

A brief report of the “Marine Ventures” study trip to Tierra del Fuego, Argentina, 2012

WP 1-3: Fieldwork in Haberton / Cambaceres, Canal Beagle

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Snow covering the ground in Cambaceres, February 26. The kitchen tent to the right.

“Marine Ventures” is aimed at comparative studies of archaeological sites in Canal Beagle, Argentinean Tierra del Fuego, and Mesolithic settlements in Norway. Of particular interest are the circumstances around the initial developments of marine adaptations, and the dynamics between settlements, logistics and adaptation in marine environments.

“Marine Ventures” is owned by NTNU Vitenskapsmuseet, and supported by the Research Council of Norway (project no 208828). The project is subdivided in four work packages (WP1–4). The fieldwork in Cambaceres in 2012 was focused on the WP1 “Colonizing seascapes” and WP2 “In the wake of boats: Settlements and logistics in Early Mesolithic Norway and Argentinean Tierra del Fuego”, and to some extent WP3 “Dwellings and settlement structure”. There were also substantial advances in WP4 “Legislation and Heritage management”, cf. report by Birgitte Skar.

In addition to the Norwegian contingent Bjerck and Breivik, Norway; the staff included the Argentinean key partners Lic. Ernesto L. Piana and Dr. Atilio Francisco J. Zangrando from CADIC, assisted by Dra. Angélica Montserrat Tivoli (CADIC), María Paz Martinoli, Daniela Veronica Alunni and Ernesto Gonet. Germán Pinto Vargas (CADIC) and Jorge Lucas Sosa (Museo del Fin del Mundo, Ushuaia) participated in parts of the period. Ass.prof. Birgitte Skar and MA candidate Karen Ørbog Oftedal from NTNU Vitenskapsmuseet visited the camp 19th–22nd of February, partly doing work for WP1–3, and partly for WP4 (see own report).

The field studies were focused on Haberton / Cambaceres, and included excavations, test pitting, stratigraphical surveys, and observations of different types of landscapes and archaeological sites.

The trip was undertaken in the period 29th of January to 7th of March 2012:

January 30:	Arrival in Ushuaia.
February 1:	Excursion to eastern part of Tierra del Fuego.
February 3:	Departure for Cambaceres/Haberton. Excavation and test pitting at Binushmuka I and Alashuaia.
February 20:	Excursion to Moat.
February 27:	Return for Ushuaia two days early because of difficult weather conditions.
March 3:	Departure for Buenos Aires.
March 5:	Meeting at Real Embajada de Noruega, ambassador Nils Haugstvedt.
March 6:	Departure for Norway.

The first few days were spent in Ushuaia buying necessary equipment and doing the last preparations for the planned campaign in Cambaceres.

Visit to the Atlantic Tierra del Fuego, the land of the Selknam. February 1 there was an excursion to an ongoing excavation at the site Las Vueltas 1, believed to be a Selknam hunting place for guanaco. The site is located in the eastern part of Isla Grande, c. 25km NW from Rio Grande on the Atlantic coast, c. 5km from the present shore line, and is excavated under the management of Dra. Mónica Salemme and Fernando Santiago. The site was visible by great concentrations of lithic debris and instruments together with well-preserved guanaco bones. There are two main levels, a) one recent assemblage of guanaco bones dated to c. 950 – 550 ¹⁴C years BP, and b) a similar assemblage from c. 3200 BP. The location at a narrow land strip between two lakes was probably strategically used in the hunt. We also visited Pafoy 3, a site with a series of low, wide shell middens at the base of a steep slope, c. 2.5km from present shore line (cf. map, page 7). There are no dates from these sites yet. The excursion also gave an opportunity to study the flat and open landscape which is totally different from the environment in which we are working in Canal Beagle.

The fieldwork in Cambaceres, Haberton was conducted in the period 3rd–27th of February. The camp in Cambaceres was established in the small valley adjacent to the Binushmuka I site, with personal tents, *Carpa de Cocina*, water supply and washing place. Tents were also erected over the excavation and the screening station – as all excavated sediments were to be dry-screened.

