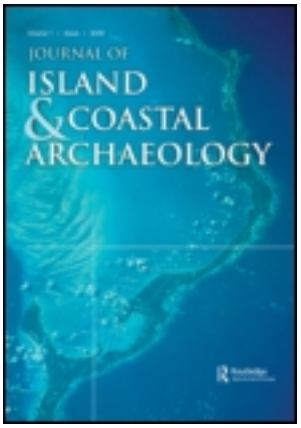

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Marine Ventures: Comparative Perspectives on the Dynamics of Early Human Approaches to the Seascapes of Tierra del Fuego and Norway

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ABSTRACT

The Marine Ventures project seeks to increase our understanding of the early relations between humans and the sea, especially subsistence and maritime voyaging. Through comparative analysis, we are interested in how hunter-gatherer societies have adapted to environmental, material, and social surroundings in two different, yet similar settings: the archipelagos of Scandinavia and Patagonia. The similarities and differences in the natural and cultural settings of the two regions are a valuable source for comparison that shed light on the general dynamics of human environmental interactions and regional landscape and social histories. Marine Ventures addresses these problems in four interrelated components: 1) colonizing seascapes and the dynamics of the development of marine foraging; 2) interactions between logistics (boats) and settlements; 3) dwelling types and settlement structure; and 4) legislation and heritage management. The Norway/Tierra del Fuego comparisons include a variety of distinct methodological, theoretical, and cultural heritage management approaches. The broad comparative framework of the Marine Ventures project is an approach that

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should be useful for archaeologists working in island and coastal settings around the world.

Keywords Skerry/fiord seascapes, early off shore adaptations, Mesolithic Scandinavia, Tierra del Fuego

INTRODUCTION

What are the roots of marine foraging? How and when did this bountiful, yet seemingly risky adaptation emerge and develop? What are the constraints and affordances in the relations between human abilities, choices, and environmental challenges in the marine "venture"? The answers to these pivotal questions in global prehistory are as imperative and multi-dimensional as they are problematic. The more than 100 m postglacial sea-level rise that inundated most of the world's prehistoric coastal areas during the Pleistocene-Holocene transition, likely included a tremendous amount of data about the age and character of early maritime adaptations. Bearing in mind the impact and diversity of marine foraging, and the vast volumes of past and present marine production and harvesting, it is tempting to assume that tight relations between humans and the sea were always present (see discussions in Bjerck 2009; Erlandson 2001; Fischer 1995; Yesner 1987). Although there is evidence of Late Pleistocene marine activities in many places around the world (see Erlandson 2001), the major part of the development of marine adaptations in the high latitudes seems to be a Holocene phenomenon, and thus, a fairly late development in human history (Bjerck 2009; Yesner 1987). This is indicated by the lack of archaeological finds along the oldest shore lines (i.e., the glacioisostatic raised beaches of the high latitudes in Scandinavia, North America, and Patagonia) (Figure 1). In these affluent skerry/fiord seascapes, a marked time lag between initial deglaciation and human colonization is documented (i.e., that the present archaeological record seems to reach back to the very beginning of offshore foraging and traveling). Here we outline the goals and prospects of our Marine Ventures project, exploring the importance of a broad comparative framework for investigating the triggers, trajectories, constraints, and affordances of a maritime lifestyle.

THE SEASCAPES OF SCANDINAVIA AND PATAGONIA

Maritime peoples have a wide range of interactions with the sea, including fishing, hunting, and traveling, that depend on boats which are capable of performing this variety of activities. Occupation of islands and the location of sites near natural harbors are archaeological indicators of maritime adaptations that suggest the use of watercraft (Figure 2) (Bjerck 2009:122). The methodological approach of the Marine Ventures project combines excavations, surveys, and excursions in Tierra del Fuego and coastal Norway. Archaeological, environmental, and ethnographic sources provide important comparative insight between the two regions and we expect synergy and direct communication between researchers with complementary strengths in the field, laboratory, and archives (Figure 3).

What are the scientific advantages of comparing these two distant marine environments? The environmental similarities of the coastal regions of Scandinavia and Patagonia are an interesting research platform that allows us to study how human beings have adapted to their environmental, material, and social surroundings in two different, yet similar coastal settings (Figure 4). They also constitute the "tops of the world" (see Blankholm et al. 2009) on different continents, making them relatively isolated regions prior to historical European voyages. Scandinavia and Patagonia represent a multitude of similarities and differences that are a valuable source of comparison that will

Figure 1. *Late glacial beach formation at 96 m above present sea level at the island of Vega, Northern Norway (see Figure 4). Today, the sea is more than 10 km distant, and barely visible from here. The first settlers at Vega arrived at beaches that at present are found at 80 m a.s.l, shortly after c. 9500 cal BC (10,000 uncal BP), and hunted in the shallow waters that once covered today's farmlands. At the time, 20 km of open seas had to be crossed to reach Vega—an indirect, but highly valid indication of seaworthy vessels. Photo by H. Bjerck (color figure available online).*

enlighten both the general dynamics of human-nature trajectories and the regional histories of landscapes and societies.

