

# Maritime Archaeology in Uruguay: Towards a Manifesto

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**Abstract** We report a collaborative maritime archaeological project in Uruguay, one of several Latin American countries where the subject is undergoing review in terms of the ways it is practised and managed. Uruguay is typical of many states where there has been a tension between a heritage-based approach in which the results of investigations are viewed as publicly owned, as opposed to the profit motive in which commercial and personal gain is the underlying ethic. This project was conceived both as a way of assisting the Uruguayan Heritage Commission in promoting the former approach as well as advancing a programme of research into the age of global exploration. This paper sets out the rationale of the initial field season and reflects on subsequent developments.

**Keywords** Uruguay · Maritime archaeology · Heritage management · Education · Age of exploration · Ethics

## Introduction

In 2004 a collaborative programme of archaeological research was started between the Centre for Maritime Archaeology (CMA) at the University of Southampton and institutions in Uruguay coordinated through the Heritage Commission of the Government of Uruguay. Vessels of Exploration: *The Uruguayan Maritime Archaeology Programme* (UMAP) was launched in 2005. The programme is supported by many other international institutions and

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academic bodies and the first season of fieldwork was funded by the *British Academy*. As its title implies the primary research aims were directed towards vessels of exploration, but also towards heritage management and education. To that end the data were to be used to begin the process of building a new maritime Historic Environment Record (HER) integrated with other maritime data in a Geographical Information System (GIS) designed to be used as an active tool for management as well as research. The project team comprised professionals and students from several Latin American countries as well as the UK. The work in 2005 laid the foundations for further seasons in which education and public access will underpin research into Uruguay's past. This paper summarises the first phase of the project and evaluates recent changes in the maritime archaeology of Latin America.

## A Maritime Enclave

Uruguay is bordered by Brazil to the northeast and by Argentina on the opposite banks of the Rio Uruguay to the west. To the southwest flows the Rio de la Plata while to the east it is flanked by the South Atlantic Ocean (Fig. 1). Originally inhabited by the Charrúas, until their population was greatly diminished during colonial times, it was a region subject to constant struggle between the powers of Spain and Portugal. In 1776 Uruguay was incorporated as part of a viceroyalty: the *Virreynato del Río de la Plata* but in 1828, after a long struggle, it achieved independence.

Right from the earliest phase of European exploration and throughout the historical period Uruguay has played a key role in the maritime communication both in the region and between Europe and the Americas, particularly so during the protracted competition between the Spanish, the Portuguese and the British for dominance of the region encompassing Uruguay, Argentina and Brazil. Small wonder then that the maritime past

**Fig. 1** Uruguay and the sub-continent of South America



forms such an important element of Uruguay's national consciousness as well as its cultural heritage.

## Research Context

While the maritime archaeology of pre-colonial times is a subject that must surely attract attention in due course, it is the archaeology of the modern world that is this paper's focus. For as a result of the intensity of maritime traffic noted above, Uruguayan waters contain numerous valuable archaeological and historical sites, many of them shipwrecks dating from the early sixteenth century. The ships that sailed these waters mainly belonged to Spain, Portugal and England, and it is these that have aroused most attention but up to now their importance as a key component of Uruguay's heritage has been greatly underappreciated. Many of these sites have been investigated in various ways but this has mainly involved commercial exploitation of little or no scientific value. Indeed some has been treasure hunting plain and simple.

This is not the whole story, however, for in a country with such a prodigious maritime cultural resource, many academics, curators and heritage managers within its national institutions have been working towards a more coherent system of management, protection and investigation in line with current international standards, in particular the ICOMOS Charter (ICOMOS 1996) and the UNESCO *Convention on the Protection of the Underwater Cultural Heritage* (UNESCO 2001) which passed into law in January 2009. It is just that such efforts were made in something of a vacuum of both policy and protection. This project was conceived as the first phase of a long-term research programme that sought to promote a change of direction through solely scientific work linked to heritage conservation. It was also designed to contribute to the increasing awareness of the archaeological heritage in both academic and general audiences throughout countries in the region, building on work for example in Argentina, notably the long-term excavation of the *Swift* (Elkin et al. 2006; Dellino-Musgrave 2006), in Chile (Ocampo 2002) and Mexico (Herrera 2001; Leshikar-Denton and Luna Errequerena 2008).