Apart for periods with very good weather, the ambient conditions during the 2012 campaign was rather harsh. Strong winds inflicted damages to the excavation tents, and made dry-sieving a very dusty experience. Most of the time it was cold; below freezing during the night was common, and at two instances there was snow covering the ground. The weather conditions were partly compensated by some meals in the heated facilities of the restaurant at Haberton, partly by keeping plastic bottles filled with hot water under the jackets in the evenings, and in the sleeping bags during night.

Binushmuka I: The excavation was conducted at the site Binushmuka I – the locality that was found by test pitting during the surveys of 2011. The aim for the field work was to get more information about the two phases of the Binushmuka I site (extension and artifact distribution, stratigraphy, archaeological material, age). It was also an aim to understand the connection to the other sites in the area (especially Imiwaia I, which in many ways are similar to Binushmuka I), as well as the environment with a particular focus on maritime relations.

The main excavation was located to the area where the green obsidian flakes and the horizon of flakes in the underlying silt layer (Layer S) had been located in 2011, (the 100X 100Y-trench, 16m²). In parallel with the excavation, a larger area was test pitted with 4m intervals (23 tps – 50x50cm, all in all 5,75 m²), eventually depicting a site area of more than 600m². An important result from the test pits was the location of yet another scatter of green obsidian, and also a new horizon of lithic artifacts in Layer S in the adjacent test pit. This area was investigated in greater detail by a 3,5m² trench (the 84Y-trench) that included both these features. In addition, nine test pits were placed in adjacent areas in order to get a picture of different parts and levels of the area.

Important knowledge of the stratigraphy and taphonomic processes at the site was gained. The artifacts were associated with two different stratigraphic contexts:

- Layer C, a gravel layer positioned below the turf (*champa*) and the silty Layer S. Data from the excavation conclude that this is a colluvium from local outcrops of till, a process that more or less terminated in parallel with the establishment of the vegetation cover. The main part of the artifacts was collected from this layer.
- Layer S, a silt layer that seem to be of eolian origin, a process that also terminated by the vegetation cover. In two places, horizons of artifacts were detected in the body of Layer S.

All in all, around 2300 artifacts were recovered – c. 1150 from the main excavation around 100X 100Y (16m²), c. 500 from the 84Y-trench, and c. 650 from the test pits. The material associated with Layer C contains well above 90% flakes (c. 40 % are micro flakes, 60% flakes), cores (flake cores, mainly discoid shapes) and a series of instruments, dominated by a variation of side scrapers. The latter group seems to include a functional range from knives to scrapers – most of large enough to be hand-held tools. Some of the cores also seem to have been used as choppers. One instrument of obsidian (cf. photo) was found in the main excavation, along with 28 obsidian micro flakes. In the 84Y trench, 6 obsidian micro flakes were recovered, in addition to the 7 micro flakes from the 100X 84Y SW test pit.

There was also collected a large number of samples for ¹⁴C dating. Samples from Layer C seems OK, but a closer look revealed that samples from Layer S to a large extent was mineralized (iron oxide) wood, probably roots. Accurate dates of the Layer S component are imperative to our study, and we hope to find a way around this problem.

Alashuaia: The last part of the survey was a stratigraphic mapping of the bog behind the large beach ridge formation (Mid Holocene transgression maximum) in Alashuaia. Our goal was to investigate the possibilities of locating coastal sites that are older than the beach ridge formation here. The other reason for picking this exact spot was that the pond / bog that was created behind the beach ridge probably prevented later occupation here – thereby increasing our chances to find pre-transgression sites that are not “contaminated” by later activity.

A manual drill was used to get information along two parallel lines reaching from behind the beach ridge and past the boggy area. The probes revealed up to 2m of organic sediments on top of the till. In the low part there was silty clay with organic material that probably represents bottom sediments in a small pond. The upper part was turf from the later bog stage. In sum, the amount of post-transgression sediments represents a considerable practical hindrance in the search (and subsequent

investigation) of pre-transgression sites. We conclude that the planned survey in Alashuaia should be concentrated in areas that are more accessible than the deep part of the bog. The results of the surveys are presented in a separate report (Bjerck et al. 2012).

