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Past and Present Zooarchaeology in Canada

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ABSTRACT: Zooarchaeology in Canada does not have the time depth of Old World countries, thus is not an evolutionary record of human and animal interactions as in these countries, but a snapshot of human/animal associations in a context of environmental and ecological diversity. Canada has a unique geography, based on its northern location and vast maritime coasts, and its zooarchaeological remains reflect this. Zooarchaeology, using a wide sense of the word, has been of interest in Canada since the Europeans immigrated to Canada in the last millenium, with numerous journals, diaries and other records kept by the earliest European immigrants on First Nations people and their economy and subsistence. These are invaluable to modern zooarchaeologists. In the 19th and 20th centuries, zooarchaeology became more scientific, with faunal remains being increasingly accurately identified and recorded in published journals. In the past 25 years, zooarchaeology has developed in different ways in different regions across the country, depending on the nature of the faunal remains. To examine the "health" of zooarchaeology in Canada today, a quantitative and qualitative inventory of practioners, journal articles, students and collections was listed, with the result that with some minor improvements zooarchaeology seems a healthy discipline in Canada.

KEY WORDS: ZOOARCHAEOLOGY, CANADA, ENVIRONMENT, ARCHAEOLOGY

RESUMEN: La Zooarqueología en Canadá no tiene la dimensión temporal de los países del Viejo Mundo y por lo tanto no constituye un registro evolutivo de las interacciones hombre:animal sino tan solo un fotograma de las asociaciones antropozoológicas en un contexto de diversidad ambiental y ecológica. Canadá presenta una geografía única, debido a su localización septentrional y amplias regiones marítimas por lo que sus restos zooarqueológicos reflejan tal circunstancia. La Zooarqueología, utilizando la más amplia acepción del término, ha sido objeto de interés en Canadá desde que los europeos colonizaron Canadá en el último milenio con numerosas revistas, diarios y otros registros que mantuvieron los primeros inmigrantes europeos acerca de las gentes de la Primera Nación y sobre su economía y modos de subsistencia. Estas fuentes documentales son indispensables para los zooarqueólogos modernos. En los siglos XIX y XX la Zooarqueología se hizo más científica y los restos faunísticos se fueron identificando y registrando con mayor precisión publicándose los resultados en revistas. Durante los últimos 25 años la Zooarqueología ha seguido distintos cursos en distintas regiones del país en función de la naturaleza de los restos faunísticos. Para examinar hoy la "salud" de la Zooarqueología en Canadá se lleva a cabo un listado de artículos de revistas, estudiantes y colecciones, así como un inventario cuantitativo y cualitativo de profesionales. El resultado es que, con unas pocas mejoras de índole secundaria, la Zooarqueología parece gozar de un buen estado de salud en este país.

PALABRAS CLAVE: ZOOARQUEOLOGÍA, CANADÁ, AMBIENTE, ARQUEOLOGÍA

INTRODUCTION

Canada has a shallow archaeological time depth compared to the Old World, with human populations, modern *Homo sapiens*, coming into Canada from Asia at some time in the Late Pleistocene. Canadian zooarchaeology is therefore less an evolution of human and animal interactions, as it is in Africa and Eurasia where such interactions span a much greater range of time, and more a snapshot of modern humans and fauna interacting in association with vast environmental and ecological diversity.

The subsistence patterns of the late Pleistocene immigrants and later peoples to Canada were shaped by the diverse climates and geography across the country. Canada's northern location meant that its faunas and prehistoric peoples, particularly in the Arctic and sub-Arctic regions, were more cold-adapted than most populations globally, with such zooarchaeological manifestations as a greater reliance on fur- and hide-bearing mammals for clothing and shelter. Canada has the greatest length of maritime borders of any country, resulting in a focus by many of its prehistoric peoples on sea mammals, birds, fish and invertebrates in their subsistence strategies (Table 1). Inland, the vast prairies housed huge herds of bison and people adapted to hunting large animals in herds, while in the western and eastern forests peoples adapted to stalking more solitary animals such as deer. After the arrivals of the Europeans, archaeological sites document the changes in the subsistence and economy of the First Nations inhabitants in their ongoing associations with the European immigrants. The zooarchaeological manifestations of human/animal interactions in Canada include the large shell middens of the coasts particularly in British Columbia (BC) the large mammal kill sites of the Prairies and the whale bone shelters and fur clothing of the north. Zooarchaeologists working on historic sites have also been fortunate in having a vast array of historical documents describing First Nations cultures of the time, left by Europeans from earlier in the millenium.

