

Underwater Cultural Heritage, Tourism and Diving Centers: The case of Pozzuoli and Baiae (Italy)

Patrimonio cultural subacuático, centros de turismo y buceo: el caso de Pozzuoli y Baia (Italia)

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Abstract: In Pozzuoli and Baiae, in the Gulf of Naples, villas, mosaics, baths, streets, houses and harbour structures of the Roman period were submerged by the sea, as a result of the volcanism. This unique environment, severely looted over the years, has been included in a Marine Protected Area since 2001. Since then, the Soprintendenza Archeologica has carried on some research and documentation works, while the Istituto Superiore per la Conservazione ed il Restauro has experimented with new techniques for the conservation of the underwater structures. The public access has been made possible with the opening of underwater archaeological trails, and through the involvement of the diving instructors active in the area, appropriately trained. Here we would like to analyse the effects of this strategy also through the lens of the tourism and diving industry, considering their needs and their expectations, together with the primary need to preserve the sites for the future generations.

Key words: Archaeological tourism, submerged sites, management of the UCH, Italy, Baiae.

Resumen: en Pozzuoli y Baia, en el golfo de Nápoles, villas, mosaicos, termas, calles, casas y estructuras portuarias de la época romana fueron sumergidos por el mar, como resultado de la actividad volcánica. Este ambiente único, severamente saqueado durante mucho tiempo, se ha incluido en un Área Marina Protegida desde el año 2001. Desde entonces, la Superintendencia ha llevado a cabo investigaciones y proyectos de documentación, mientras que el Instituto de Conservación y Restauración ha experimentado con las nuevas técnicas para la conservación de estructuras sumergidas. El acceso del público ha sido posible con la apertura de itinerarios ar-

queológicos submarinos, y mediante la participación de los instructores de buceo activos en la zona. Aquí nos gustaría analizar los efectos de esta estrategia también a través de la lente de la industria del turismo y del buceo, teniendo en cuenta sus necesidades y sus expectativas, junto con la necesidad de preservar los sitios para las futuras generaciones.

Palabras clave: turismo arqueológico, sitios sumergidos, gestión del patrimonio subacuático, Italia, Baia.

Rule 1: «The protection of underwater cultural heritage through in situ preservation shall be considered as the first option».
 Rule 7: «Public access to in situ underwater cultural heritage shall be promoted, except where such access is incompatible with protection and management»

(Unesco 2001 Convention on the Protection of the Underwater Cultural Heritage).

The proper management of the Underwater Cultural Heritage, the correct preservation of the archaeological sites on the bottom of seas, rivers and lakes, their protection for the future generations and, where it is possible, their opening to the public and to the society are some of the greatest challenges of the contemporary underwater archaeological science. This was, for example, the main theme of the 2011 IKUWA 4 Congress (IKUWA 4: Managing the Underwater Cultural Heritage, Zadar-Croatia, September 29th, October 2nd 2011). This was also the principal topic of numerous Unesco regional meetings and of an interesting roundtable between young researchers held in Santiago de Compostela (Bombico/Cerezo/Fernández, 2013; see also Bombico/Fernández/Stefanile 2012); undoubtedly, one of the key-points of the 2001 Unesco Convention on the Underwater Cultural Heritage is the strong impulse given to the *in situ* musealization of the submerged archaeological sites.

While in the case of shipwrecks the issue of their *in situ* preservation and opening to the public is often very complicated, and requires the implementation of difficult solutions, archaeological sites characterized by the presence of submerged structures like ancient harbours, breakwaters, quays, quarries, buildings, villas, fishponds, seem to encourage musealization projects. The proximity to the coast, the shallow depth, the frequent closeness to modern urban centres, due to obvious environmental conditioning, the presence of types of artefacts less exposed to looting, make in many cases submerged ports and cities excellent archaeological diving tourism spots.

Nonetheless, the easy access to the site can cause big problems of protection against sacking and human damaging. This is particularly evident in countries like Italy, where sport diving had an early diffusion, and where these kinds of sites have often been victims of indiscriminate plunders over decades. Moreover, the proximity to the coastline and to the point of wave breaking, as far as the shallow waters, rich in marine life, make this category of archaeological contexts particularly vulnerable to the physical damage caused by waves, sea storms, tides and currents, and to the biological one caused by the marine organisms.