## Research Questions

One of the fundamental aspects in the development of the modern world is the nature of the change from a medieval to a modern mentality in which the sea is central to international relations in every sphere of politics, economics, the arts and the emerging sciences. Greater power blocks, the future nation states of Europe, found themselves necessarily competing across bodies of water in ways that many of the smaller regions of the medieval world had not (Adams 2003, 91–92). Exploration, navigation and seafaring now became important to society in far more fundamental ways and as the world expanded through exploration and colonial enterprise, nations interacted with one another and with indigenous populations in America (Herrera 2007). This centrality of the sea is something that has not been sufficiently considered in our attempts at understanding those aspects often cited as being of central importance to the modern world [e.g. Orser's colonialism, Eurocentrism, capitalism, and modernity (Orser 1996, 22)]. Largely because these mechanisms and their variants were as much as anything maritime, a modern global world is therefore a maritime world. Yet this has figured little in the theoretical writing of historical archaeology (Adams 2003, 43). This research focuses on specific aspects of this period of social change, its thesis being that

it can be revealed in a new light through the analysis of exploration and its associated seafaring practice from the following starting points:

1. Are there differences in the concept of ‘exploration’ between England and the Iberian Peninsula between the sixteenth and the eighteenth centuries and were these manifested in the shipping and seafaring practice of the time? If so, can cultural differences in strategy and behaviour be detected, observed and interpreted in the archaeological record and can we detect change over time (Buffa 2004)? We not only suggest that this is possible but that changes in patterning over time would provide new insights into the development of maritime exploration and enterprises of those powers who were forging the modern world in a new global context.
2. Implicit in this process was the interplay between colonial exploration and domination with maritime infrastructure including shipbuilding and local communities. These processes are in turn related to behaviour of people and cultures involved in maritime traditions; principally expressed through the ship, not only as an extremely complex artefact, but as a focus of great cultural meaning and significance. This second axis of interest is defined by the next problem: Are there constants in maritime accidents that can be unified through behaviour patterns in risk situations? And, if so, do these patterns manifest themselves regionally, thereby creating locally specific maritime contexts (Herrera 2001, 265–274)?
3. What is the extent of the submerged cultural resource in Uruguayan waters, and how can it be understood and protected once known?

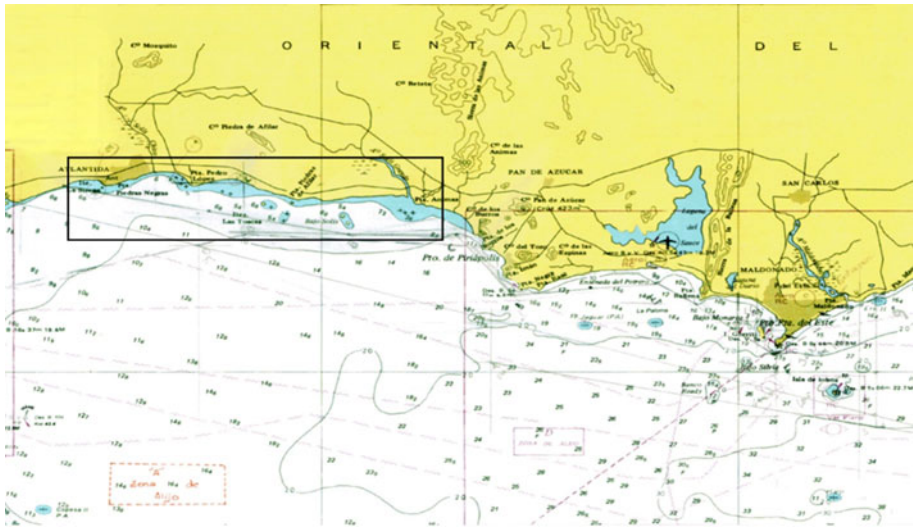
From these the project set out a series of primary objectives to be addressed in a first phase of fieldwork.