The Norway/Patagonia comparison includes variability in archaeological research traditions, methods, theoretical basis, and cultural heritage legislation and management that are of mutual interest to study, encounter, and confront. Marine Ventures aims to work with these problems by exploring four inter-related research themes which we describe below.

Colonizing the Skerry/Fiord Seascapes of High Latitudes

Both regions were strongly influenced by Pleistocene glaciations that resulted in a similar natural history, landscape, and seascape (Andersen and Borns 1997; Hafeez et al. 2012; McCulloch et al. 1997). The 120 m lowering of sea level during the last glaciation is a general and global problem for documenting the antiquity and origins of maritime societies (Bailey 2004; Erlandson and Fitzpatrick 2006). Modern global sea level was not reached before 5000–2000 cal BC (Pirazzoli 1996). Scandinavia and Patagonia are important exceptions, as the post-glacial isostatic movement in general has produced large stretches of raised shorelines where early sites have not been submerged. These ancient coastal landscapes offer special opportunities to track the early development and evolution of maritime hunter-gatherers (Bjerck 2009; Ocampo and Rivas 2005; Piana and Orquera 2009).

The glacial erosion of Patagonia and Norway produced a very characteristic coastal

Figure 2. *"Marine Ventures" researchers visiting Mesolithic sites and seascapes at Vega. Today, this valley is situated 60 m a.s.l.—in the middle Mesolithic this was a long, sheltered cove in a small island surrounded by open sea, that provided a safe landing place adjacent to a single pit house, a hunting station dated to c. 7500 cal BC (8500 uncal BP). From left, Ernesto Piana, Heidi Mjelva Breivik, Birgitte Skar, and Atilio Francisco Zangrando. Photo by H. Bjerck (color figure available online).*

landscape with abundant shallows, skerries, islands, channels, and fiords. This skerry/fiord seascape consists of highly productive marine habitats and sheltered seas that are optimal to maritime foragers. In both regions, late glacial hunter-gatherers are documented in the adjacent plains (Borerro and McEwan 1997; Dillehay 2000:160; Eriksen 2002). The postglacial appearance of viable maritime foragers is another parallel. Archaeological data from archipelagos of Patagonia, Scandinavia, and Arctic North America all suggest a marked time lag of several thousand years (varying) between the late-glacial emergence of this affluent coastal habitat and the initial human occupation of these seascapes (e.g., Fitzhugh 1997; Fuglestvedt 2012; Orquera et al. 2011). Another parallel is that the initial establishment of marine foraging is associated with a rapid colonization of adjacent coastal areas. In fact, the colonization of the skerry/fiord seascapes and the development of marine relations (offshore hunting and transport) may very well be two sides of the same process (Bjerck 2009; Ocampo and Rivas 2005; Orquera et al. 2011; Piana and Orquera 2009). In Scandinavia, the site pattern indicates that seal hunting could have been a cornerstone in the colonizer's subsistence and economic strategies. It is believed that obtaining seals, and especially blubber, was an important motivator in the marine venture. This may also be the case in Beagle Channel, where recent archaeological excavations have pinpointed coastal sites (lithic assemblages) that pre-date the earliest shell middens. Fieldwork and comparative studies of the archaeological and paleo-ecological record of Scandinavia and Patagonia are likely to produce new insights in this dynamic.

Figure 3. *Binushmuka I in Cambaceres, Tierra del Fuego (see Figure 4), before starting the excavation in 2012. This 200 m² large non-shell-midden site was discovered and is excavated as part of the "Marine Ventures" project. Several test pits produced microflakes of the green obsidian that is believed to originate in Riesco Island, c. 400 km north of here. This horizon is dated to approximately. 4800 cal BC (5900 uncal BP), and is related to the earliest canoe traffic/marine foraging in the region. In the silty layer below, there are lithic scatters—whether this is a pre-marine adaptation, or a marine adaptation based on other resources than shells (and hence without organic preservation) is debated. One of these has produced a date of c. 6100 cal BC (7500 uncal BP), not unlike the lithic scatters documented under the shell middens at the Imiwaia I and Tunel I sites, also in the Beagle Channel (Orquera and Piana 2009). Photo by H. Bjerck (color figure available online).*

