

# Marine ventures. Comparative perspectives on the dynamics of early human approaches to the seascapes of Tierra del Fuego and Norway

## 1. Relevance

The present project addresses in particular the thematic area 3.3 Culture and Society of the Latin-America work program by focusing on a comparative assessment of human approaches to adaptation to seascapes of Tierra del Fuego and Norway. While the Norwegian record on this issue is solely archaeological, this type of livelihood lasted until the European colonization in Patagonia and is thus recorded in written source material as well as being part of the identity and the collective memory of local people. The project involves skilled scientists and educational components both on the Latin-American and Norwegian side thereby meeting the program's goals on human capacity building and inter-generational transfer of knowledge. The project is furthermore in compliance with international charters on cultural heritage particularly of the Council of Europe Framework Convention on the Value of Cultural Heritage for Society (Faro, 27.X.2005) and UNESCO's convention on heritage protection and education in recognizing that every person has a right to engage with the cultural heritage of their choice and convinced of the need to involve everyone in society in the ongoing process of defining and managing cultural heritage and the soundness of the principle of heritage policies and educational initiatives which treat all cultural heritages equitably and so promote dialogue among cultures and religions.

## 2. Aspects relating to the research project

### 2.1 Background and status of knowledge

For almost a decade, NTNU Vitenskapsmuseet has been involved in Argentinean and Chilean research networks studying marine foraging societies. The starting point was *prof. Hein B. Bjerck's* two month study trip to Chile and Argentina in 2001/2002 (Bjerck 2001) that initiated an informal, but fruitful and productive communication that have produced conferences, scientific papers and new, bilateral study trips between Norway and Latin America (e.g. Bjerck 2009, Blankholm *et al.* 2009, conference contributions in CV Bjerck, CV Piana). In 2008, on behalf of a consortium including several Norwegian and Latin American archaeological institutions (and Universidad Autònoma de Barcelona, Spain), NTNU Vitenskapsmuseet presented an application to the Latin America program (pre-project, "Bipolar Comparisons", Application ES440749). This application did not receive funding.

However, this field of research has been taken further by NTNU Vitenskapsmuseet by means of internal funding. A new study trip, this time concentrating on Argentinean Tierra del Fuego and cooperation with *Lic. Ernesto Piana* and *Dr. Atilio Francisco Zangrando* and CADIC (Regional, multidisciplinary department of CONICET in Ushuaia) took place in 2009. In agreement with CADIC, NTNU Vitenskapsmuseet has decided to develop this relation to a formal, bilateral project. As a part of this, NTNU Vitenskapsmuseet has established two four-year PhD scholarships that were started in 2010 (*Heidi Mjelva Breivik* and *Silje Fretheim*). Both projects are supervised by Bjerck. The two projects have a point of departure in Norwegian Stone Age – but also include extensive comparative studies with Latin America relating to heritage management legislation and practice, thereby linking this project to two

ongoing RCN projects (183300 and 184119). This research is presently undertaken on the Norwegian side (*ass.prof. Birgitte Skar NTNU Vitenskapsmuseet, earlier NIKU*) under the Environment 2015 program.

Bjerck, Breivik and Fretheim plan to take part in CADIC's field research in Tierra del Fuego in February 2011 (own funding). This will provide an opportunity to get an early start prior to RCN funding for the present research cooperation with CADIC staff Piana and Zangrando – all depending on the financial prospects for the joint project.<sup>1</sup>

In short, NTNU Vitenskapsmuseet has established a firm research platform by means of own funding, but are not able to release the potential of this “investment” without external funding. Compared to the former “Bipolar Comparisons”, the new project “Marine ventures” is focused on a more targeted specter of research objectives, and embraces fewer institutions and researchers. We believe that our project has the scientific and structural potential to produce high quality research that will enhance knowledge about Latin America in Norway.