### **Objectives**

1. To collect information that would enable the identification of the competing maritime strategies of British and Iberian traditions in their exploration of the Southern Atlantic
2. In a regional context, to identify and analyse constants and similarities in nautical casualties off significant exploration coasts
3. In a wider context, to refine and test models of human behaviour in risk situations at sea
4. To create an inventory of the Submerged Cultural Resource in the areas included within this research (the Atlantic coast of Maldonado Province). In collaboration with the Uruguayan Heritage Commission, this would also initiate the creation of an inventory for all Uruguay’s maritime archaeological resources, and facilitate their better protection and understanding
5. To create an analytical GIS platform able to incorporate geographical, geophysical, archaeological and historical data from the research areas.

### **Testing the Water: Field Work**

The first season of fieldwork in April–May 2005 therefore resulted from the conjunction of several factors which started to come together some years before. In execution it was carried through with a number of Uruguay’s State institutions, such as the Nation’s



**Fig. 2** The Research Area overlaid on the local Admiralty Chart

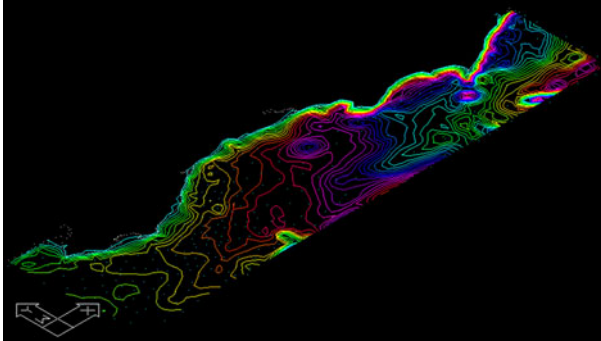
Cultural Heritage Commission and the National Museum of Anthropology. It was also carried out in collaboration with two exploration permit holders, Hugo Charbonier and Alfredo Konke, both committed to the full investigation of maritime archaeology. In these ways the fundamental pillars of the project were in alignment with the objectives and principles enshrined in the UNESCO 2001 Convention.

The area covered by the permits is located on the north bank of the Río de la Plata east of the port of Piriápolis, stretching approximately up to San Luis and from the coast out to an imaginary line passing through Solís Shoals (Fig. 2). The operational headquarters were therefore established in the village of Cuchilla Alta, 71 kms from Montevideo. It was here that we also found a fishing boat ideal for marine geophysical survey, and whose skipper and crew had a thorough knowledge of the area.

Fieldwork was to be conducted in two phases: firstly marine geophysical mapping, the second being archaeological inspection by diving to ground-truth any anomalies detected. From the outset, however, it was apparent that additional cartographic data would have to be generated because the scale of existing charts did not show topographic or seafloor data at a high enough resolution to control archaeological survey. This was remedied by surveying coastal hazards within the area using GPS in order to generate digital cartography at a larger scale. This both improved the understanding of the area's geological dynamics and allowed the precise designation of remote sensing survey lines. Most importantly it also better contextualizes any archaeological material with respect to the navigational hazards that caused its loss.

### Archaeological Computing

As part of the steps in constructing an archaeological GIS, the project (with the support of Geo-Data Laboratories of Southampton University) digitized the available cartographic information from Uruguay's southern coast nautical chart (from Faro del Chuy to Puerto Sauce and Cabo San Antonio). As an additional product of the digitizing processes, we



**Fig. 3** Bathymetric chart of the research area (Francia)

obtained a CAD file with geo-referenced information on UTM coordinates of a total of 421 strategic points. By adding bathymetric information to each one, a digital elevation model of the sea bed was produced (Fig. 3).

#### Surface Surveys at a Regional Scale

A systematic survey was carried out in several sectors of the research area initially through marine geophysics, primarily a dual frequency sidescan sonar operating at 100 (114)/500 (410) kHz  $\pm$  1%. The double objective of the survey was firstly, to detect sites of potential archaeological value together with their cultural variability and secondly, to collect a body of geological information to determine the most suitable geophysical techniques for the area for forthcoming research seasons.