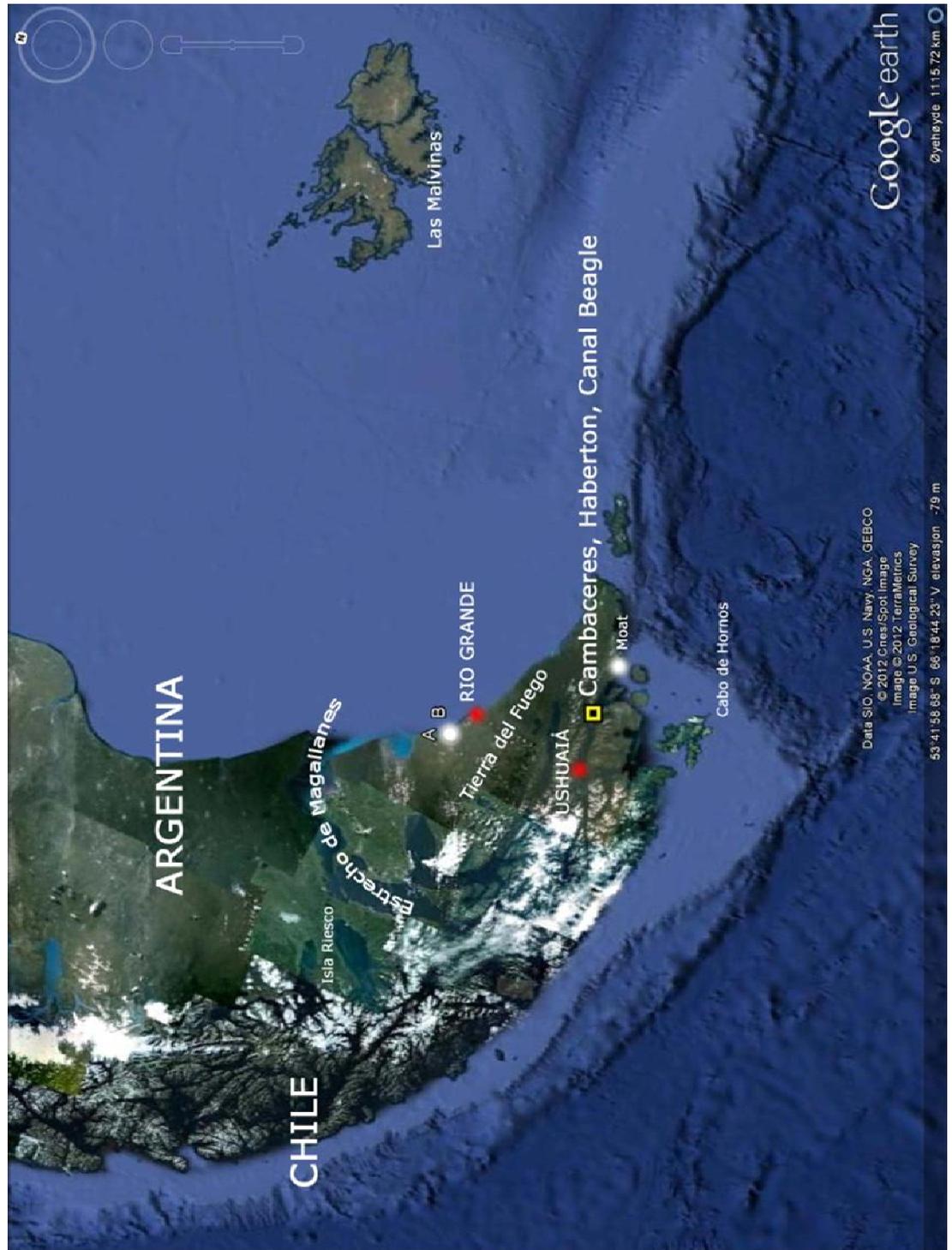
Moat: We visited the sites of Moat – an area farther east, with changing topography and ecology – where Zangrando is conducting a large scale survey / excavations. The forests grow higher and denser before dissolving into a wetter environment with large bogs. The coast line outside Canal Beagle becomes more steep and cliffy, and less sheltered. The archaeological sites in this environment show a different kind of lifestyle as they are dominated by shell mounds and not house pits. The composition of middens seems to differ from the ones in Cambaceres: in addition to shells, guanaco is well represented and there are very few remains of seals. There also seem to be a trend that many sites are not associated with natural harbors – some are even situated in the most exposed parts of the coastal stretch. In sum, this may indicate that there are strong littoral relations (beaches), but not so pronounced marine relations (open sea, boats). These observations will be very valuable in the discussions about dynamics in the marine foragers, and will be important in the Norway-Patagonia comparisons.