One of the examples of major interest for this discussion can be the rich archaeological area of *Baiae*, *Puteoli* and surroundings, a few kilometres away from the big city of Naples, in southern Italy.

Satellite images and aerial photographs may be useful to give an idea of the extension and complexity of the ancient structures submerged in the Gulf of Pozzuoli, in the Western part of the Gulf of Naples, in the middle of the stunning volcanic area of the so-called Phlaegrean (in Greek,



Figure 1. The submerged structures of the *Portus Julius* (aerial view).

«burning») Fields (Fig. 1). It is easily possible to recognize in the photos the coastal strip of one of the richest and most populated areas of the Roman world, a crowded wonderful *riviera* where concentrated the *villae* of the most eminent men of the Late-Republican and Imperial Rome (D'Arms, 1970).

Senators, powerful people and Emperors with their courts, established their luxury villas in this territory, attracted, as we know from the ancient sources, by the beautiful scenery, the mild climate, the proximity to the city of Rome (less than 200 km away), the abundance of natural hot thermal springs connected with the volcanoes present in the region (more than forty, many of them still in activity), and by the dream of a life of *otium* and pleasure.

A great part of this area, including roads, quays, thermal complexes, *villae*, fountains, walls, floors, columns and mosaics, is currently under the sea level due to the phenomenon of bradysism, which can cause, in the course of the centuries (even with fast movements as recognized in recent years too) the sinking and the emergence of the mainland with huge geo-morphological changes. Ascending and descending phases, easily visible through the observation of the holes generated by the marine *litophaga* in the now re-emerged marble columns of the *macellum* of *Puteoli*, have been studied in past years, giving us an idea of the events that brought about the present situation. In the same territory, the eruption of Monte Nuovo in 1538, was the cause of a massive change of the coastline in the area of Lucrino lake and Portus Julius.

Since 2001, a notable part of this complex, around the ancient *lacus Baianus* and the *Portus Julius*, on a total extension of 176.6 hectares, have been inserted in a protected sea-area (Benini, 2004; Benini, 2005; Stefanile, 2011; 2012): the traffic of commercial and recreational boats has been forbidden, areas of total, general, and partial reserve have been created, demarcation buoys have been placed, sea activities have been regulated, and the diving centers present on the territory have been entrusted with the management of the touristic flows and, at the same time, with the control of the site.

In this way the scientific community, which had already started to mobilize a few years before, during the congress *Forma Maris* (Pozzuoli, 1997), and a part of citizens aware of the importance of their common past, have actually tried to stop the shameful damages that the Phlaegrean Underwater Cultural Heritage was suffering because of human action: on one hand, the indiscriminate plunders started already in the 1960s and 1970s, when diving activity began to become popular and when hundreds of divers began to explore the ancient structures and to take away with them all the precious items that the sea had protected during millennia. On the other hand, the presence of some factories on the waterfront of Pozzuoli (some of them are still in activity) and the commercial harbour in the bay of Baia, connected with extraction and export of *pozzolana* (the same excellent volcanic ash used by the Romans to build their concrete piers underwater mentioned by Vitruvius), were responsible for a daily traffic of ships that, heavy with their cargoes, often scraped with their keels against the archaeological structures. Not to mention the rusty, modern shipwrecks, abandoned in the bay, with risks not only for the heritage, but also for the environment and the safety of people swimming in the area (now finally removed) (Fig. 2).

There is no need, here, to retrace all the steps of the archaeological research in the Gulf of Pozzuoli, sufficiently covered, in recent times too, elsewhere (Stefanile, 2011; 2012). It is however the case to remember that the discovery of submerged structures in this area is very old and surely not connected with the WWII (as sometimes it has been written), as evidenced by the findings recovered in the half of the 18th century, today in the collections of the Archaeological Museum of Naples, or by the voices of English poets (such as P. B. Shelley) and travellers of the *Grand Tour*.



Figure 2. The difficult situation of *Baiae* in the 80s, before the creation of the Marine Park.