ZOOARCHAEOLOGICAL ROOTS

Recorded interest in fossil bones began with European curiosity about the earlier cultures of the country. Journals, diaries and other written records of the activities of local peoples were recorded by Europeans living in or visiting Canada in the 16th, 17th and 18th centuries AD (eg., Sagard, 1866; Waugh, 1916; Biggar, 1922-1936; Tooker, 1964; Trigger, 1976; Stewart, 1987). These are invaluable sources of information about diet and subsistence, as well as for zoological records of animal distributions at the time. They also record the changing

YEAR	TYPE	FAUNAL CLASS				REGION		
	Method+/ or Theory	Faunal Report	Bird	Mam'l	Fish	All Classes	Arctic/ Subarc	West Coast	Prairie Ont/PQ/ Atlantic
2001	2			2			1		1
2000	1				1			1	
1999	1		1	1				1	1
1998	3		3				2	1	
1997	3		3				2		1
1996	2	1		2		1		1	
1995	2	1		1	1	1		2	
1994	2			2					1
1993		1				1		1	

TABLE 1
Canadian Zooarchaeological articles 1993–2001, categorised by type of article, class of fauna discussed and region.

patterns of diet and subsistence as First Nations' way of life becomes increasingly altered in their associations with the Europeans. As European immigrant populations migrated across Canada and established settlements in increasing numbers in the 18th and 19th centuries, archaeological sites became increasingly exposed and interest mounted in their contents, in particular the bison kill sites in the Prairies, shell middens on the west and east coasts and the burial sites in Ontario and Quebec (Noble, 1972).

In the mid 19th century archaeological material began to be systematically collected and recorded with a view to reconstructing past ways of life. One result was the initiation of two journals in 1852, the "Canadian Journal" and the "Canadian Naturalist and Geologist", while another result was the springing up of local naturalist, historical and scientific societies, including the Royal Canadian Institute and the Canadian Naturalist and Geologist Societies. There was sufficient interest in archaeological fauna that the first article concerning zooarchaeology was published in 1856, entitled "Value of natural history to the archaeologist" (Wilson, 1856) and soon published reports were listing faunal remains in Canadian sites (e.g., Ambrose, 1864; Jones, 1864). The first purely zooarchaeological report was published in 1902 by W. Brodie, dealing with faunal remains from several prehistoric sites in southern Ontario. It emphasised a more scientific approach, naming animals by genus and species, and listing the fauna in systematic order (Stewart, 1993).

Museums were also important at this time in aiding zooarchaeological studies. The first museum was opened in 1842 in Saint John, New Brunswick, housing Micmac artifacts, ethnographic materials, and natural history objects. In 1852 the collections of the Canadian Institute were amalgamated with the collections of the Ontario Provincial Museum, now the Royal Ontario Museum in Toronto. The earliest western museum was the Provincial Museum in Victoria, which opened in 1887.

Two men, William Wintemberg and Harlan Smith, were influential in developing zooarchaeological research in Canada in the first half of the twentieth century. Wintemberg mapped sites in southern Ontario and Quebec and also made detailed descriptions of both the artifacts, particularly of bone, and the faunal remains (e.g., Wintemberg, 1919, 1921, 1946). Smith also excavated sites in Ontario, but was primarily known for his work in the development of British Columbia archaeology (e.g., Smith, 1899, 1909). Both Wintemberg and Smith gave considerable attention to subsistence patterns, and utilised historic and ethnographic works, in particular Waugh's book on Iroquois Foods and Food Preparation (1916). Both also realised the importance of bone modifications, and Smith discussed the domestication of dogs, based on the gnaw marks on bone excavated in Nova Scotia (Smith & Wintemberg, 1929). They also emphasised the zoological value of archaeological remains, and in 1919 Wintemberg published "Archaeology as an aid to zoology".

From about 1940 to 1960, with the increasing numbers of excavated sites and the increasing importance being given to animal remains, there was clearly a need for good comparative osteological collections, and specialists who could identify fossil bones. The lack of both was underlined in 1960 when John Erskine, of the Nova Scotia Institute of Science, stated that he could not find a Canadian zoologist with a comparative osteological collection to identify faunal remains (Murphy & Black, 1996).

