Editor’s Note / Note de l’Editeur

A happy spring to everyone - even if it is a bit slow coming to those of us in eastern Canada!

In this issue we continue our features on regional zooarchaeology with an article by Brent Murphy and David Black on zooarchaeology in the Maritimes. As they state, although interest in Maritimes zooarchaeology has a long history, it has been geographically uneven, particularly in PEI where there was no published archaeology before the 1950’s. Are there any PEI zooarchaeologists out there?

I again draw attention to the Faunal Session at the upcoming CAA in Halifax in honour of Dr Howard Savage - it will be an all day session, with some evening activities following, and should be a lot of fun.

Thanks to Donna Naughton for her help with editing the newsletter.

I encourage anyone with unpublished faunal data or reports of field work to submit it to CZ for possible publication. There is a lot of unpublished data out there, and we would be happy to publish it if it is of general interest.

Kathlyn Stewart, Editor

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Cover by Debbie Yee Cannon
ZOOARCHAEOLOGY IN THE CANADIAN MARITIMES

Brent M. Murphy and David W. Black

1 Archaeology Unit, Department of Anthropology, Memorial University of Newfoundland, St. John's.
2 Department of Anthropology, University of New Brunswick, Fredericton, N.B.

Interest in animal bones and shells from archaeological sites in the Maritime Provinces has a long history, extending back to the latter part of the last century. In this paper we present a brief history of this interest, a preliminary bibliography for Maritimes zooarchaeology, and some comments on the state of zooarchaeological research in the Maritimes. For readers with more general interests in the history of archaeology in the Maritimes, we suggest the following sources: Connolly 1977, Deal and Blair 1991, Joudry 1955, Sanger 1986, and Tuck 1984.

In the Maritimes, archaeological research in general, and zooarchaeological research in particular, has been constrained by several factors that condition much of the following discussion:
1) In most parts of the Maritimes acidic soils destroy uncalcined faunal remains rapidly. As a result, most faunal studies have concentrated on coastal shell-bearing sites, where shellfish remains neutralize soil acidity. In contrast, faunal remains from interior sites are rare and consist almost exclusively of calcined bone fragments.
2) The coastal archaeological record is truncated at ca. 2400 years ago by rising sea levels and shoreline erosion. As a result, there are almost no faunal assemblages predating the Woodland period. An exception is the Mud Lake Stream site (Deal 1985, 1986; Langemann 1984, 1985) where a small assemblage of calcined fish bones, probably alewife, are associated with a late Archaic component.
3) Research has been temporally and spatially uneven in the Maritimes. For example, the Quoddy region in southern New Brunswick is by far the most extensively studied area (e.g., Black and Turnbull 1986; Black 1992; Sanger 1987), with published research dating from 125 years ago (Baird 1882); in contrast, there is no pre-1950s published information on Prince Edward Island archaeology.
4) Most faunal analyses have been conducted outside the Maritimes using comparative collections at the Faunal Osteoarchaeology Lab, University of Toronto, the Royal Ontario Museum, Toronto, and the Zooarchaeological Analysis Program, Canadian Museum of Nature, Ottawa. Frances Stewart is the only resident zooarchaeologist with a comparative collection. Limited faunal osteological collections exist elsewhere in the Maritimes (e.g., the New Brunswick Museum), but these have been used infrequently by archaeologists.

Thus, most zooarchaeological analyses have been directed toward Native American sites dating to the Woodland period and Euro-Canadian sites of the Historic period, as will be evident in our review. Frequently, faunal identifications have been made using comparative collections developed for zooarchaeological research in other parts of the country.
A NOTE ON THE BIBLIOGRAPHY

The appended bibliography consists of 140 references; of these, 94 are primary sources, 33 are secondary sources, and 13 sources deal with ethnohistory and the history of Maritimes archaeology. Many of the primary sources (ca. 50%) are unpublished, although the results of some of these are available in secondary sources. Of the primary sources, 78% deal with prehistoric assemblages and 22% with historic assemblages; 59% refer to sites in New Brunswick, 39% to sites in Nova Scotia, and 2% to sites in Prince Edward Island. About half of the primary sources have been produced by three researchers: Frances Stewart, David Black and Stephen Cumbaa. Only about 25% of the primary reports go beyond zoological identifications, basic quantification, and basic analyses. These statistics give some impression of spatial and temporal variation in zooarchaeological research in the Maritimes.