Interrelations Between Dwelling Sites, Boats, Settlement Systems, and Logistics

How did high mobility and extensive use of watercraft affect the lifestyle of marine foragers? The comparison between archaeological data from Scandinavia and Patagonia provide important data to address this question. The comprehensive archaeological data from the Ormen Lange Project at Gossen in Norway (Figure 4) (Bjerck et al. 2008) outline the earliest sites as strikingly uniform, with small artifact scatters of similar size and composition that seem to represent dwelling floors (possibly tents). This characteristic is prominent in the vast majority of earliest marine foraging groups in the Scandinavian Early Mesolithic (9500–8000 BC) (see Bang-Andersen 2003; Kindgren 1995; Nærøy 2000). Other characteristics include frequent occupations of small islands (meaning that sea-going vessels were involved), the presence of tent foundations, and a total absence of permanent houses—all underlining the highly mobile lifestyle of these people.

The uniformity of settlements is believed to be a result of tight and routine relations between humans and their material companions. It is suggested that extensive use of boats carrying both basic social units and all their material necessities may have structured activity patterns and timing, size and composition of cooperating social groups, and, subsequently, their habitation sites (Bjerck 2013). "Everything

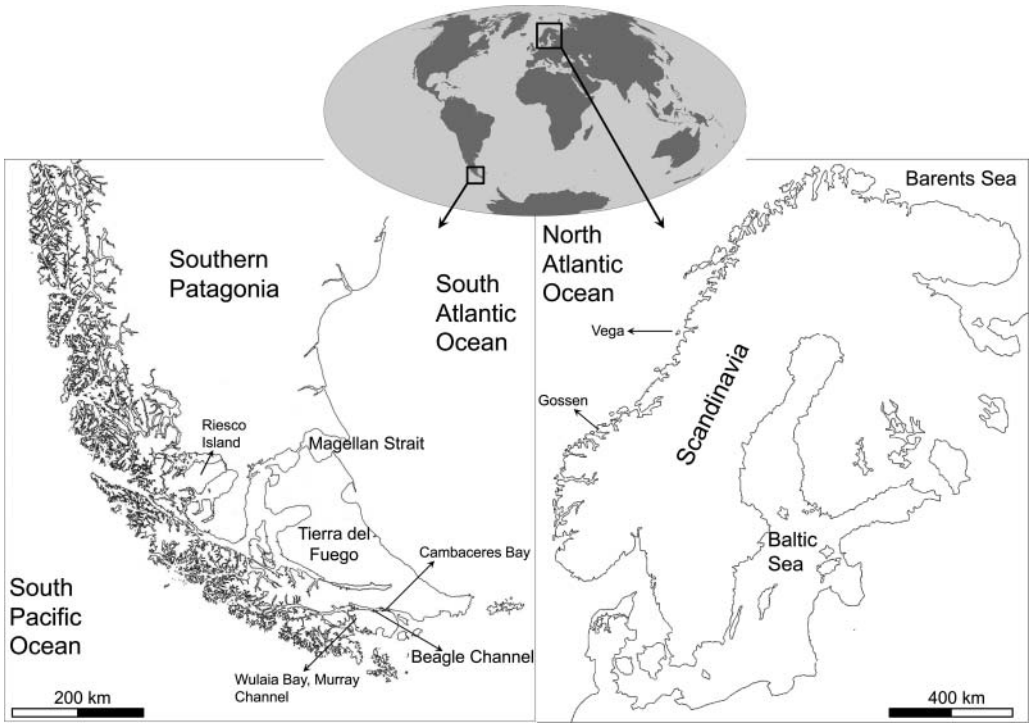

Figure 4. *The study areas and place names mentioned in the text.*

and everybody on board" meant never having to return to a specific site, which allowed for a highly flexible relation to settlements on land. This is in contrast to data from the Middle Mesolithic (8000–6500 BC), where permanent houses (i.e., an investment at a specific site, and an intention to return) and a system of functionally different habitation sites are apparent (Bjerck et al. 2008:565–570). Comparisons with the much wider spectrum of information from settlements in Tierra del Fuego (large scale surveys and excavations, experiments with replicas of dwellings, eye-witness's descriptions, historical photos, linguistics, and written information) is relevant on many levels (see Orquera and Piana 1999a). Detailed information on the technicalities, functions and role of the Yamana bark canoes in the Beagle Channel is of special value in this discussion.