In the 1960's and 1970's the disciplines of Anthropology and Archaeology underwent radical changes (e.g., Trigger, 1989), radically changing the discipline of zooarchaeology. The processual archaeology of this period emphasised the interaction of the environment, subsistence and behaviour, and created a need for more and detailed studies of animal remains from archaeological sites. The concomitant need for comparative osteological collections and for osteological specialists was answered in the 1950's, 1960's and later in the United States by a group of researchers who became the first full-time zooarchaeologists in North America – these being Paul Parmalee, John Guilday and Stanley Olsen. The methodologies and standards these men used were the models used by later generations in both Canada and the US. The impact of processual archaeology changed zooarchaeology in Canada, with each region responding differently to the new perspectives.

REGIONAL ZOOARCHAEOLOGY

British Columbia

The rich Northwest coast cultures of the historic period have long attracted archaeologists inte-

rested in the roots of these groups. Archaeology has therefore flourished on the coast in the past century,with regional sequences developed by Charles Borden (e.g., 1950, 1951), George MacDonald (1969), Don Mitchell (e.g., 1968), and Roy Carlson (1960) and inland, by David Sanger (e.g., 1967). Faunal remains were fortuitously preserved in association with shell middens, but recovery before 1980 was often unsystematic. Workers who did focus on recovery and reporting of faunal material were Gay Frederick (Calvert, 1968), Frances Stewart (e.g., 1977), and J. May (1979) on Prince Rupert Harbour area faunal material. In the interior of BC, studies by Kuijt (1989) and Langemann (Driver, 1995) have looked at inter-site variability, including animal resources.

In the1980's and through the 1990's there has been more of a trend in BC to examine in greater detail the interactions between the rich coastal cultural base and the abundant, diverse subsistence resources. Examples include comparing subsistence trends in the Prince Rupert-Queen Charlotte Island area by Frances Stewart and myself (1996), and in the southern coastal area of BC by Diane Hanson (1991, 1995). Recently, more theoretical and methodological articles have been published, including Aubrey Cannon's discussions on ratfish utilisation (1995) and faunal recovery (2000), and my own discussion of screen mesh size in recovery of remains, particularly fish, on the coast (Stewart, 1996; in press).

Unique zooarchaeological problems are associated with BC coastal sites, primarily due to the enormous taxonomic diversity and size range in the fauna. Because of this huge diversity in taxa, it is imperative to use comprehensive comparative collections, which are difficult and costly to build and maintain. Dense shell middens make retrieval of fauna difficult, especially small faunal elements. Poor retrieval of microfauna (especially fish and birds) because of utilisation of large screen mesh is an ongoing problem, requiring a balance between total data recovery and time constraints.

The Prairies

On the Prairies, the zooarchaeological focus has been towards the bison kill sites and the stratified habitation sites in southern Alberta, Saskatchewan and Manitoba. Early research on the often massive amount of bones recovered was hindered by the lack of scientists to analyse the faunal material; bones excavated prior to the 1970's needed to be sent outside Canada for analysis (Walker, 1997). Later researchers used methodologies developed in the 1960's and 1970's by Plains archaeologists in the United States and in the Canadian prairies, including bison population studies and seasonality determination. Researchers in Canada using these techniques included Michael Wilson (e.g, Davis & Wilson, 1978) and Ernest Walker (Walker, 1997).

In the 1980's and 1990's techniques unique to large mammal kill sites have been developed and employed in Prairie sites. More standardised measures of quantification of bison bones, detailed taphonomic data, tooth analyses, detailed descriptions of butchering practices and preparation practices have all been incorporated into site interpretation. The Head-Smashed-In Buffalo Jump bison site located in Alberta is an example of meticulous excavation and bone analysis. It was opened as a World Heritage Site in 1987.

Problem areas in zooarchaeological work on the Prairies as articulated by Ernie Walker (1997) include the lack of adequate comparative faunal collections. Another problem is lack of consistent recovery of microfauna to reconstruct paleoenvironment and ecology. Recent work by zooarchaeologists (e.g., Driver, 1993; Morlan, 1994) has emphasised the importance of reconstruction of the paleoenvironment. Water screening and use of small screen sizes is now more common in Prairie sites.