THE LATE 19TH CENTURY

The earliest archaeological research was conducted by two societies comprised of individuals, mostly professional men, who were interested in science and natural history. These societies, the Nova Scotia Institute of Science and the Natural History Society of New Brunswick, maintained small museums and organized field trips to archaeological sites to acquire specimens. Much of the archaeological information published before World War I was in journals established by these societies. As a result of the involvement of these societies, archaeological research in the Maritimes has been multidisciplinary and interdisciplinary from its beginnings.

Archaeological research in Nova Scotia began in the early 1860s when the Rev. J. Ambrose investigated what he called a beach mound or kitchen midden on St. Margaret's Bay. Ambrose invited members the Nova Scotia Institute of Science to investigate the site. Ambrose (1864), Jones (1864), and Gossip (1867) all compared the St. Margaret's Bay shell mound to the kjokkenmoedding or kitchen middens of northern Europe. Jones and Gossip identified the vertebrate and invertebrate species, as well as a worked beaver incisor and cut marks on some bones. Based on the rate of organic decay, Gossip proposed an age for the site of between 600 years and 50 years before the arrival of Europeans. Gossip also speculated that the most recent middens in Nova Scotia reflected the historic settlement patterns of the Micmac.

The beginning of scientific interest in archaeological sites in New Brunswick is marked by the 1882 publication of Baird's 1869-72 exploration of some shell middens in the Passamaquoddy Bay and Grand Manan areas. As a natural historian and ornithologist, Baird was interested in faunal remains and identified vertebrate and invertebrate species. In 1883 George Matthew, president of the Natural History Society and curator of its museum, organized and directed a field trip that encompassed botany, zoology and archaeology. Matthew and his group of naturalists excavated a native camp site near Bocabec. From the recovered animal bones and shells, Matthew (1884)
deduced the dietary pattern and commented on the time of year of native occupation. Matthew used the expertise of Drs. Daniel Wilson of Toronto and J.W. Dawson of Montreal to help identify bone artifacts and incisions on some bones. This is the earliest record of faunal material from the Maritimes being sent to specialists for examination (Matthew 1884:23). The multidisciplinary professional techniques and analyses that Matthew used are acceptable by today's standards.

Other early zooarchaeology in New Brunswick includes the work of W.L. Goodwin and W.F. Ganong. Goodwin (1893) published a short report in the Canadian Record of Science on an archaeological site near Cape Tormente, which at the time was one of the headlands selected as the point of departure for a proposed tunnel to connect New Brunswick and Prince Edward Island. Goodwin described a shell midden that was eroding out of the shoreline and identified the species of shells that were present. In one of his earliest published works, Ganong (1886) used archaeological evidence from native shell mounds to support his theory that common periwinkles were introduced into North America during the historic period.

FROM 1900 TO 1950

In the first half of the twentieth century there were only two published articles that relate to zooarchaeology. This period coincides with a general hiatus in archaeological research, especially in New Brunswick. The small amount of archaeology that was done in New Brunswick was an extension of 19th century work, while in Nova Scotia archaeology moved into the 20th century during this period. In part, this may be because the Natural History Society of New Brunswick was discontinued early this century, while the Nova Scotia Institute of Science continued its activities.

In 1906 Ganong wrote an article about semi-fossilized walrus bones from Miscou Island, New Brunswick. From bullet holes in the skulls, and evidence of the tusks being removed using axes, and from an account dated 1756 of Acadian refugees living in part on 'sea cow', Ganong suggested that the walrus bones resulted from Acadian occupations.

The National Museum of Man (now Canadian Museum of Civilization)’s involvement in Maritimes archaeology began in Nova Scotia in 1913-14 with excavations of shell heaps at Mahone Bay and Merigomish Harbour conducted by H.I. Smith and W.J. Wintemberg. This also represents the first excavations in the Maritimes by full-time professional archaeologists. Their reports were published together in Smith and Wintemberg (1929).

Smith reconstructed the diet of the native people from bones and teeth in the shellheaps. He also discussed the make-up of the mounds and speculated about native people having domesticated dogs, as shown by gnawing marks on bones. He recovered more than 300 bone tools, including perforated teeth, walrus ivory and decorated antler. Wintemberg relied on the expertise of three American specialists to identify the faunal remains that were excavated. In his report, Wintemberg listed the mammal remains
in their order of abundance, and discussed the small samples of fish and avian bones. He also found bone tools, and perforated teeth, but not in the numbers that Smith reported. These reports parallel the contributions of Smith and Wintemberg to zooarchaeological research in Ontario (Stewart 1993:3-4).