Dwellings and Settlement Structure

In Norway, the marine hunter-gatherer tradition is exclusively associated with prehistoric periods and subsequently, only documented in the archaeological record and with a paucity of organic remains. In Patagonia, this tradition existed (and vanished) along with European colonization, and is well documented in historical and ethnographic records (Bridges 1947; Briones and Lanata 2002; Estévez 2009; Orquera and Piana 1999a; Piana and Orquera 2010) (Figures 5 and 6). Comprehensive archaeological investigations, as well as ethnographic sources from Tierra del Fuego, provide important insight into settlement formation processes, structural elements in dwellings, waste disposal strategies, durability and occupational intervals, and also strategies behind different patterns of mobility and

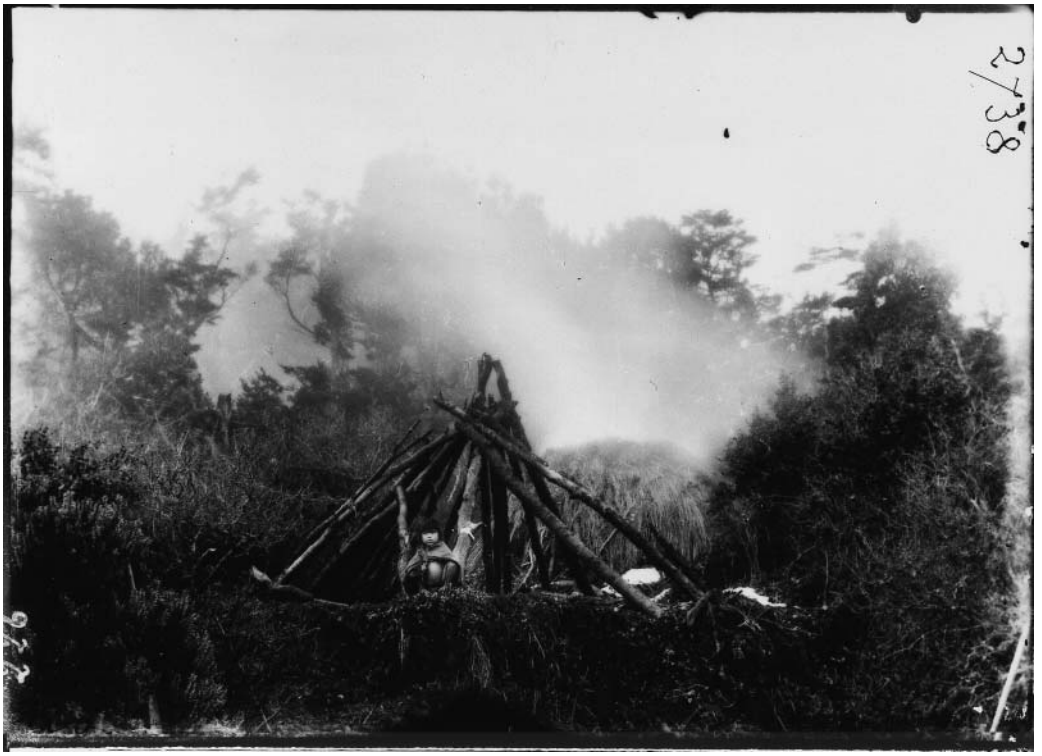

Figure 5. *From Wulaia Bay, the legendary Yamana settlement in Yagashaga (Navarino, Murray Channel), Tierra del Fuego, December 25, 1882. A curious child watches the photographer, Lt. Jean-Louis Doze, member of the "Mission Scientifique du Cap Horn" (1882–1883). This French expedition is one of many that have provided valuable documentation of the lifestyles of the maritime foragers in Patagonia. Note the midden formation around the abandoned dwelling at front. At back, a dwelling in use, with smoke percolating from the grass covered roof. © Musee du Quai Branly/Scala, Florence.*

adaptation. These sources reach beyond the limits of the traditional archaeological record, and offer unique knowledge of the lifestyles and dynamics of the marine tradition.

Organic components at the Patagonian sites are also well preserved. This is a result of the high level of preservation often found in shell middens, including bone and shell artifacts, occasional human graves, and food remains (e.g., Legoupil 2000; Ocampo and Rivas 2005; Orquera et al. 2011; Orquera and Piana 1999b; Piana and Orquera 2009; San Roman et al. 2009; Yesner 2004; Zangrando 2009a, 2010). In Norway, shell middens (and their self-preserving environment) are more or less absent, and most prehistoric sites are badly preserved (Bjerck 2007). This is probably related to a difference in maritime foraging strategies: shellfish harvesting was an important activity in Tierra del Fuego (e.g., Orquera 1999), but not in Norway (Bjerck 2007; Bøe 1934; Indrelid 1978).