Ontario

As mentioned above, both Wintemberg and Smith were active in promoting both archaeological and zooarchaeological research in Ontario in the first half of the 20th century. In the 1960's, two monographs by Americans Charles Cleland (1966) and William Ritchie (1965) were published on Great Lakes and New York State archaeology, with both putting great emphasis on faunal remains, diet and subsistence. These monographs became the standard for southern Ontario archaeology.

Dr.Howard Savage, formerly a pediatrician, was hired in 1966 at the University of Toronto and became the first full time zooarchaeologist (Stewart, 1993). Dr Savage's hiring reflected the new importance of not just researching, but teaching

zooarchaeology to students. Over the next 30 years, Dr Savage built a large comparative osteological collection at the University, taught zooarchaeology to numerous undergraduate and graduate students did considerable faunal work himself, and added to the zooarchaeological literature (e.g., Savage, 1969). Many of the current zooarchaeologists in the country were first trained by him.

Zooarchaeology in Canada got a real boost in 1974 with the creation of the Zooarchaeological Identification Centre (aka ZIC) by Anne Rick at what is now the Canadian Museum of Nature in Ottawa. A collection was also started by Frances Stewart at what is now the Canadian Museum of Civilisation (CMC), also in Ottawa. Between the workers at ZIC, CMC and Dr Savage's U of Toronto students, many of the faunal assemblages in Ontario were analysed between the 1970's and 1990's, and emphasised the importance of faunal remains in archaeological sites.

Ontario zooarchaeology and archaeology have suffered from a lack of synthetic regional coverage. Archaeologists have focused on local area sequences, and few regional syntheses have been published. Similarly few regional trends in zooarchaeological data have been published, something which is needed in the future. Further, as will be seen below, reporting of zooarchaeology in Ontario is poor; compared to the rest of the country few zooarchaeological articles have been published in the past 15 years (see below).

Québec

Much of the early archaeological and zooarchaeological work in Québec was undertaken by National Museums of Canada staff. However, this changed with the establishment of the Society for Prehistoric Archaeology by students from the Université de Montréal. This society had the goal of employing modern, professional methods in Québec, meaning that the role of zooarchaeology achieved new significance among Québec archaeologists (Cossette, 1993). Québec zooarchaeology was furthered in 1975 when two veterinarians from the University of Montréal began assembling a comparative osteological collection, and to undertake zooarchaeological analysis, using modern methods (Cossette, 1993).

With rapidly increasing numbers of excavated sites and faunal remains, it was clear that a better zooarchaeological facility was needed. In 1982, the Ostéothèque de Montréal was started at McGill university, but was moved to the University of Québec at Montréal in 1983.

Many of the zooarchaeological reports from Québec are contract and therefore unpublished. However, recently students are doing graduate zooarchaeological theses on Québec sites, most notably Evelyne Cossette's recent PhD entitled "Assemblages zooarchéologiques et stratégies de subsistance des groupes de chasseurs-pêcheurs du site Hector Trudel (Québec) entre 500 et 1000 de notre ère" (Cossette, 1995).

Maritimes and Newfoundland

Zooarchaeological research in the Maritimes surged ahead of the rest of Canada in the 1960's and 1970's. As early as 1963 C.S. Churcher used modern methods to analyse prehistoric mammal remains from New Brunswick sites, inferring a marked change in diet over time (Murphy & Black, 1996). A long term archaeological project in the Passamaquoddy Bay area, New Brunswick, led by David Sanger (e.g., Sanger, 1987) utilised zooarchaeologists Howard Savage and Frances Stewart to analyse and report on faunal material. Other archaeological projects in the Maritimes and Newfoundland focused on reconstruction of diet, subsistence and seasonality. Considerable work has been conducted on Beothuk subsistence in Newfoundland, and is summarised in an article by Peter Rowley-Conwy (1990). Recently work has focused on documenting ranges of species, including extirpations and extinctions, as well as incorporating new physicochemical methods of analysis to aid in identification.