The identification and charting of these elements is significant for later stages of the research, for only through this comprehensive recording of archaeological and environmental information will a proper assessment of the regional maritime context and its archaeological implications be complete (Herrera 2007).

The surface surveys via geophysical techniques also allowed us to share experiences and to start the training of some team members whose areas of expertise were different (Fig. 4).

#### Surface Surveys at Site Scale

The working procedures in the archaeological sites detected are intended to generate the necessary data to address the research questions identified above. These are focused on the interest in colonial maritime casualties, vessels' characteristics, accident processes and the crews' attempts to save their ships which can be detected in the archaeological record (Herrera 2001).

Initial reconnaissance of materials on or protruding from the sea bed was carried out through archaeological diving. Recording of the archaeological context and seabed conditions followed, along with assessment of the site's biological information and its general environmental conditions such as current, fetch and swell.

Once a site was detected, a new geographical position was obtained and a systematic visual inspection undertaken within circles of increasing radius around the detected feature or materials. In this way, the extent of the seabed indications of the site are determined, at



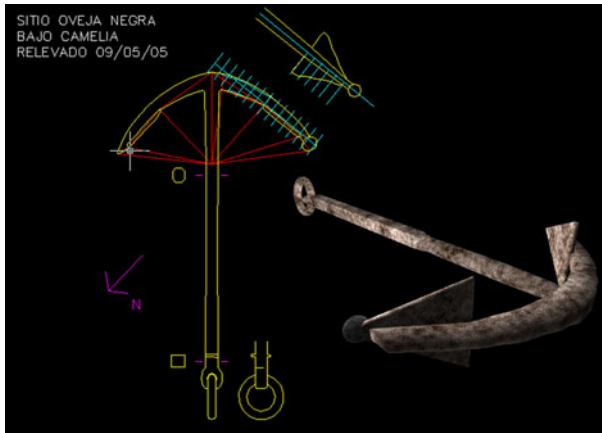
**Fig. 4** Training in marine survey (Photo Adams)

least by its visual attributes. The principal components such as topographic features, structure, material distribution, etc., are then recorded, the most appropriate techniques depending on the site's characteristics. All recording is fully compatible with digital options for spatial data management, such as DSM, CAD or a GIS. The recording work is exemplified here by two of the sites located.

### **Oveja Negra**

The Oveja Negra site, the name of which translates as the Black Sheep, was detected on the western side of the *Camelia* reef, at a depth of 3 and 700 m from the coast. The element most immediately apparent was an iron anchor heavily covered by a layer of lamellibranch molluscs, mainly mussels (*Mytilus platensis*). Due to this covering, most of the details required to make an archaeological prognosis were hidden. To enable a detailed recording, that layer was taken away in some areas most diagnostic for identification of historical anchors. This action was judged to be safe because the mussels do not produce a chemical layer that physically seals the substrate in the manner of the calcium carbonate of coral reefs. Therefore, there is no change in the chemical conditions between the metallic material and its context, and so no risk of initiating an ionic exchange which could adversely affect the stability of the anchor. As the concretion layer of ferrous corrosion products surrounding the object remains unaffected there is no necessity for the remedial use of sacrificial anodes.

The data generated were combined to produce site plans in digital formats, both vector and raster. Seabed data were then processed in GIS-compatible formats from which 3D virtual reality models of various features were later generated (Fig. 5). The sum of each new recording will strengthen the contextual understanding both of the general audiences as well as our own analysis, initially at a site level but subsequently at a regional scale. If required for dissemination to general audiences, these techniques could be used to generate computerized representations of entire sites, in the style of a maritime virtual museum. Were future work to be conducted including excavation these techniques can be used to generate a series of models along the investigation timeline including animations.