What are the scientific advantages of studying these two distant regions in the same project? Not only do they constitute the “tops of the world” (cf. Blankholm *et al.* 2009) – they also are situated on different continents – thus excluding all kinds of cultural contacts prior to the European travellers in the Historical periods. The latter is one of the obvious scientific advantages – that allow us to study how human beings have adapted to their environmental, material and social surroundings in two different, yet similar settings. Compared to Norway, the southern cone of the South American continent (i.e., southern part of Chile and Argentina, in the following referred to as “Patagonia”) represents a multitude of similarities and differences. This mixture constitutes a valuable source of comparisons that will enlighten both the general dynamics of man–nature trajectories and regional histories of landscapes and societies in the two regions.

Environmental (climate, biology, ecology, natural history, landscapes and seascapes ) similarities are parallel key factor – both in past and present. Both regions were strongly influenced by the Pleistocene glaciations – which resulted in a similar natural history (Andersen and Borns 1997, McCulloch *et al.* 1997). Global lowering of sea-level during glacial periods is a general and global problem for the understanding of the roots of maritime foraging societies (Erlandson and Fitzpatrick 2006). The present sea-level was not reached before approx. 5000 – 2000 yrs. BC – meaning that the archeological record of the World's coastal areas prior to this was flooded, and hence very difficult to study. Scandinavia and Patagonia are important exceptions, as the post-glacial isostatic movement produced raised shorelines. These ancient coastal landscapes offer special possibilities to track the earliest development of maritime hunter-gatherers in a global context (Ocampo and Rivas 2005, Bjerck 2009, Orquera and Piana 2009).

The glacial erosion of Patagonia and Norway produced a very characteristic coastal landscape with abundant skerries, islands, channels and fiords. This seascape constitutes highly productive marine habitats – and sheltered seas that are optimal to maritime foragers. In both

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<sup>1</sup> Study trip undertaken by Breivik and Bjerck February 14 – March 9, 2011. Fretheim could not go as planned because of her pregnancy. The stay in Tierra del Fuego provided a valuable opportunity to gather additional information, and discuss details of our joint project

the two regions, hunter-gatherers of late glacial age are documented in the adjacent plains (Eriksen 1996, Borerro and McEwan 1997, Dillehay 2000:160). Also similar is the Holocene development of viable maritime foragers. Surprisingly enough, the archaeological data from Patagonia and Scandinavia suggest a marked time lag between the late-glacial emergence of this bountiful coastal habitat and the initial human occupation (Mena 1997, Piana 2005, Ocampo and Rivas 2005, Bjerck 2008, 2009, Orquera and Piana 2009). The triggers and trajectories in the dynamics of the human maritime venture are poorly understood – and again – comparative studies of the archaeological and palaeo-ecological record of Norway and Patagonia are prone to produce important insight.

Important differences enhance the value of the comparisons. In Norway, the maritime based hunter-gatherer tradition is associated with prehistoric periods, and subsequently only documented in the archaeological records. In Patagonia, this tradition existed (and vanished) along with European colonization – and is well documented in historical and ethnographic records (Bridges 1947, Orquera and Piana 1999, Briones and Lanata 2002, Estévez 2009). Quite unique is Rev. Thomas Bridges “Yamana–English Dictionary” – that provides a very valuable description of hunter-gatherer lifestyles, communication and world view. These sources offer unique insight in the lifestyles and dynamics of this tradition that are of great value in comparisons – and reach beyond the limits of the archaeological record. Moreover, the organic components in Patagonia’s archaeological record are well preserved. This is related to the self-conserving environment in Patagonia’s abundant “conchales” or shell middens – with numerous artifacts of bone and shell, occasional human graves, and amounts of food remains (e.g., Orquera and Piana 1999, 2009, Yesner 2004, Ocampo and Rivas 2005, Piana 2005, Piana and Orquera 2009, Aspillaga *et al.* 2006, Zangrando 2009, 2010). In Norway, shell middens (and their self-preserving environment) are more or less absent, and most prehistoric sites are badly preserved. This is probably related to a difference in maritime foraging strategies – shell/sea mammals in Patagonia, and fish/sea mammals in Norway (Bjerck 2007). The abundance of organic material from Patagonia constitutes yet another valuable source of comparison.