Northern Canada

In the North, there is also a long history of zooarchaeological research dating back to the 1920's when Therkel Mathiassen, a Dane, analysed the faunal remains from the Fifth Thule Expedition. Later in the century, there was considerable excavation at northern sites and more detailed reporting of faunal remains (e.g., McCullough, 1989). The unique and generally excellent preservation of bone has allowed a variety of techniques to be developed to aid in the analysis of the bone remains. Sectioning of seal teeth, primarily by

Sterling Presley of the Archaeological Survey of Canada, was undertaken to assess age at death. Weathering stages have been used on Devon Island to assess rates of bone loss (Darwent, 1994). Butchering marks, chew marks and bone fracture patterns have also been used extensively to determine procurement and preparation practices. Interpretation of the remains emphasises taphonomy, site formation, and cultural processes as well as the more traditional recording and quantification of remains.

While bone preservation in the Arctic is generally better than in regions further south, one problem unique to Arctic zooarchaeology is the high costs of shipping bones, particularly of larger bones such as polar bears and sea mammals, south to be analysed in greater detail. Such bones are often left in the field after brief analysis.

CANADIAN ZOOARCHAEOLOGY TODAY: AN INVENTORY

The above discussion documents the long history of zooarchaeology in Canada, but what is its status today? In the following discussion I qualitatively and/or quantitatively examine several indicators of its "health" – university courses offered, graduate zooarchaeological theses, osteological collections, number of zooarchaeologists employed as such, and number of published journal articles.

Of the 49 secular universities in Canada, twelve of them, or about 25%, offer undergraduate zooarchaeology courses, although not always annually. Several other universities teach the fundamentals of zooarchaeology within the context of more general courses such as Archaeological Methods. Graduate courses in zooarchaeology are harder to track, as they are often offered as a Reading course to one or two interested students, but about one quarter of the universities offer graduate zooarchaeology courses or the opportunity for more specialised zooarchaeological instruction, again not always annually.

The number of graduate student dissertations with a faunal focus in Canada is not easily available from university sources. However, based on informal discussions I would estimate that there are about one to two Masters dissertations with a zooarchaeological focus completed every year, and one PhD dissertation every two to three years. Several Canadian graduate students are also writing dissertations with a zooarchaeological focus outside of Canada.

The number of zooarchaeologists in Canada making a full-time or part-time living from zooarchaeology can be estimated at about 35 to 40. This number is broken down into 14 full-time faculty within the 49 universities who teach and/or conduct research in zooarchaeology. This number does not include sessional, adjunct or retired faculty, which are difficult to track. Further, there are six zooarchaeologists employed full-time in Canadian museums who undertake full or part-time zooarchaeology. The number of zooarchaeologists employed in private business as zooarchaeologists or working on their own contracts is about 15, and possibly as high as 20. This gives a conservative total of 35 to 40 zooarchaeologists employed as such in Canada, although this number is undoubtedly larger when non-permanent university faculty are included.

There are numerous private comparative osteological collections across Canada, many owned by individuals for their own contract work, or for their own interest. Most Departments of Anthropology and/or Archaeology have their own collections, of varying size and complexity. Notable are collections at the University of Victoria, Simon Fraser University, University of Calgary, University of Alberta, University of Saskatchewan, University of Manitoba, University of Toronto, Trent University, MacMaster University and University of New Brunswick. The two national museums in Ottawa, Canadian Museum of Nature and Canadian Museum of Civilization, both have comparative collections, as do several of the provincial museums. To my knowledge, the four largest and most comprehensive collections belong to the Canadian Museum of Nature in Ottawa, the HG Savage Collection at the University of Toronto, the Department of Anthropology collection at the University of Victoria, and the Ostéothèque collection in Montréal.

In order to assess the number and type of zooarchaeology articles that have been published, I examined articles in three archaeology journals where I considered most articles on zooarchaeology in Canada would be published, *Canadian Journal of Archaeology* (CJA), *Journal of Archaeological Science* (JAS) and *American Antiquity* (AA). *Canadian Journal of Archaeology* is the only Canadian journal to consistently publish zoo-

archaeological articles, although regional journals such as *Arctic* occasionally do. *Canadian Zooarchaeology* publishes short zooarchaeological articles by invitation so was not included here, nor did I include specialised journals such as *Arctic*, as these would bias my examination regionally. *Journal of Archaeological Science* (JAS) and *American Antiquity* (AA) were included as being two widely-circulated journals which routinely publish zooarchaeological articles from any country. My examination was limited to online Tables of Content, which means I included articles from 1993 to 2001 for JAS, from 1977 to 1999 for CJA and from 1996 to 2001 for AA. Only articles which focussed on zooarchaeological data, methods and/or theory were included, not articles where zooarchaeological data was included as a subsection, such as site reports. Only articles on vertebrates and bivalve invertebrates were tabulated, and not those on insects, bone artifacts, coprolites or blood residues. No book reviews or abstracts were included. Further, articles were only considered Canadian if they were undertaken in Canada, unless their content was primarily methodological or theoretical and authors were Canadian.