THE 1950s and 1960s

The 1950s and 1960s mark the beginning of the modern period of faunal analyses in the provinces of Nova Scotia and New Brunswick. John Erskine, a member of the Nova Scotia Institute of Science, travelled throughout Nova Scotia recording and excavating prehistoric sites; he also worked briefly in New Brunswick and in Prince Edward Island. In his reports, Erskine commented on the preserving nature of shell heaps, and in later excavations began provenancing faunal remains by arbitrary levels within excavation units. Erskine (1960) commented on his inability to find a Canadian zoologist, equipped with a comparative collection, who was able and willing to help him identify faunal remains. Erskine (nda) noted receiving help from Dr. P. Bradkorb, of the University of Florida, in identifying the avian bones in his collections. Erskine also worked, on several occasions, with invertebrate zoologists doing research in the Maritimes. A.H. Clarke used some of Erskine’s archaeological information in his attempt to demonstrate that common periwinkles are native to the Northeast coast (Clarke 1963, 1971; Clarke and Erskine 1961). Erskine also collaborated with J.C. Medcof, and Clarke in their studies of subfossil oyster and quahog shells (Medcof, Clarke, and Erskine 1965).

With the aid of the specialists that had identified faunal remains for him, Erskine assembled an "inadequate" comparative collection of his own. In his 1960 article, he included tables of "food by % of units in which it occurred" (1960:352-353), as well as a discussion of seasonality. Erskine was responsible for the first analysis of a faunal assemblage from Prince Edward Island; from the Savage Harbour shell midden, he (ndb) identified the bones of fish, mammals and birds, as well as the shells that made up the midden.

The modern period of faunal analysis in New Brunswick started in the 1960s when Churchill (1963) analyzed mammal remains from Pearson's (1970) Canadian Museum excavations of prehistoric sites. In his report, Churchill inferred a marked change in native diets, shown by the increase of beaver remains in later sites. Pearson discussed the distribution of waved whelks as being an indicator of seasonality or ecological changes. Fish remains from these investigations were identified by Dr. Lavett of the American Museum of Natural History, New York.

In his doctoral dissertation on historic sites archaeology at Portland Point, Saint John, Barka (1965) included the first faunal analysis of an historic site in the Maritimes.

Late in the 1960s David Sanger (1971), then Atlantic Regional Archaeologist at the Canadian Museum, began a long-term research project in the Passamaquoddy Bay area that was
conducted and reported throughout the 1970s and 1980s. Howard Savage (1969) analyzed faunal material from one of Sanger's excavations, and Savage's first students, James Burns and Frances Stewart, became major contributors to zooarchaeological aspects of Sanger's research.

**THE 1970S**

The number of faunal analyses done in the Maritimes increased dramatically in the 1970s, as a result of three major research projects, David Sanger's work on Passamaquoddy Bay, Ronald Nash's work in northern Nova Scotia, and Parks Canada's development of the Fortress of Louisbourg National Historic Park on Cape Breton Island, all of which focused, to some extent, on subsistence and cultural ecology. Another event that stimulated research was the establishment of a provincial archaeological branch (now Archaeological Services) in New Brunswick, headed by Chris Turnbull. In this period, zooarchaeological research grew from lists of identifications incorporated into site reports, to become a central focus of some archaeological studies.

In New Brunswick, Burns (1970a, 1970b, 1978) did the faunal analyses for several sites in the Passamaquoddy Bay area, including those incorporated into M.A. theses by Lavoie (1971), and Davis (1978). Stewart (1974) did the faunal analysis for the Late Woodland Carson site (Sanger 1987), reconstructing seasonality and diet, and comparing faunal assemblages from several sites in the region. At the Carson site, Stewart (1976) discovered the remains of coyotes that previously were thought to have been introduced to the area in the 1940s.

Stewart also produced faunal reports for prehistoric and historic sites excavated by the New Brunswick government. These included Minister's Island (Stewart 1980b), the Oxbow site (Stewart 1979, 1981a), and the historic Beaubears Island site (Stewart 1978).