Obviously, the amount of organic material has produced differences in current research traditions. The Latin American archaeology includes a network of highly competent and very active researchers of organic remains, and strong interdisciplinary traditions. The abundance of data and the scientific environment in Argentina poses a unique possibility to study details in foraging strategies that will be instrumental and has a great transfer value to Norwegian archaeology – that is likely to stimulate interdisciplinary studies in Norway.

The Norway/Patagonia comparison also includes a multitude of variations in archaeological research traditions, methods, theoretical basis, cultural heritage legislation and management – that are of mutual interest to study, encounter, and confront, particularly taking international charters into account. While the heritage management component is included in work package 4 below, other issues will be valuable spin-offs from the general knowledge that is produced in this project.

## **2.2 Approaches, hypotheses and choice of method**

As suggested by the title, this project aims at increased understanding of the relation between humans and the marine environment. The methodological approach is many-sided. One is participation CADIC’s on-going field work in Cambaceres/Imiwaia (Haberton, Canal Beagle), where settlements around the earliest marine foragers are being mapped and

excavated. Another is to study the records of earlier investigations in Cambaceres and other relevant locations (Tunell, Remolino, Lapataia, Encenada). Field studies (excursions, participation in on-going excavations) are also planned in Central Norway. It is imperative to learn from the multitude of archaeological, environmental and ethnographical sources and we expect an important synergy of close and direct communication between the partners with complementary competences – in the field, the laboratories and the archives – both in Tierra del Fuego and in Norway. As a part of this transfer of knowledge strategy, a four month grant for an Argentinean scholar (Zangrando) is planned adding to the two mentioned PhDs and two master students.

We aim at working with these problems in four interrelated work packages:

### **WP1 Colonizing seascapes**

The starting point of the study is the earliest coastal settlements in Norway, which is the earliest documented marine foraging society in Northwest Europe. In fact, it is suggested that the earliest development of a marine subsistence in this region is closely linked to the colonization of the Scandinavian seascapes, ca. 11,500 years ago (Bjerck 2009). This field of research is a pivotal point in Heidi Mjelva Breivik's PhD project. Breivik's project has an empirical base in the abundance of early settlements in Northwest Norway, and aims to study the emergence of a specialized marine adaptation and the dynamics of the man-environment relation.

This field of research is also a main focus in CADICs archaeological studies in Tierra del Fuego, including on-going and future field studies aiming at new data. The similarities in the seascapes of Patagonia and Norway make a suitable area of comparison. The diverse and abundant marine fauna has made a dependable resource base for marine settlers for millennia, and specialized marine adaption can be traced in the archaeological material from ca. 5500–5000 years BP (Orquera and Piana 1988, 2009).

Excavations conducted in Norway the last 10–15 years have resulted in large collections of artifacts from the earliest settlement phase. The scanty organic remains from prehistoric periods in Norway imply that resource base and economical patterns are restricted to general knowledge based on indirect evidence. The abundant organic remains from the shell middens in Patagonia represent an invaluable source of information in this field. The accumulations of food remains demonstrate substantial variations in marine subsistence strategies, and comparative studies will definitely reveal details and relations of great value in interpreting the Norwegian data.

Furthermore, the ethnographical records from the coastal societies of Patagonia can activate the Norwegian archaeological record in new ways in order to gain an understanding of a coastal adaptation. To explore this in more detail, it is suggested to include a four month research grant that allow a competent Argentinean researcher in zooarcheology (Zangrando) to study the relations between sites, landscapes, and inferred biotopes in Norway. This will also be an option to learn from the elaborated interdisciplinary research tradition in Patagonia that will have important synergy effects in Norway – stimulating interdisciplinary networks and expertise. Put together, these sources will make a great empirical base for the study of processes around the appearance of specialized marine societies. We expect to reveal details in the dynamics of this process – factors and relations in society and environment that are important agencies in this trajectory.

Bjerck will be responsible for this WP, which will also include Breivik, Piana and Zangrando. The main methodological approach to WP1 field observations in Cambaceres and Canal Beagle and Central Norway, archive studies combined with exchange of ideas and viewpoints between partners. This line of research is in addition highly relevant to the Pioneer-network in the RCN funded Strategic Research in Norwegian University Museums, where Breivik and Bjerck are involved.