A total of 1169 articles were examined in the three journals, of which 211 or 18.1% had zooarchaeological data, methods or theory as their focus. Of the two journals based in the United States, *American Antiquity* and *Journal of Archaeological Science*, 21 or 11% of the total 191 zooarchaeological articles had Canadian zooarchaeological subjects as their focus. Figure 2 indicates the trends in journal publishing in the past decade. As can be seen, in JAS, Canadian articles have comprised between about 5 and 15 percent of the total zooarchaeological articles, with greater Canadian content in the early and middle 1990's, but falling off to under 10% since 1997. In *American Antiquity*, for the limited dates shown, the Canadian content complements that in JAS, in that

FIGURE 1
Political boundaries of Canada.

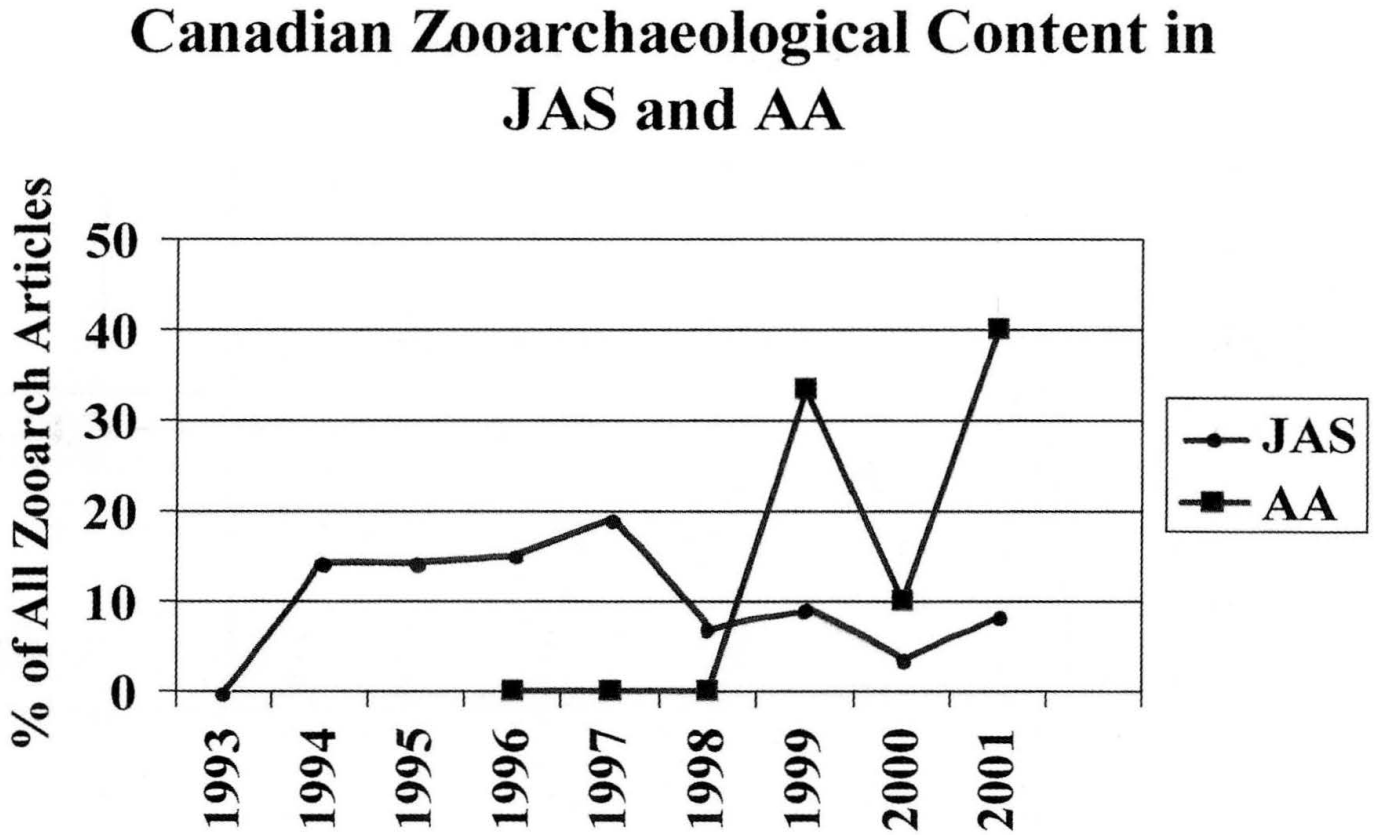

FIGURE 2
Canadian zooarchaeological content in *Journal of Archaeological Science* (JAS) and *American Antiquity* (AA).

it rose steeply from no articles in the years from 1996 to 1998, to 40% for 2001.

Of the total 237 articles examined in the *Canadian Journal of Archaeology*, 20 or 8.4% had a zooarchaeological focus. In the CJA, zooarchaeological content has fluctuated widely through the past 25 years, but with four exceptions has remained between about 7 and 17% since 1983 (Figure 3).

Table 1 indicates the subject and regional focus of the Canadian zooarchaeological articles in all three journals. As can be seen, in the "Type" category, general site faunal reports are less common now than in the middle 1990's, in favour of articles with a methodological or theoretical focus. Mammals are clearly the most commonly reported faunal class, and there is a clear regional preference for publishing results from the West Coast, Prairies and the North.

What do these data say about the state of publishing of zooarchaeology in Canada? First, that Canadian zooarchaeology is consistently being reported both in Canada and abroad, and second, that the consistency averages a respectable 11 percent in non-Canadian journals. At present, this study indicates that publishing of zooarchaeological results is declining in JAS and increasing in AA, but whether this is an ongoing trend remains to be seen. In Canada, the reporting of zooarchaeolgical articles in CJA averages 8.4%, which is less than the average in JAS, where zooarchaeological articles comprise 24.2%, and closer to AA where zooarchaeological articles average 9.6% of the total. I feel however that this percentage underrepresents the total amount of zooarchaeological research undertaken in Canada. CJA only averages a total of eight articles per year, meaning zooarchaeological articles on average only appear every second year. Other Canadian publishing venues are available, including regional journals, and *Canadian Zooarchaeology* which publishes short articles, but I feel that CJA with its national distribution should contain more articles with zooarchaeological content.