In Nova Scotia, Nash's (1978) research incorporated the results of faunal analyses done by Stewart (1980a). Gotthardt (1977) re-analyzed the faunal remains from Wintemberg's excavations at the Eisenhauer shell midden. Faunal analyses for the Canadian Parks Service's historic projects were done by Stephen Cumbaa: the Fortress of Louisbourg (Cumbaa 1976, 1978, 1979a; Cumbaa and Rick 1975), and the 18th century fishing village on Grassy Island (Cumbaa 1979b, 1980, 1983).

This increase in zooarchaeology led to more theoretical and methodological research in the Maritimes as well. As part of the Passamaquoddy Bay Project, Bonnichsen and Sanger (1977) experimented with computer techniques to analyze the distribution of faunal remains within sites. This approach was applied by McCormick (1980, 1982) using the faunal assemblages from four sites that Sanger excavated. Their analyses supported the position that faunal remains are not randomly distributed through time or space; rather, their distributions reflect patterned human behaviour and may co-vary with the other classes of archaeological data.
THE 1980S TO THE PRESENT

The 1980s and 1990s are considered together since much of the work in the 1990s represents outgrowths of work begun in the 1980s. Zooarchaeological reports continued to be generated by institutions and researchers working outside the Maritimes, especially by people working at the Canadian Museum of Nature and the Faunal Osteoarchaeology Lab, University of Toronto.


For Nova Scotia, faunal analyses of prehistoric sites were produced by Stewart (1984) for the Eel Weir and Merrymakedge sites excavated by the Canadian Parks Service, and by Langemann (1988) for the Brown site reported by Sheldon (1988). Sanders (nd) analyzed faunal remains from David Sanger and Stephen Davis's excavations in the Yarmouth area. Faunal analyses were produced for several Acadian sites in Nova Scotia; Belleisle (Still 1984), the Melanson Settlement (Still 1986), Castle Frederick (Black 1990b), and Fort Anne (Henderson 1994).


Zooarchaeological research in New Brunswick was varied, including several M.A. theses, reports on sites excavated by the provincial government, and several major research projects. Salvaggio (1983) produced a report on faunal remains from the Holt's Point site, excavated in the 1950s (Hammon-Demma 1984). Donahue Harmon (1980) analyzed calcined bones from the Fulton Island site (Foulkes 1981). Archaeological Services of New Brunswick sponsored several analyses; these include the Augustine Mound (Stewart 1982; Black 1987a), Old Mission Point (Black 1984a), BgDr38, a shell midden on Deer Island (Black 1984c), Oxbow (Black 1985b), and the Taylor Island shell deposit (Black 1992b).

In the 1980s, major research projects in New Brunswick involving prehistoric sites included the Partridge Island and Bliss Islands projects in the Quoddy region, and the Mud Lake Stream project on the interior St. Croix drainage. In the 1990s, another major prehistoric project was conducted at Shediac Island on the southeast coast, a major historic project was conducted at the Enclosure Park in Newcastle, and the Bliss Islands Project continued in the Quoddy region.

The Partridge Island Project encompassed several faunal reports and seasonality studies including Bishop and Black (1988), and Black (1982, 1983a, 1983b, 1993; Black et al. 1986). This
project focused on faunal stratigraphy in a Woodland Period shell midden. The Bliss Islands project examined faunal stratigraphy, subsistence, and seasonality from a multi-site perspective (Black 1985a, 1987b, 1988b, 1989a, 1989b, 1989c, 1990a, 1992a; Black, Gruspier, and Johnston 1988; Reading 1994). Most recently the Bliss Islands research has considered historic subsistence on the islands (Reading 1995; Black and Blair 1995).

Several zooarchaeologists contributed to Mike Deal's (1984, 1985, 1986) research on the Mud Lake Stream and Diggity sites. In addition to the Archaic faunal remains, referred to above, Woodland period faunal remains were analyzed by Langemann (1984, 1985), Hale (1988), and Black (1984a, 1988a). The faunal assemblage from Mud Lake Stream represents the only interior counterpart to the coastal Woodland assemblages from shell-bearing sites in the Quoddy region.

Hawkins (nd) reported on faunal remains from Kevin Leonard's excavation of the Winterberg shell midden, Shediac Island. Stewart (1992b, 1992c) reported on Acadian period faunal remains from the Enclosure excavations conducted by Marc Lavoie.