## **WP2 In the wake of boats: Settlements and logistics in Early Mesolithic Norway and Argentinean Tierra del Fuego**

How did high mobility and extensive use of boats affect the lifestyle of marine foragers? This is a focal point in Bjerck's current research. Departing from the extensive archaeological data from the Ormen Lange Project in North-West Norway (Bjerck *et al.* 2008), the earliest maritime sites in Norway are strikingly uniform – small artifact scatters that seem to represent dwelling floors. This characteristic is prominent in the vast majority of earliest marine foraging groups in the Scandinavian Early Mesolithic (9500–8000 BC). This uniformity is interpreted as a result of a tight relation between logistics, social groupings and camps sites: Extensive use of boats carrying basic social units and their material necessities, may have structured the size and social composition of co-operating social groups and their habitation sites. This is contrasted by data from the Middle Mesolithic (8000–6500 BC), where permanent houses and a system of functionally different habitation sites are apparent (Bjerck *et al.* 2008:565–570).

The triangle between archaeological data from Norway and Patagonia, and ethnographic sources in Patagonia offer fruitful options to advance in this field of research. The shell middens in the Canal Beagle area contain numerous uniform house pits that seem to represent basic social units (Orquera and Piana 2010). There are also abundant historical data on dwellings and boats that offer a deeper understanding of the archaeological record (Orquera and Piana 1999). This empiric base, enforced by recent theories of the strong and interactive relationship between humans and their material surroundings (e.g. Olsen 2010) may shed light on dynamics in maritime societies that are presently in the dark.

Bjerck will be responsible for this WP, which also will include Piana and Zangrando. The main methodological approach to WP2 is archive studies of the archaeological and ethnographic documentation of settlements, dwellings, and use of boats – combined with exchange of ideas and viewpoints between partners.

## **WP3 Dwellings and settlement structure**

Silje Fretheim's PhD-project "*Dwellings and societal changes during the Late Mesolithic*" is also rooted in the Ormen Lange Project. Uncovering and examining large surfaces on and around the surveyed sites was an important methodological strategy, which produced remains of a number of Late Mesolithic (6500–4500 BC) dwellings in a part of the country where such features were practically unknown (Åstveit 2008).

Fretheim's PhD project aims to explore the characteristics of the documented dwellings, their construction, the internal and external structure of activities, and the processes that have rendered them the way we find them today. Is it possible to detect interregional trends in the development of Mesolithic dwellings, or are structural variations a result of differing seasonal movements, activity patterns, and environments? Which factors of stabilisation and change

affected the Norwegian Late Mesolithic society, and how are these factors linked with the transition to a more sedentary lifestyle?

Comparisons with the much wider specter of information from sites in Tierra del Fuego (large scale mapping, excavations, photos, descriptions, experiments, cf. Orquera and Piana 1999, 2010) is relevant on many levels: Regarding questions on the formation of the structural elements that form the dwellings, regarding waste disposal strategies and the durability of the settlements, and regarding strategies behind different mobility patterns and adaptations within foraging cultures in a maritime habitat.

Bjerck will be responsible for this WP, which also will include Fretheim, Piana and Zangrando. The main methodological approach to WP1 field observations in Cambaceres and Canal Beagle and Central Norway, archive studies combined with exchange of ideas and viewpoints between partners.

#### **WP 4 Legislation and heritage management**

The project will be linked to aspects of ongoing research within the two RCN funded project on the world heritage site of Vega within project no 183300 LAND: “Cultural heritage as an asset for economic added value; selection processes from a coast–inland perspective” and project no 184119 LAND: “VEGA 2045: World heritage and local knowledge – integrated modeling and scenario building for nature and cultural heritage management” regarding the comparative assessment of cultural heritage legislation and management practice particularly taking international charters into account. The central issues of this work package being how cultural heritage is defined, assessed and activated in contemporary management particularly addressing authorized selection processes versus local understandings of heritage values (Skar 2006, Skar and Grahn (in press), Ashworth *et al.* 2007, Simonsen 2007, Smith and Waterton 2009). The study will be based on a study of written sources and official documents and supplemented by interviews locally and with heritage management authorities. The Norwegian empirical material has already been collected within the mentioned ongoing projects and is presently being analyzed, while the Argentinean component will be included in the present project.