Cultural Heritage: Legislation and Management

This aspect of the project focuses on how cultural heritage is defined, assessed, and activated in contemporary management, particularly addressing authorized selection processes versus local understandings of

Figure 6. *Alignment of house pits in Cambaceres, Beagle Channel, Tierra del Fuego. The arrangement of midden material in sheltering walls around huts is a hallmark of the Yamana society that inhabited the southernmost seascapes of Patagonia. In the c. 4 km² area around Cambaceres Bay, our survey have detected 731 similar house pits, in addition to 390 dome-shaped shell midden deposits. Photo by H. Bjerck (color figure available online).*

heritage values (Simonsen 2007; Skar 2006; Skar and Grahn 2013; Smith and Waterton 2009). The study will be based on the analysis of written sources and official documents and supplemented by local interviews with heritage management authorities. This part of the project will compare the physical preservation of heritage given the dissimilar legal frameworks in Norway and Argentina, particularly looking into the sites of Vega, a World Heritage cultural seascape in northern Norway, and the Parque Nacional Tierra del Fuego. Based on interviews, we will analyze implications of different heritage dissemination strategies and aspects of materiality and sociality in today's attitude to heritage and preservation (e.g., Grahn et al. 2011).

FINAL REMARKS

Our expectations are that the Marine Ventures project will improve our knowledge of human-sea relations in different skerry/fiord seascapes. In recent research within Scandinavia and Tierra del Fuego, pinniped hunting has been identified as an important component of the initial development and dispersal of marine foragers. Even more interesting is that this view derives from two different data sources from the Beagle Channel, including the abundance of pinnipeds in zooarchaeological assemblages (Tivoli and Zangrando 2011; Zangrando 2009a; Zangrando 2009b) and the recovery of technology related to the capture of marine mammals (e.g., harpoon points) (Orquera and Piana 1999b, 2009). Organic remains are unknown at the earliest sites on the Scandinavian coast, but site locations in offshore islands indicate that seaworthy boats and seal hunting were important in early human subsistence strategies (Bjerck 2007; Kindgren 1996; Schmitt et al. 2006; Wikell and Pettersson 2009). It is also likely that seal hunting was an important "pull factor" in the marine venture. As a resource,

pinnipeds are similar to terrestrial mammals, with skin and sinew, blood and bones, meat, and abundant fat, having probably also been used to heat dwellings. Pinnipeds could be trapped and clubbed on beaches, without the use of seaworthy boats or elaborate marine hunting equipment. However, this would be increasingly difficult as the animals would shun past kill sites at beaches along the mainland and seek refuge in open sea rockeries and islands. This may have been an important incentive to develop knowledge and equipment to offshore hunting and travelling (i.e., marine foraging; Bjerck 2009).

While shell middens are abundant in the archaeological landscape of the Beagle Channel, accumulations of shells are rare in Mesolithic sites of Norway. This suggests that foraging strategies were different and that the roles of minor resources can be variable between different skerry/fiord seascapes. This is also due to archaeological preservation with different formation and preservation processes operating on organic and inorganic materials in Beagle Channel shell middens and the inorganic materials from surface sites in Norway. This raises interesting methodological challenges for investigating human-sea relations from a comparative perspective. The study of settlement patterns compared to coastal landscape changes using GIS could function as a tool for dialogue between archaeologists working in different regions.

We also expect that this comparative study could improve our understanding of how divergent histories in human-sea relations may develop, also in similar natural settings. Fishing grew in importance throughout the history of hunter-gatherers who inhabited both Norway and Patagonia. However, the intensification of fishing appears to have led to different socioeconomic regimes. In Norway, settlements reveal increased sedentism from the Early to the Late Mesolithic; in the Beagle Channel there are no apparent changes in the settlement structure along the 6,500-year-long sequence of marine foraging. This supports the idea that intensified fishing is a multi-dimensional process (Zangrando 2009a), which is also proposed for the Pacific Coast of North America (Moss 2012; Rick 2011).

In sum, the Marine Ventures project addresses not only theoretical challenges, but also those methodological and analytical in nature. Our approach is important for transcending the general arguments that are normally handled in scholarly debates, and instead focuses on more direct communication between researchers with complementary competences in the field and laboratories. The next few years of our research initiative should provide exciting new results and we hope it will stimulate other archaeologists to conduct broad comparative studies from different coastal and island settings that shed light on past human behaviors in island and coastal settings.

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