Also the interest in the recovery of artefacts and archaeological excavation of the ancient *Baiae* is not very recent, and dates back at least to the 1920s, when the impressive marbles of a big palace, later interpreted as the Severian Palace (Maniscalco, 1997), discovered during some dredging operations, puzzled the attention of Benito Mussolini that even proposed to enclose and fence the Gulf of Baia and drain it (Race, 1994; Maniscalco, 1997), in order to make terrestrial excavations (the same idea later realized in the recovery of the Nemi lake ships).

In the following years, after some new findings in the 1950s (Napoli, 1953), and the call for a systematic exploration of the area by Maiuri at the *II Congresso di Archeologia Sottomarina* (Maiuri, 1961), Baia has been, together with the first Roman shipwreck found off Albenga, one of the major areas for the research and experimentation of new techniques of the emerging Italian underwater archaeology, notably with the work of Nino Lamboglia and Francisca Pallarés in the Imperial submerged *nymphaeum* off Punta dell'Epitaffio (Lamboglia, 1959; Lamboglia, 1971; Pallarés, 2001). In Baia for the first time has been tested the system of creating underwater plans by dividing the area in regular squares; in Baia, moreover, for the first time has been used the airlift in submerged buildings.

Volunteer divers, that before the advent of professional underwater archaeologists were the only people able to dive, were the protagonists of several discoveries and positive experiences in the 1960s and the 1970s (De Franciscis, 1967; De Franciscis, 1970); it's important to remember here at least the finding of the statues of Ulysses and his mate Baios in Punta Epitaffio, of a Nabatean altar in Pozzuoli and of a collapsed storage room with thousands of Roman oil lamps connected with the commercial harbour of Puteoli (Ripa, 1967; Garcea *et alii*, 1994). During the 1980s, a part of this expert volunteers worked together with important archaeologists such as F. Zevi, P. A. Gianfrotta and B. Andrae in the extraordinary excavation of Emperor Claudius' *nymphaeum* in Baia (Zevi/Andrae, 1982; Andrae/Zevi, 1983; Frost, 1983; Andrae, 1992), with the discovery of all the statues now exposed in the Museum of the Campi Flegrei in the Aragonese castle of Baia (Felici, 1997; Miniero, 2000; Zevi, 2009). In 2009, synthetic copies of the statues were replaced *in situ*, for the entertainment of diving visitors that can swim within a highly suggestive environment (Fig. 3).

Other important works were made in the same years, till the end of the 1990s, through several campaigns of surveys (Di Fraia *et alii*, 1986; Di Fraia *et alii*, 1993; Scognamiglio, 1993; Scognamiglio, 1997): it was possible to locate, to map and draw a part of the underwater structures, the wide access channel of the *lacus Baianus* (Maniscalco/Severino, 2002), delimited by two thick wharves in *opus caementicium*, the baths of a semi-decagonal three-apsidal *nymphaeum*, the remaining part of the big Villa dei Pisoni, the stunning Villa con Ingresso a Protiro, the Severian Palace (Maniscalco 1995; 1996; 1997), the Roman fishponds at the basis of the hill of the Aragonese fortress. It was finally presented a concrete and trustworthy picture of the ancient coastline, and of the kinds of settlements on the shores of the *lacus*, with the several piers and docking structures of the maritime villas (Gianfrotta/Maniscalco, 2001).

Nowadays, after the creation of the Marine Protected Area, the Superintendance for Antiquities is directly engaged in the works through new researches, starting a fruitful collaboration with Institutions, Universities and Associations.

Since 2003 the technicians of the ICR (Istituto Centrale per il Restauro, now ISCR - Istituto Superiore per la Conservazione ed il Restauro), taking advantage of the good results of the first experiments of underwater restoration carried on in the fishponds of Torre Astura, have started working on the complex conservation problems of the submerged city (Petriaggi/Mancinelli, 2004; Petriaggi/Davide, 2005; 2007), and in the course of the years, rescue operations on



Figure 3. A copy of a statue in the *nymphaeum* off Punta Epitaffio.

the mosaics of *Villa dei Pisoni* and *Villa con ingresso a Protiro* have been undertaken as well as works on the submerged road from Baia to Puteoli and the restoration of sections of walls damaged by the sea, the streams and waves and by the erosion of biodeteriogen agents (Ricci *et alii*, 2007), between Baia and *Portus Julius*. For the first time an archaeological risk database (SAMAS) is created, to have knowledge of the deterioration of the structures and to make a good maintenance programme (Petriaggi/Davidde, 2005).

