this Pleistocene possibility (although Eren argues he was just “thinking out loud”). Visual assessment of the needle-like objects indicated that they were not shaped bone needles from a Pleistocene underwater site, but instead are catfish spines, which are naturally pointy and possess a hole on their proximal ends. Further review of the literature, however, indicated that catfish spines were sometimes used late in prehistory as tattooing needles or for other functions (e.g. Deter-Wolf and Diaz-Granados 2013; Deter-Wolf and Perez 2013; Knight 2004, 2010; Tuck 1990). Given the lack of other fish bones, which would support a recently dead catfish, we felt it important to investigate further, although we were not sanguine about the bones being ancient.

Thus, to test whether the recovered spines were archaeological, we submitted one to Beta Analytic, Inc. for AMS radiocarbon dating (Figure 2). The resulting age determination was 104.84 ± 0.39 pMC (Beta-586773), revealing the catfish spines to be modern. More broadly, this result does not support the presence of an archaeological site—either on- or offshore—east of Edgewater View at Edgewater Park.

By this point, the reader may be wondering why we went to the trouble of writing a manuscript detailing the radiocarbon date of dead modern catfish. There are several reasons. The publication bias against null results, and the “profound” detriment it causes to scientific endeavors, is well known and well documented (Munafò and Neill 2016:585). While null results stemming from poor research design, inadequate measurement, or other shortcomings can be problematic, null results are valuable when testing the validity of a theory and its propositions

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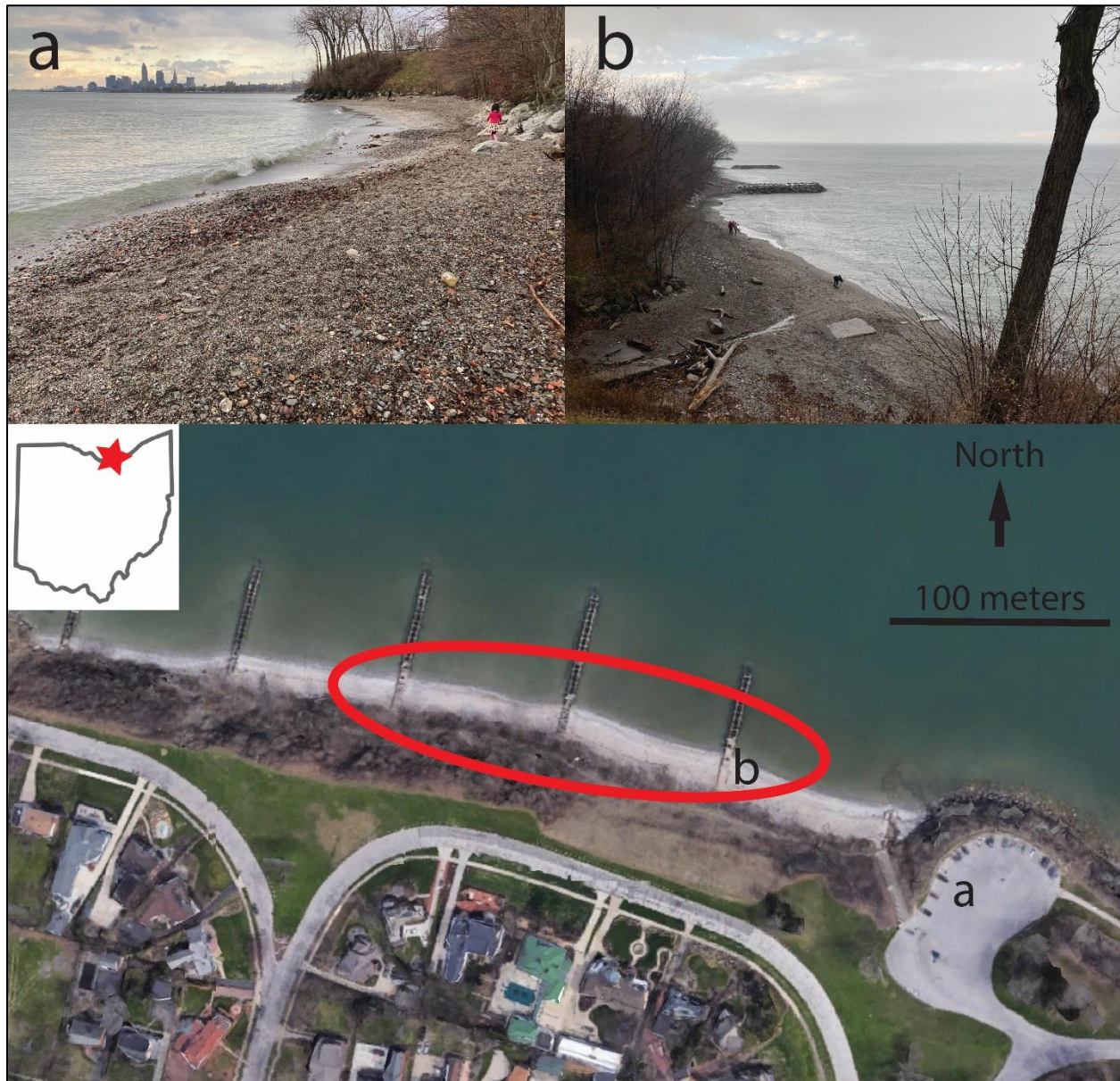


Figure 1. Map indicating the area where the potential artifacts were concentrated at Edgewater Park, Cleveland, Ohio. Views of the beach looking east (a) and west (b) are also shown.

(Landis et al. 2014:164; Leavitt 2013: 292). In this case, given the documented use of catfish spines in prehistory, we felt responsible for testing the theory that the recovered objects *could* be ancient – even if the chance of that theory’s validity was remote. By reporting our findings in a regional, open-access journal such as *Current Research in Ohio Archaeology*, curious individuals, citizen scientists, or professional archaeologists can learn from our experience, and given similar contexts, not go down a scientific “blind ally” (Munafò and Neill 2016:585). Moreover, regional partners (e.g. the City of Cleveland, Cuyahoga County parks officials, local



Figure 2. An example of the one of the fish spines; this specimen was sent for radiocarbon dating.

developers) have additional useful information in the event of future development and can thus make more informed decisions about the possible mitigation of cultural resources.

Finally, we believe the relationship between professional archaeologists and citizen scientists, avocational archaeologists, and collectors is supremely important. We also believe that the success of this relationship in part depends on explicitly demonstrating that professionals are continually learning, are sometimes wrong, and can change their minds in light of robust data and evidence. Over the course of the initial catfish bone recovery and through the literature review, Kent State archaeologists proposed different archaeological hypotheses for the needle-like objects, all of which were ultimately unsupported. But through this process the professionals and non-professionals learned together, and in the event of future discoveries, will more likely work closely, productively, and positively.

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Figure 3. Examples of potential artifacts found on the Lake Erie shore.

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