**Fig. 5** One the anchors from Oveja Negra (G. Francia)

At this stage of non-intrusive survey, the site comprises two anchors and a lead scupper. One of the anchors can be dated tentatively to between mid eighteenth and nineteenth century, and the other appears to be from a twentieth century small boat. The scupper seems to be contemporary with the large anchor and has clearly been compacted by considerable force. The presence of this artefact suggests that this is the wreck of a ship of medium to large size. Both elements suggest chronological as well as spatial coherence. It would be unlikely for a ship to suffer disintegration to the extent of losing its scuppers and remain afloat. Its completely compacted state is consistent with this, as the only way in which it could have become so is either by being crushed against the shallow rocks of Camelia reef, or by being squashed between the rocks of the sea bed and the hull it was part of. It needs to be said that this is an initial working hypothesis, as the great abundance of the said molluscs lying in dense layers significantly obscures the remains even to the trained eye and so it is highly likely that other material is present. A magnetometric survey of the shoal would be one way to advance our evaluation of the extent of the site (at least regarding its ferro-magnetic components), alternatively a sub-bottom survey depending on the acoustic qualities of the sediment.

### Bagre Stream

As the programme aims to construct an integral view of the maritime systems of the past, this means we must consider the navigable waterways as part of the same nautical and cognitive environment. This perspective extends the understanding of transport, communication and the influence of past nautical activities. (e.g. Westerdahl 1992; Rönnby 2007). In conjunction with the offshore surveys such as at Oveja Negra, the project therefore carried out surveys in the rivers and streams debouching into the marine survey area. Potentially significant albeit particularly enigmatic is a wooden structure submerged in the Bagre stream (Fig. 6). Its function and date have not yet been identified, since in spite of having constructional elements common to ship building, it also has other elements which are not. It is possible that we are seeing the secondary use of wreck material and as such its components may be highly important.





**Fig. 6** The submerged structure in the Bagre stream (Photo Capdepon)

The Bagre is a cold water stream, its visibility directly influenced by the precipitation regime, as it carries a heavy sediment load. It is also not easily accessible. Local stories speak about a “galleon”, and one of the Uruguayan archaeologists involved in the project, who is from a neighbouring village confirmed that it was part of the oral tradition of the region. Therefore, a painstaking search was undertaken upstream and the site was located 450 m from the Bagre’s mouth. Unfortunately, because of the extremely poor visibility, only an initial recording of the structure was possible. Although we kept visiting the area in the hope of better conditions it remains a task to be completed in future field seasons. Nevertheless, the initial objective of detection and integration to the database of submerged cultural resources in the area was fulfilled.

## Conclusions

The progress achieved within the programme, although a modest first step, marks a promising beginning for long term research in maritime archaeology and anthropology. It is hoped that this programme will continue generating strategies and tools which will contribute to Uruguay’s development of this area of research.

In addition to the intrinsic scientific significance of such work, an invaluable aggregate gain has been the beneficial integration of both individuals and institutions working towards a series of coordinated aims, namely: an international collaboration of maritime archaeologists and institutions with Uruguayans at its heart; the support of Uruguayan institutions concerned for the study, conservation and understanding of the national and international maritime heritage submerged in the country’s waters; the support of private permit holders genuinely interested in generating the greatest possible benefit for the Uruguayan people regarding the heritage resting in their survey areas.

Another benefit of the programme is that, as we had hoped, this first season generated considerable scientific exchange, not only through interaction between various institutions and laboratories in different countries but between collaborators in the field. An added value is that the project also operated as a field school. In this way, the programme is a driving force in assisting with the training of qualified scientists in this area as well as in raising awareness of the need to protect the submerged heritage where similar conflicts

between protection and commercial exploitation are experienced elsewhere, including other Latin American countries. Future projects within this programme will also be organised so that they integrate international training opportunities at every level, not only during the field season but by being linked to subsequent management, archiving and research of the data in Uruguay. We envisage an ongoing programme of exchange involving students from Europe as well as America.

From a technical point of view, a complete GIS platform has been generated in order to integrate the scientific and heritage information. An HER for submerged sites was started, its value increasing with all subsequent fieldwork, and which will also be a strategic tool for the Uruguayan Heritage Commission for easier management of the archaeological resources it has defended with so much effort.