Post-field work: In the last week in Ushuaia (28th February to 2rd March) we had the chance to organize the artifacts, take out samples for radiocarbon dating, discuss the results and the further progress of the project.

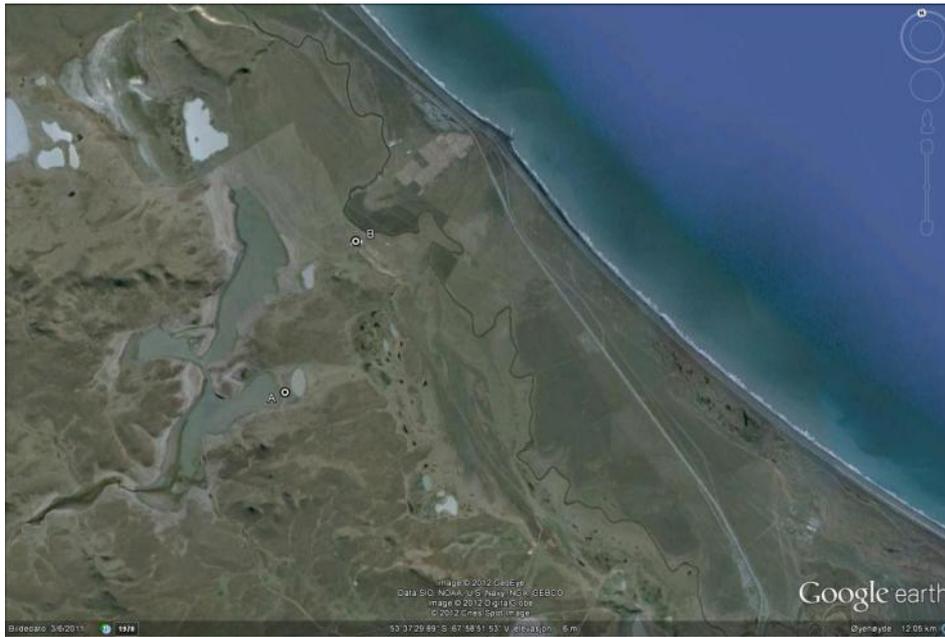
We agreed on who-is-doing-what in the following up of the preliminary report (as we plan to proceed with excavations) of the Binushmuka investigation:

- Introduction (aims and scope, methods): HBB and ELP
- Excavation of the 100X 100Y area (16m2): ELP
- Excavation of 84Y trench: HBB, HMB
- Test pits in grid, and GPS-plotted test pits : HBB HMB
- Analyze of green obsidian, to check provenience in Isla Riesco: PZ
- Prepare and ship ¹⁴C samples (Arizona) : PZ
- Process artifacts: An initial overview of artifacts was finished before we left Ushuaia, but the final list and the cleaning, marking and packing is to be undertaken by Lucas Sosa under the surveillance of ELP
- Alashuaia report: HBB
- Agreed to get all this finished before Zangrando / Tivoli arrive in Norway.

The last days (3rd–6th March) were spent in Buenos Aires. Here we had a meeting (March 5) with the Norwegian ambassador Nils Haugstvedt to present our project, to learn about other Norwegian research interests in Argentina, and seek advice on visa formalities related to Zangrando and Tivoli's four month visit to Norway in 2012.