In a cooperation of the Authorities with Naumacos group, sonar bathimetric and seabed hardness maps have been realized and updated in recent years, delivering a useful tool for planning new operations in the area. The same research group was involved also in some new discoveries, like a precious marble statue from the *lacus Baianus* (Caputo 2015). In this same context, fruit of an agreement between Naumacos and the association Fillirea, LAB is a new reality, aimed at converting the Visitor Center into a Center for the coordination of research and valorization projects in the MPA of Baia, under the control and supervision of the Superintendance.

On this basis, even in a difficult moment for Italian underwater archaeology (Secci/Stefanile, 2015), there is a hope, for the near future, to continue the archaeological research and to improve the knowledge of an area so vast and still to be fully documented; in this sense, further work and collaboration with research institutes and Universities will be desirable. Considering Baia as an archaeological context unique in the world, with an incredible abundance of structures still needing a full documentation and study, interpretation and publication, only an open

strategy of involvement of all forces available can be successful on the long term. If the journalistic and popular definition of Baiae as a «Pompeii underwater» can't be truly considered as a scientific sentence, the Vesuvian site can provide us with a good parallel. In one of the most active moments in the recent history of research on the city of Pompeii, i.e. the decade 2001-2011, research groups (mostly Universities) from 13 different countries worked together in the ancient houses and roads in the shadow of the Vesuvius. Recent changes in the management system and several unfortunate events drove this season to an end, but the example of a long international cooperation in a big area, with the possibility to experiment all together new solutions and technologies in archaeology, can surely be considered as a highly positive one.

While the research can move some steps forward, the effort towards a good musealization of the structures goes on: the involvement of diving centers (see before) is creating a growing number of visitors; as announced in more than one occasion, new systems to improve the enjoyment of the site are ready to be realized, waiting for the necessary funding, among which the creation of an underwater video-control network, the opening of the *nymphaeum* to nocturnal visits and the setting up of a multimedia room on the mainland, from where the non-diving visitors will be able to watch their relatives or friends diving, and listen at the same time to the explications of the guide, who wears a mask with microphones.

Currently, the divers can visit five submerged spots, equipped with guidance ropes and explanatory PVC panels (Fig. 4), accompanied by official diving guides, instructors and divemasters; all these guides, members of the diving centres present in the territory, have been trained during three professional courses held by the technicians of the Superintendance. Due to the shallow depth, four of these spots can be visited also by snorkeling or on glass bottom boats; this latter solution is more and more popular among primary school groups. The submerged structures also allow to organize underwater archaeology training courses easily and field schools with activities of underwater survey, drawings and photos (Fig. 5). In recent years a lot of experiences like these have been carried on by the diving centres, with the collaboration of professional archaeologists, or by training organizations with the authorization of the Superintendance (see for example NAS courses or REITIA activities): more than two hundred people from different countries have received so far a training, basic or advanced, in underwater archaeology in Baiae, with courses of few days or even some months. Sometimes these activities are combined with seabed cleaning operations (Legambiente activities) or even with real research, with the final delivery of the results to the Authorities.

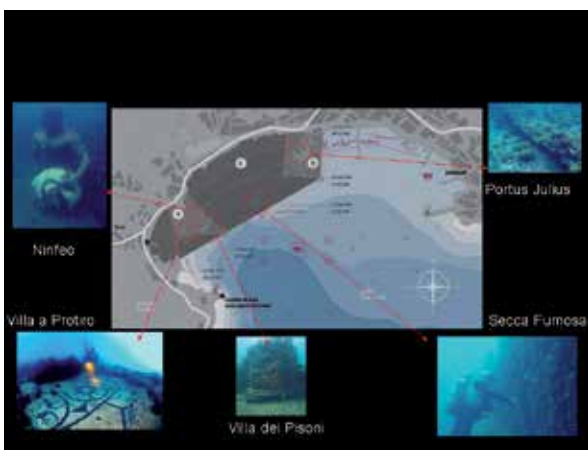


Figure 4. The first five diving spots in the park of Baiae.