It is obvious that archaeological potential in this region is particularly high and we hope that the development of this research model and its continued application through the UMAP programme and others that follow will encourage interest in and engagement with the country's heritage according to scientific standards of investigation and internationally accepted principles of heritage management. Until recently, maritime investigations in Uruguay have been characterised by the adventure of personal collecting or commercial profit. In the absence of an alternative model it is easy to see how an institutional acceptance of such practice becomes the *status quo*. This project aimed to change perceptions, not with invective but through 'argument by demonstration' (e.g. Adams 2007). In this light we attempted to show with this work that it is indeed possible to undertake maritime archaeology in Uruguay and although we were unaware of it at the time, the UMAP was playing its part on a wider stage.

## Postscript

In 2001 UNESCO adopted its *Convention on the Protection of the Underwater Cultural Heritage*. This was the culmination of a long sequence of preparatory meetings held in several countries as well as earlier attempts to formulate much needed international protection. Notable instruments were the International Law Association's *Draft Convention on the Protection of the Underwater Cultural Heritage* drawn up by their Committee on Cultural Heritage and adopted at Buenos Aires in 1994 (International Law Association 1994 O'Keefe 2006). It was subsequently forwarded to UNESCO and between 1996 and 2001 it provided one of the bases of discussion leading towards the eventual UNESCO Convention (Strati 2006: 23). Another was the *Charter on the Protection and Management of Underwater Cultural Heritage* drawn up by the International Council on Monuments and Sites (ICOMOS 1996) and this is now incorporated in the present Convention in the form of an Annex of Rules (UNESCO 2001, Annex). Throughout these meetings considerable resistance was expressed by those with vested interests in treasure hunting and related forms of commercial exploitation of underwater sites which ran counter to the principles of archaeology and cultural heritage protection. Nor did this opposition melt away after 2001. The Convention would need 20 States to ratify it before it could pass into law and at first the rate of ratification was painfully slow. When 5 years later only 6 States had ratified, its opponents began declaring that the treaty was dead in the water and might never become active. But the pace of ratification began to steadily increase and, following acceptance by the twentieth State, Barbados, in October 2008, the Convention passed into law in January 2009. The momentum has continued to build and at the time of writing (March 2010) the number of ratifications now stands at 32 and several other countries have

stated their intention to do so. Still others including the UK, while not yet minded to go as far as ratification, have nevertheless stated support for the principles enshrined in the Rules (e.g. Hansard 2006).

The implications of this progress for states where maritime archaeology is at an early stage of development are profound. The message is that change, however, unlikely, can and will happen. Uruguay was one of the States that had abstained in the vote to adopt the UNESCO Convention in 2001 (along with the USA, UK, France and Germany among others). Yet only 5 years later in 2006 the Uruguay Government introduced a new law protecting the underwater cultural heritage (Decreto Reglamentario del Poder Ejecutivo 306 2006) and which in many ways embodied changing international perspectives. Up to then, there had been no law in Uruguay specifically dedicated to the protection and management of underwater cultural heritage, as was indeed the case in most countries until well into the second half of the 20th century. As the need to manage and protect underwater sites became increasingly urgent some countries drafted new legislation to protect at least some classes of underwater site, usually shipwrecks, e.g. the UK (Protection of Shipwrecks Act 1973), or Australia (Historic Shipwrecks Act 1976). Others simply extended their existing ancient monuments laws to cover their territorial sea, e.g. Sweden (Ancient Monuments Act 1967), often the most effective measure due its comprehensive nature. But others placed underwater heritage management under what seemed to be the most appropriate existing statute. In Uruguay's case archaeological sites were investigated under a law dating from 1973 which was primarily concerned with permits for dredging in national ports and harbours. A not dissimilar expedient is the UK Government's use of salvage law embedded in Part IX of the Merchant Shipping Act (1894, 1995). Expedient it may be but managing cultural heritage with legislation that was not originally written for that purpose is problematic. The evident deficiencies of this situation were the incentive for Uruguay to draft a new law and, in spite of their initial stance towards the UNESCO 2001 Convention, change was pursued on the basis that the resulting submerged cultural resource management should correspond to the principles enshrined in its Annex.