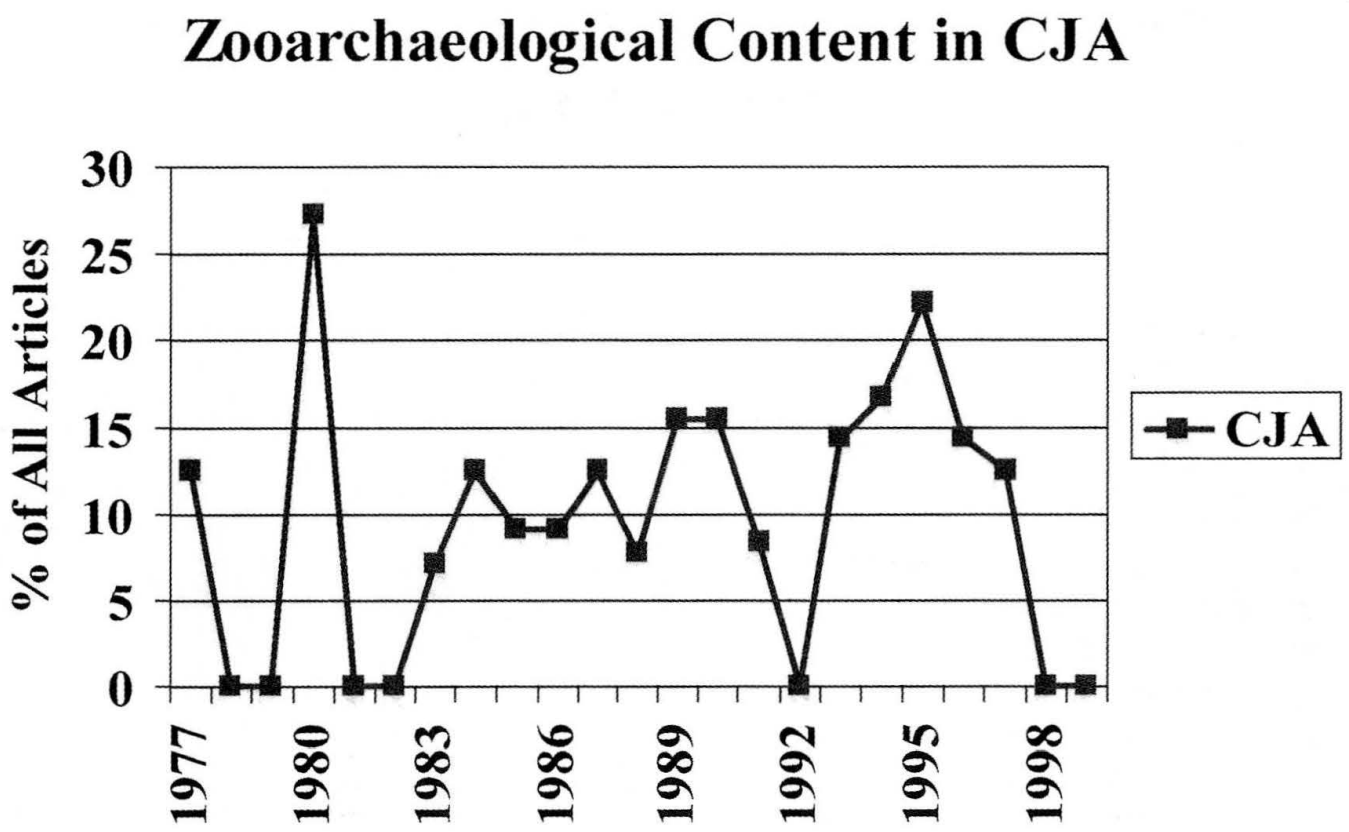

FIGURE 3
Zooarchaeological Content in *Canadian Journal of Archaeology* (CJA).

In terms of trends of Canadian zooarchaeological reporting, there is a striking bias in regional reporting, towards the West Coast, the Arctic and Prairies (which includes interior BC). Clearly Canadian zooarchaeologists are still fascinated by the Northwest Coast prehistoric subsistence, as inferred from the vast shell middens and associated bones, the Prairies with their bison kill sites and the North with its well preserved fauna and unique subsistence adaptations. The lack of zooarchaeological reporting in the East, Maritimes and Newfoundland is surprising, and may just reflect a bias for the period reported. The strong bias towards reporting of mammals over other classes of fauna is also surprising, as I informally noted significant numbers of articles on fish and fishing in JAS and AA. However, given the focus on the North and the Prairies, where mammal kills are common, this bias may not be surprising.

Finally, discussion of the strength of zooarchaeology in Canada should mention *Canadian Zooarchaeology*, a journal/newsletter which was initiated in 1992 and continues to publish twice a year. It carries listings of new articles, books, and events, and publishes short reports of interest to zooarchaeologists working in Canada, and also Canadian zooarchaeologists abroad. The existence for almost a decade of such a specialised publication is further support for a healthy discipline in Canada.