The Southern tip of South America with Tierra del Fuego and Las Malvinas – and the location of Cambaceres, Moat, and Las Vueltas 1 and Pafoy 3 (A-B) NW of Rio Grande. Cambaceres is situated at c. South 55°53' -- equivalent to Copenhagen / Edinburgh in the northern hemisphere. Note the position of Isla Riesco in Chile – the presumed location of the green obsidian that was found at Binushmuka I and other early maritime sites in Canal Beagle.



From the excursion to the Atlantic side of Tierra del Fuego, February 1. Top: Location of the Sites A: Las Vueltas 1, B: Pafoy 3. Middle: The pond to the E of Las Vueltas 1 in the foreground, excavation tents in the background. Bottom: Low shell midden dome at Pafoy 3 and the wide beach plain in the background. Present shore line is c. 2,5km distant from the site. Photos: H. Bjerck



The location of the Binushmuka I site in Cambaceres, also giving an impression of the density of other sites in Cambaceres. This 4 km² large area was surveyed in 2009 and 2011, resulting in 1135 archaeological structures, mainly house foundations (731, red dots), and shell midden domes (390, blue dots).



Top: The 2012 camp in Cambaceres, private tents, and the large Kitchen tent, also the site of innumerable “Diez Mil” tournaments.

Bottom: Ernesto Piana initiating the excavation of the Binushmuka I site under the surveillance of Tom Goodall, the owner of Estancia Haberton. Angie Tivoli, Ernesto Gonet and Daniela Alunni to the right. Photos H. Bjerck



Top: Test pitting at Binushmuka I, Zangrando, Piana and Breivik. Note that the test pit split open in the gravel horizon, Layer C. Test pits outline a site area of around 600 m². Photo: H. Bjerck

Bottom: Aerial photo of Binushmuka in Cambaceres, Canal Beagle and Isla Navarino in the background. Binushmuka I with the excavation tent (right) and the screening tent (left). Note the pronounced beach ridge from the Mid-Holocene transgression, which is the marine limit in Cambaceres, c. 4m a.s.l. Also note the large formations of house pit shell middens below the beach ridge. At the beach below the house foundations to the left, parallel depressions that may be canoe runways are located, cf. report from the Cambaceres Survey 2009-2011. Photo: Policía (that came with helicopter to inform us that open fires were banned due to extreme forest fire danger)



Instrument (engraver) of green obsidian as located by Zangrando at 98,71X 100,30Y, Layer C. The instrument is bifacially flaked, and has notches (in both ends) forming horn shaped points. The green obsidian is believed to have its origin in Isla Riesco (in Chile, north of Estrecho de Magallanes), close to 400km NW of Cambaceres (cf. map page 5). The presence of this material indicates that the canoe traffic (and marine adaptation) is well established. Green obsidian is also found in the earliest shell midden deposits at the Imiwaia I and Tunel sites. Photos: H. Bjerck



Top: Artifacts from 104X 88Y SW test pit: a large core and a series of large flakes.

