Journal of Island & Coastal Archaeology, 8:152–169, 2013

ISSN: 1556-4894 print / 1556-1828 online
DOI: 10.1080/15564894.2013.787566

SPECIAL SECTION: Islands, Coastlines, and Stable Isotopes: Advances in Archaeology and Geochemistry

Seasonality and Intensity of Shellfish Harvesting on the North Coast of British Columbia

Meghan Burchell,[1] Nadine Hallmann,[2] Andrew Martindale,[3] Aubrey Cannon,[1] and Bernd R. Schöne[2]

[1]*Department of Anthropology, McMaster University, Hamilton, Ontario, Canada*
[2]*Department of Applied and Analytical Paleontology and INCREMENTS Research Group, Earth System Science Research Center, Institute of Geosciences, University of Mainz, Mainz, Germany*
[3]*Department of Anthropology, University of British Columbia, Vancouver, British Columbia, Canada*

ABSTRACT

Biogeochemical and growth increment analyses show contrasting seasonal patterns of butter clam collection and rates of harvest intensity between archaeological shell midden sites from the Dundas Islands archipelago and the mainland coast in Prince Rupert Harbour, northern British Columbia. Growth increment analysis shows more intensive clam harvest in the Dundas Islands in comparison to the residential sites in Prince Rupert Harbour. Stable oxygen isotope analysis shows multi-seasonal collection of clams in the Dundas Islands and a more seasonally specific emphasis in Prince Rupert Harbour. Comparison of these results to those of similar studies in the Namu region on the central

Received 25 September 2012; accepted 13 December 2012.
Address correspondence to Meghan Burchell, Department of Anthropology, McMaster University, 1280 Main St. W., Hamilton, Ontario L8S 4L9, Canada. E-mail: burcheme@mcmaster.ca

coast of British Columbia provides a basis for broader regional understanding of variation in shellfish harvesting intensity and seasonality on the Pacific Northwest Coast.

Keywords seasonality, subsistence, settlement, stable isotope analysis, Pacific Northwest Coast, multi-site/multi-regional analysis

INTRODUCTION

Interpreting seasonal settlement patterns and subsistence in the northern Northwest Coast region has remained a challenge for archaeologists. There has been some recent emphasis on variation in regional fishing economies (Brewster and Martindale 2011; Coupland et al. 2010), but less consideration has been given to the influence of environmental and historical circumstances that shaped local variation in shellfish use between locations and settlement types. Shellfish provide a valuable geo-cultural archive to examine patterns of harvest pressure as well as the season of collection, and by proxy, the season of site occupation. By employing shell growth increment analysis to determine relative rates of harvest pressure (Cannon and Burchell 2009), and stable oxygen isotope analysis ($\delta^{18}O_{shell}$) to interpret a precise season of collection (Burchell et al. 2012, 2013) it is possible to develop a more comprehensive and fine-grained understanding of how shellfish were integrated into local subsistence practices than would be possible through previous approaches. This study compares seasonality and butter clam harvesting from a wide range of sites, from different environmental settings, specifically comparing sites from the Dundas Islands to the mainland coast in Prince Rupert Harbour in northern British Columbia, Canada (Figure 1). This comparison allows for the identification of regional patterns of shellfish use from two different environmental settings, which likely influenced how and why shellfish were gathered. Further comparison of the results from the northern coast to studies from the central coast allows for a broader understanding of regional settlement and subsistence, with a specific focus on the role of shellfish.

While the north coast of British Columbia has been the subject of archaeological investigation for several decades, mainly through single-site excavations (i.e., Ames 2005; Coupland et al. 2000, 2003; MacDonald and Inglis 1981), only in recent years has the explicit focus of research shifted to regional, multi-site investigations (Brewster and Martindale 2011; Coupland 2010; Martindale et al. 2009; McLaren et al. 2011). These research programs have provided critical insight on variability in regional fishing economies, but variation in shellfish harvesting has been less well documented. General descriptions suggest northern Northwest Coast subsistence was particularly focused on fisheries (Ames and Maschner 1999; Matson 1992). As Moss has pointed out, there is a lack of attention to shellfish consumption and harvesting patterns in general descriptions of Northwest Coast subsistence (Moss 1993; Moss and Erlandson 2010).

Study Area and Subsistence Practices

Located in the traditional territory of the Coast Tsimshian, the Dundas Islands Group and Prince Rupert Harbour provide a unique landscape to assess variability in resource procurement and seasonality. The Dundas Islands are located 14 km west of Prince Rupert Harbour and are composed of five main islands and multiple smaller islets (Martindale et al. 2009). In some parts of the island archipelago it is possible during low tide to walk through the intertidal zones to shell midden sites located on the different islets. Occupation at the Dundas Islands dates back as far as 10,000 years (Martindale et al. 2009; 2010; McLaren et al. 2011). It has been described as a marginal resource area (Ames 1998) because it is relatively isolated from the mainland coast where the major rivers that supported regional fishing economies are located. Shell middens from the Dundas Islands used in this study exhibit variability in shape, size, and depth with a temporal span