Ass. Prof. Birgitte Skar, NTNU Vitenskapsmuseet will be responsible for this WP together with Piana and Zangrando, and a master student (Norway).

#### **2.3 The project plan, project management, organization and cooperation**

The project will be organized in work packages where CADIC scientists and Norwegian scientists work together as described above. The overall project management will be performed by prof. Hein Bjerck. Norwegian partners are ass. prof. / Head of Department Birgitte Skar, and PhD candidates Heidi Mjelva Breivik and Silje Elisabeth Fretheim. Argentinean partners are Lic. Ernesto Piana and Dr. Atilio Francisco Zangrando.

Scientific network and competence: The project is planned to produce a viable research network strengthening research competence in this field, which will also be useful for a wider research community, e.g. members of the Pioneer-network in the RCN funded Strategic Research of Norwegian University Museums (“Forskning i fellesskap”).

Scientific papers and PhD dissertations. We expect to produce 8–10 peer reviewed scientific papers published in international journals, written by one or more members of the Marine

Ventures project. At least two of these papers will constitute vital parts of Breivik and Fretheim's PhD dissertations (that are planned as a collection of related papers).

MA-projects. As Vitenskapsmuseet is part of the NTNU archaeology education, we plan to initiate two MA-projects – supervised by Bjerck/Skar. The MA-projects will be linked to the research objectives mentioned.

International conference “Marine Ventures” in Trondheim. This will make possible a widening of the research network, and bring to light a global research status that is important to grasp the dynamics and variability in human approaches to the marine environment. The conference is planned to include a peer reviewed publication.

In fact, Trondheim already host an international conference that focus the other end of this development – i.e. the latest achievements in aqua culture (AQUA NOR). We believe that it would be of interest of both parties to synchronise and link these events.

Exhibition. The main objective of Marine Ventures is to produce high quality research. However, as NTNU Vitenskapsmuseet is one of the mayor Norwegian institutions in public archaeology<sup>2</sup>, we have a special responsibility to communicate scientific results to a broader audience. We think that this is an important part of highlighting and implementing knowledge about Latin America in Norway. Hence, we would like to suggest an exhibition based on the project – including the spectacular photo documentation of the “Sea Nomads” of Patagonia (the Yamana and Kaweskar tribes) in late 1800s. There are also very interesting written sources – e.g. Darwin's first close encounter with “savages” on board on HMS Beagle in the mid-1800s. In fact, HMS Beagle brought four Fuegian youngsters all the way to England, were they enjoyed (?) a year of civilized lifestyles before three of them was returned to Tierra del Fuego. This, and other related stories are “stranger than fiction”, but also highly instructive for the understanding of a lifestyle that perished just a few decades after the contact with the civilized world. The timing of the exhibition is planned to be linked to the “Marine Ventures Conference”.

TV-production. The Norwegian state broadcasting (NRK) has shown interest in making a production that follows the trajectories of the research project. Marine Ventures is a well suited project with numerous exotic details and overviews. We are in dialogue with NRK on a production that focuses on both ends of the Norway/Argentina comparison – and presented in a form that will be attractive both for a Nordic and a Latin American audience. The outcome of this possibility depends on internal priorities in NRK.

## **2.4 Budget**

The payroll expenses and expenses related to the visit to Tierra del Fuego in 2011 is already funded by NTNU Vitenskapsmuseet. However, the established funding does not allow for a more elaborate presence in Latin America, including a close engagement with the valuable records of the region and innovative cooperation with Latin American colleagues. With this application, we hope that RCN and the Latin America Programme may allocate additional funding that may realise the full potential of this “investment”. Some comments to budget and funding:

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<sup>2</sup> NTNU Vitenskapsmuseet was awarded as “Museum of the Year” in Norway in 2010.