Figure 5. Activities directed to the general public in the park of Baiae.

The diving centres, made responsible and aware of the cultural heritage, pay a fee for each diver, and at the same time engage themselves in the operation of control: with the help of the Authorities, if necessary, they have the task of sending away the pleasure boaters, who, ten years after the creation of the Park, still keep on sailing in the forbidden area or even anchor directly on the ancient walls and columns. As it was expected, and as already seen in similar experiences, like in Sicily, the diving clubs have learned that heritage can constitute a source of inexhaustible wealth; for that reason, they converted themselves in the first and most fervent defenders of the underwater sites: they keep away unauthorized intruders, they report to the Superintendance every damage or problem, and, when necessary, they even check if anything from the seabed is in the pockets of visitors jackets.

In this moment there are five underwater spots open to the public. Visitor center and Superintendance are working together to make possible the opening of new fascinating trails.

The Villa dei Pisoni, an extraordinary Roman villa identified thanks to the epigraphic data on a lead pipe, at the depth of 6 meters, not far from the tuff rocks of Punta dell'Epitaffio, is equipped with a 45 minute long itinerary, marked by a rope and by numerated panels; here the divers can explore the structures of the *viridarium*, the garden, following a row of niches and half-columns, now restored, and can see some white-tessera mosaics, protected by sandbags that the divemasters can remove on purpose.

The Villa con ingresso a Protiro, very close to the seasonal operating floating wharves of the modern Baian Marina, full of «gardens» of spirograph worms and shoals of sargoes, welcomes visitors with its white marble threshold, a fascinating geometric white and black tessera mosaic (Fig. 6), a series of residential rooms, a thermal complex with terracotta *tubuli* and a forest of *suspensurae*.