CONCLUSION

Most of the zooarchaeology done in the Maritimes to date has involved coastal prehistoric archaeological sites. As a result, most direct evidence for native subsistence practices and seasonal movements in the prehistoric period is derived from faunal assemblages from coastal shell-bearing sites. Until recently most seasonality interpretations of prehistoric faunal assemblages were strongly influenced by early historic accounts of native subsistence activities. The most important ethnohistoric sources are Biard (1959), Lescarbot (1914), LeClercq (1910), and Denys (1908). Important secondary sources, from an archaeological perspective, include Hoffman (1955), Christianson (1979), and Burley (1981). The ethnohistoric sources have usually been interpreted as indicating that native people had a settlement pattern involving summer habitation on seacoasts and winter habitation in the interior. The work of Sanger (1982, 1983), Stewart (1982b, 1987), and Black (1992a, 1993) indicates winter occupations on the coast, at least during the middle Woodland period and, perhaps, Woodland coastal occupations in all seasons. Burley (1981) suggests that the historically observed settlement pattern was a response to the early fur trade. While most archaeologists working in the region now question the applicability of ethnohistorically-derived seasonality models to all native people in all areas and in all times, the paucity of direct faunal evidence from interior sites leaves few alternative bases for interpretation.

Currently researchers are attempting to expand and complement zooarchaeological studies of paleodiet and seasonality. Rojo (1986, 1987) has produced metric information for modern codfish and applied this to identifying, quantifying, and determining the seasonality of prehistoric fish remains (Rojo 1990). Black (1992a) has used
stable isotope analyses, and Deal (Deal and Silk 1986) has used gas chromatography, to study carbonized encrustations on the interiors of ceramic sherds. Black (1989a, 1989b, 1990a, 1992a) and Leonard (see Hawkins nd) have examined the growth laminae of shellfish, and Spiess (1988) those of mammal teeth, to determine the seasons in which these resources were harvested.

Zooarchaeological research on historic sites has focused almost exclusively on Acadian and Pre-Loyalist occupations. Loyalist period subsistence has only recently been explored by zooarchaeologists. Prehistoric archaeological sites have produced the remains of several species that were extirpated or extincted during the historic period: passenger pigeon (Black 1992a; Erskine nda), great auk (Black 1992a), sea mink (Killingsworth-Cooper 1994; Reading 1995), and coyote (Stewart 1976). Historic sites provide information about species that were introduced during the historic period, for example, the common periwinkle, and domesticated farm animals. Archaeological faunal assemblages form an important resource for understanding Maritimes human ecology and natural history.

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In addition, Colleen Beck and William Johnson of the Desert Research Institute are organizing a session dealing with work done at the Nevada Test Sites. Send abstracts and suggestions to:

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INFORMATION WANTED ON NETTING NEEDLES

Janet Cooper is currently researching the temporal and spatial distribution of bone netting needles excavated on Ontario sites and would be grateful to receive information on site-specific recovery of these artifacts as well as any references in the literature about which CZ readers have knowledge. She would also appreciate hearing from anyone who can shed light on the occasional past reference made to “snowshoe needles”. Please contact her c/o Dr Howard Savage, Department of Anthropology, University of Toronto, 100 St. George Street, Toronto, ON, M5S 1A1. You can also reach her by e-mail at j.cooper@utoronto.ca

SUPPLEMENT AVAILABLE

The 1995 supplement to Cooper and Savage’s 1994 publication Zooarchaeological Analysis on Ontario Sites: An Annotated Bibliography is now available. The supplement, which contains more than 40 entries plus amendments/additions to the original publication, will be included at no extra charge with all new orders of the bibliography. Cost of the bibliography is CDN$15 + $@ postage/handling; it is available on disk and in hard copy from the Ontario Archaeological Society, 126 Willowdale Avenue, North York, Ontario, M2N 4Y2. Current owners of the bibliography can obtain their 1995 supplement free of charge by sending a stamped and self-addressed envelope (+ disk if applicable) with their request.

REMINDER

CAA - Halifax 1996

A reminder of the all-day session of Faunal papers in honour of Dr Howard Savage at the upcoming CAA. I believe the revised schedule has the session on Friday, May 3rd, 1996.

There will also be an all day session on Thursday, May 2nd on the archaeology of the northern Northwest Coast of BC. This will include faunal papers, and one of the discussants, Gay Frederick, is a zooarchaeologist from BC.