The bill was passed into law by the then President Tabaré Vázquez and the Ministers of Defence, Education and Culture. It decreed that the existing permit system administered by the navy, which had in effect given licence for both individual and commercial treasure hunting, would cease. Once the current permits had expired no more would be granted unless they were held within the framework of a scientifically designed project based on the principles of state and/or public institutional custodianship of all material and information recovered. This was understood to entail unitary, publicly accessible collections properly conserved and curated, as opposed to private collection or dispersal through sale. Public access also implied an active historic environment record, wide publication and education at all levels. As stated this was exactly the change that our work sought to promote, but it happened far faster than we had dared hope. One reason was the project itself, for it became apparent that the UMAP was an influential element in the process of renewal. The then Minister of Culture, don Manuel Esmoris, said both in the press at the time and subsequently that the project had provided Government with a tangible precedent in the process of shaping the new law (don Manuel Esmoris, personal communication, Former Minister of Culture, Government of Uruguay, Esmoris forthcoming).

It will be interesting to see whether Uruguay proceeds to ratify the Convention in due course, joining others in the region that have already done so such as Mexico, Paraguay, Ecuador, Panama and most recently Argentina. But of overriding importance is the legal

framework within which Uruguay's Heritage Commission can now oversee programmes of maritime archaeological research of the sort of scope discussed in this journal (Adams 2006, 2007).

Here then is a manifesto for a maritime archaeology, in this case designed for Uruguay through the UMAP but which explicitly seeks to promote international best practice, not simply meeting the standards set out in the Rules of the UNESCO 2001 Convention but exceeding them. In 2005 it seemed that change in Uruguay was still a long way off but it happened. The fact that similar changes are a mirage or at best a distant goal in many places around the world, including in some of its richest nations, is all the more reason to capitalise on it when it comes about. Uruguay, and other maritime nations of Latin America, are therefore rising to the challenge of pushing forward the theory and practice of maritime archaeology in the twenty-first century (Herrera 2007).

## Networks of Support

Bringing together a project that aims to contribute to policy at a national scale is probably beyond the resources of any single individual or indeed a single organisation. For this reason an extensive network of interest was conceived at the outset. The team comprised ten professional archaeologists from five different nations; nine of them specialized in the particular area of maritime archaeology and with respect to educational initiatives, five of them were also Nautical Archaeology Society tutors.

In addition to the authors the team comprised Michael Jablonowski, from Sonoma University, USA; Amaru Argüeso and naval architect Cristian Murray, members of the Argentinean Underwater Archaeology Programme, from the National Institute of Anthropology and Latin American Thinking; Stuart Heath, alumnus CMA, Southampton; Irina Capdepon, from the Uruguayan National Museum of Anthropology.

Regarding team members associated with the project, not present in the field, but whose collaboration was fundamental, we were fortunate to have archaeologists Larry Murphy (Director), and Matthew Russell from the Submerged Resources Center, National Parks Service, USA; Donald Keith, (President) and Toni Carrell, of Ships of Discovery; Ian Oxley, Head of Maritime Archaeology, English Heritage; Justin Dix and John Davies from the National Oceanography Centre, University of Southampton; Félix Frías, from the National Institute of Statistics, Geography and informatics, Mexico; and Manuel Gándara, from the National School of Anthropology and History, Mexico.

This project could not have taken place without the *British Academy* (research grant no. SG-39558). Further resources were provided by the University of Southampton, the National Parks Service, USA and Mr Mike Jablonowski. The enlightened collaboration and assistance in so many ways of the *Uruguay Heritage Commission* under don Manuel Esmoris was also crucial, namely Mrs Elianne Martínez, Dr Jorge Silveira and Ms Nelsys Fusco; as was the involvement of the *National museum of Anthropology* under its director, Arturo Toscano. In addition to institutional support the project benefited from many individuals. First and foremost Hugo Charbonier and Alfredo Konke, permit holders of the research area, without whose collaboration and commitment to the submerged cultural resource nothing could have been accomplished. Support from others around the world is too extensive to itemise but in addition to the institutions named above concrete support in terms of advice, time and/or resources was provided by Geo-Data, University of Southampton; the *Mary Rose Trust*, UK; the Royal Navy; and the Argentinean *National Institute of Anthropology and Latin American Thinking*.

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