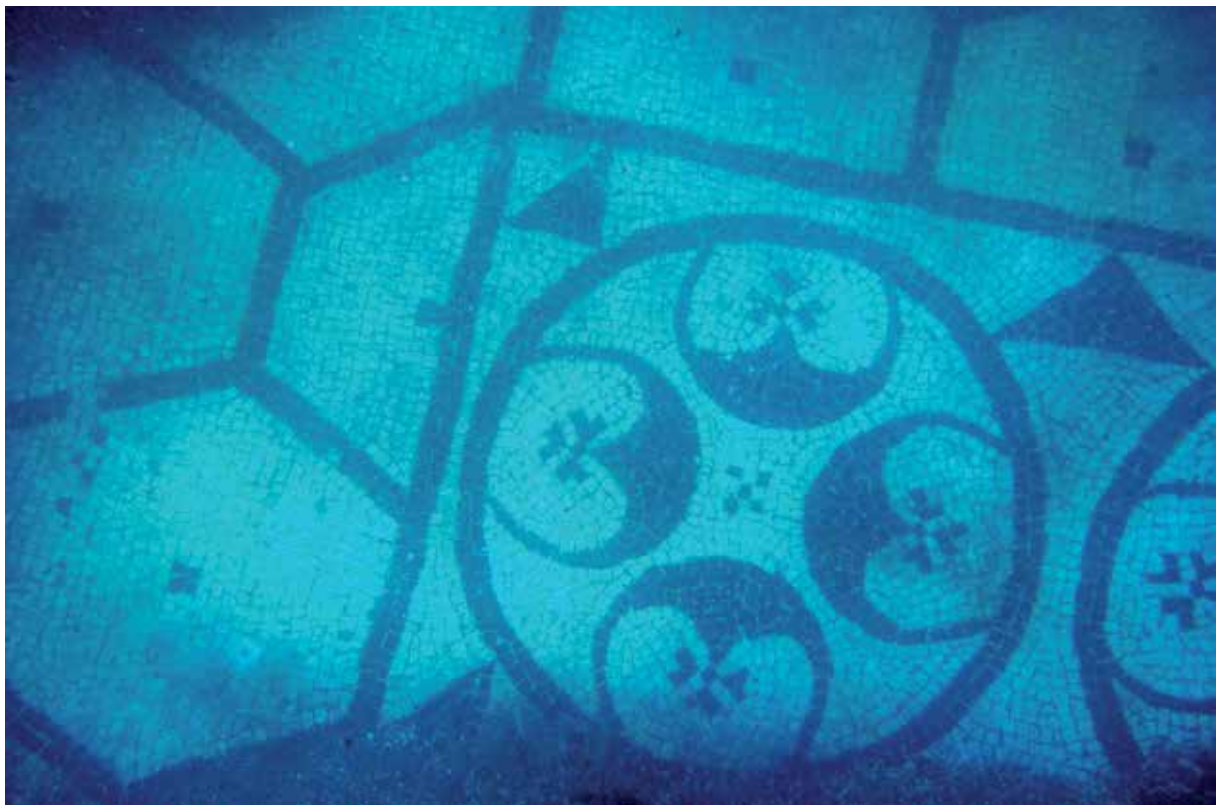


Figure 6. A mosaic preserved *in situ* in the submerged Villa con ingresso a Protiro.

The most impressive spot, probably, is the extraordinary Punta Epitaffio *nymphaeum*, where people can dive directly among the copies of the statues now exposed in the Museum of the Campi Flegrei, Ulysses and his mate Baios giving a cup of wine to the Cyclop (lost in ancient times), together with the members of the Emperor's family; here the divers can recognize easily the planimetric profile of the tricliniar room, and they can swim outside, following the paving stones of the ancient road, among which little octopuses and fish peep out, and exploring, under the supervision of divemasters and instructors, the nearby baths.

In the other side of the Marine Park, the Secca Fumosa, characterized by the huge piers in *opus caementicium* on the external border of *Portus Julius*, which, from a depth of 12 meters reach the surface of the sea; here, following the line of the Roman structures, in an environment incredibly rich in life, with sargoes, octopuses, moray eels, and brown meagres in every corner, the tourists can reach an amazing concentration of volcanic fumaroles, which heat the sand of the seabed with continuous emissions of hot bubbles, making the context unique for the proliferation of sulfobacteria, which sprout on everything creating a white layer.

Finally, the middle area of *Portus Julius*, the harbour built by Agrippa in 37 B.C. to face the menace of the pirates led by Sextus Pompeus, dismissed after a short time for the new military port of *Misenum*, then subsided because of the bradyseism, and finally affected by the closest eruption of Monte Nuovo; it was an ideal prosecution of the long waterfront of *Puteoli*, the ancient *Dicearchia*, the «city of the fair rule», founded in the 6th century B.C. by Samian exiles who were trying to build a utopian alternative to the tyranny of Polikrates; during the Roman time, the harbour underwent an impressive development, becoming, before the construction of the harbours of Claudius and Trajan, the real *portus annonarius* of Rome, the arrival station for huge cargoes from the whole Mediterranean. Here, at a depth of 2 meters, among walls in *latericium* that smoothly touch the surface of the sea, appear, one after the other, floors in *opus signinum*, decorated *a rosette* or *a meandro*, stairs, white-tessera mosaics, brick columns with traces of their *stucco* coating, doorsteps and dividing walls, all in a labyrinth of *borrea*, storage rooms full of pottery, *sigillata* fragments, handles and necks of amphorae, that the guides every time pretend to «discover» in front of the astonished visitors.

Almost fifteen years after the opening of the Park, the choice made by the Superintendence to entrust the diving centers with the visits, notwithstanding the difficulties that can arise (and that in some cases have actually arisen), among the members of a consortium who share a common aim, but are in commercial competition with each other, seems to be right: the site is undoubtedly more protected and exploited than in the past, and the visits, both of foreigners and locals, are increasing (Canoro/Izzo/Keller, in press). A result that, in a virtuous circle, rewards the diving centres that most have engaged themselves in the archaeological field: as an example, since it bet on the archaeology, one of the oldest centres in the territory, in less than five years has doubled its structures, has increased the number of boats, has created job opportunities for archaeologists, biologists and underwater photographers, has shifted from a week-end-only functionality to a full-week one, has promoted courses of introduction to the underwater archaeology and has obtained a special PADI reward for the big results in the growth of the OWD patents granted.