Payroll. Although Marine Ventures are given priority in own research time, Bjerck will not manage to follow up project management, practical organisation, and supervision in addition to necessary research activities within this frame. The need for more time during the project period 2011–2014 is stipulated to 10 months (in addition to 8 months of Bjerck's own research time). The budget also includes a research grant that enables a competent Argentinean zooarchaeologist (Zangrando) a 4 month stay at Vitenskapsmuseet.

Travel and Accommodation. The joint operation with CADIC in Tierra del Fuego is very cost effective to the project, as this allows us to take advantage of existing infrastructure, both in Argentina and Norway.

International conference and Exhibition. Preparing and organising conference, proceedings and exhibition are suitable tasks to be covered by the 25% museum-related work that is included in the two PhD scholarships. The exhibition is planned with a minimum of original archaeological object that will minimise costs. The museum has allocated resources for the exhibition, but additional funding is needed.

TV-production. If NRK chooses to go along with this, NRK will cover their own production costs, but we guess that some support for traveling and accommodation will be an important contribution to make this happen. The present budget include travel/accommodation to Ushuaia for 3 persons x 2 trips is included, NOK 180 000. If the TV-production will not be realised, we are prepared to reduce the budget accordingly.

### **3. Perspectives and compliance with strategic documents**

#### **3.1 Compliance with strategic documents**

The Marine Ventures project is in compliance with NTNU Vitenskapsmuseet's strategies on being an acknowledged international producer of knowledge, underpinning sustainable cultural- and natural heritage management as well as being in lead nationally within science communication and an active partner in the societal debate based on a solid engagement with conservation ideological research. The project is also in line with the Museums goals on MA/PhD candidate recruitment.

#### **3.2 Relevance to society**

Very often, the most important value of seeking knowledge abroad is new insights and perspectives of your starting point. This is also expected to be the case in this project. Developing knowledge about the cultural history of Patagonia, and the dynamics of the adaptive strategies that are found here, will contribute to an scholarly and public awareness of Norway's and Tierra del Fuego's important role in the general understanding of marine subsistence strategies. The scholarly and public awareness of these roots is an important backdrop for the current marine venture – in developing productive and environmentally sustainable fisheries and coastal management systems. The comparative assessment of policies and practice within heritage management between Norway and Argentina will give important feedback on the ramifications of implemented policies on both sides, this part of the project will also give recommendations for future improvement of management practice regarding local participation in heritage management. Thus, the scientific achievements in the Marine Ventures project will demonstrate the value and relevance of knowledge of Latin America in Norway and vice versa.

#### **3.3 Environmental perspectives**



The marine ventures project is expected to generate positive environmental impact in raising awareness about pre-colonization civilizations and input to sustainable management of heritage. We do not foresee any negative environmental impact.

### 3.4 Ethical aspects

The project will adhere to all relevant professional ethical guidelines, particularly concerning the use and keeping of interview material.

### 3.5 Gender equality and gender perspectives

The project has a balanced group of partners consisting of three women and three men

## 4. Communication with users and utilisation of results

### 4.1 Communication with users

The project will involve local participant through interviewing and on-site dissemination related to archaeological investigations. Results will be disseminated back to end-users through the planned exhibition as well as the potential TV program. Scientific results will be disseminated through international publishing, popular articles and newspaper articles towards the scientific community, management authorities and politicians and the general public.

### 4.2 Dissemination plan

The project will establish and maintain a scientific network between Latin America and Norway. The project will result in 8–10 peer reviewed articles in international journals as well as a number of popular scientific articles. Two PhD dissertations and will include Latin American and Norwegian perspectives in comparative studies. Two MA projects will stimulate further recruitment within this field as well as giving input to the work packages. An international conference on Marine Ventures to be held in Trondheim Norway will contribute to disseminate results to the scientific community and an exhibition that is to be presented at the same time as the conference will help enhance knowledge of Latin-America among the general public. The potential TV production if funded is expected to have an important impact for transfer of knowledge towards the public.

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