In sum, I feel that the number of working zooarchaeologists in Canada, the number of articles published in CJA and particularly in non-Canadian journals, and the decade-long existence of a journal devoted completely to Canadian zooarchaeology indicates that zooarchaeology in Canada is a healthy discipline. Areas of improvement could be in more zooarchaeological content in CJA.

THE FUTURE?

What will the state of Canadian zooarchaeology be in the future? One clear trend is the change from the 1960's and 70's, when zooarchaeological

analysis was primarily conducted by university- and museum-based practitioners, to the 1980's and 90's where private consultants are increasingly contracting to do this analysis. This may reflect the overall societal trend of greater emphasis on private enterprise and a decrease in funding to university and museum researchers. One result is the large numbers of unpublished reports, with fewer published papers and regional syntheses.

Balanced against this is the increase in numbers of Canadian universities teaching undergraduate and graduate courses in zooarchaeology, and the concomitant increase in zooarchaeological practioners across the country. As editor of the newsletter *Canadian Zooarchaeology,* I have seen an increase in subscriptions in the past 7 years, as well as much better regional coverage across the country.

Another trend is the decrease in refereed journals of site faunal reports, and an increase in articles with a theoretical and/or methodological focus. While I feel this trend is largely positive, there is still a need for reporting of empirical zooarchaeological data through primary excavation and recovery.

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