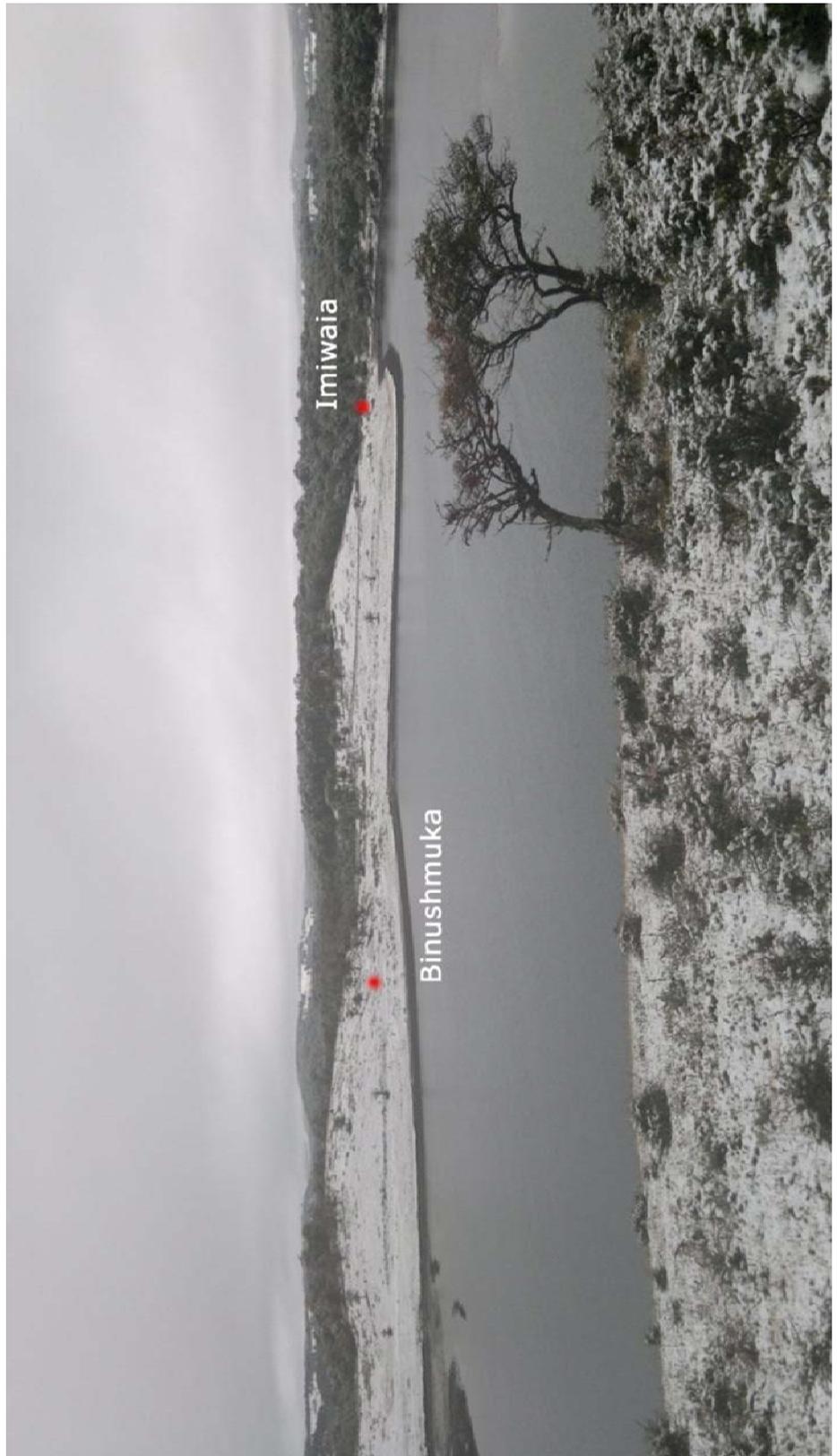
Bottom: Binushmuka I (tent over 100X 100Y excavation), and Cambaceres Central Peninsula and Canal Beagle in the background. Photos: H. Bjerck



From the early phases of the excavation of the 100X 100Y trench at Binushmuka I – Piana (top), and Tivoli, Zangrando, Breivik and Martinoli (bottom). Photos: H. Bjerck



Post excavation of the 100X 100Y area (at center) at Binushmuka, tent to the left erected over the 84Y trench, February 22. Below: The snow covered Binushmuka site in the morning of February 26. It is a healthy reflection that prehistoric people also had to cope with similar rapid changes, and that this is embedded in their material co-players. Photos: H. Bjerck.



Panorama showing the location of Binushmuka and Imiwaia, seen towards W, from Cambaceres Central Peninsula. Photo: H. Bjerck



Alashuaia (cf. map page 7), the beach ridge from the Mid-Holocene transgression to the left, and the bog behind the beach formation to the right. The probe detected bottom sediments that indicate that this initially was an open pond that eventually grew into a bog. Our plan was to test the bog covered area in hope of finding “uncontaminated” remains of pre-transgression settlements.

Bottom: Zangrando showing the probe with glacial sediments at the bottom of the c. 2m deep bog. Photos: H. Bjerck