After decades of plunders, sacks and raids, and with the present situation that, in spite of the many difficulties, brings a wave of cautious optimism, a positive future seems to be really behind the corner. The potential of the Archaeological Marine Park of Baia is outstanding, both in term of scientific research possibilities, and in terms of touristic and economic resources. With the efforts of the Authorities and the Universities, the submerged area of the Phlaegrean Fields will be certainly studied and known more and more deeply. However, the future of this world heritage requires the commitment of everyone: the Italian Government, primarily, and those of the Phlaegrean

coastal cities, which definitely must have the courage to bet strongly on this site unique in the world, and to expand the borders of the protection area, protecting that heritage from any insane project of speculation: still today, indeed, periodically, every time there is a political change in the cities bordering the Gulf of Pozzuoli, there is who promises job opportunities and development through concrete and steel buildings, luxury marinas and new roads; construction works that undoubtedly could end up erasing every historical trace on the bottom of the sea, outside the Park boundaries. To explain to the people that wealth, for such areas, no longer comes from industry or constructions, but from the care and the preservation of the past, and from its correct exploitation, it's a really difficult task. It's a task that needs to start from below, from the diving centres, once again, from the press, the media, the internet, exhibitions and events connected with the history, not just created for specialists but for the people. The task of the archaeologist, who knows deeply the value of the cultural heritage to be protected, we are sure, is this too.

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References

- AA.VV. (1959a): «La prima campagna di rilevamento della città sommersa di Baia». In [*Forma Maris Antiqui*, vol. 2]. *Rivista di Studi Liguri*, vol. xxv, n.° 3-4, pp. 302-309.
- (1959b): «La costituzione a Baia della Sezione Napoletana del Centro Sperimentale di Archeologia Sottomarina». In [*Forma Maris Antiqui*, vol. 2]. *Rivista di Studi Liguri*, vol. XXV, n.° 3-4, pp. 309-310.
- (1960): «La seconda campagna di scavo e rilievo a Baia». In [*Forma Maris Antiqui*, vol. 3]. *Rivista di Studi Liguri*, vol. XXVI, n.° 1-4, pp. 361-364.
- ANDREAE, B. (1992): «Il palazzo imperiale sommerso di Punta Epitaffio». In *Civiltà dei Campi Flegrei. Atti del Convegno Internazionale*. Edited by GIGANTE, M., Napoli, Giannini, pp. 81-91.
- ANDREAE, B., and ZEVI, F. (eds.). (1983): *Baia. Il ninfeo imperiale sommerso di Punta Epitaffio*. Napoli, Banca Sannitica.
- BENINI, A. (2004): «Storia, archeologia e tutela dei beni archeologici sommersi: l'esempio dei Campi Flegrei». In *Lezioni Fabio Faccenna, Conferenze di Archeologia Subacquea (III-V ciclo)*. Bari, Edipuglia, pp. 35-43.
- (2005), «I parchi sommersi di Baia e Gaiola». In *L'Archeologo Subacqueo*, anno XI, n.° 1, p. 19.
- BOMBICO, S.; CEREZO ANDREO, F., and FERNÁNDEZ ABELLA, D. (2013): «El Patrimonio Cultural Subacuático, un tesoro de todos y para todos. Arqueología Subacuática y participación social en la protección del PCS». In *Arqueología para el siglo XXI: actas de las V Jornadas de Jóvenes en Investigación Arqueológica, Santiago de Compostela, mayo de 2012*. Madrid, JAS Arqueología, pp. 236-238.
- BOMBICO, S.; FERNÁNDEZ ABELLA, D., and STEFANILE, M. (2012): «Arqueologia Subaquática – Dez anos de Convenção da Unesco para a Protecção do Património Cultural Subaquático». In *Actas das IV Jornadas de Jovens em Investigação Arqueológica - JIA 2011*. Edited by CASCALHEIRA, J., and GONÇALVES, C., vol. 2, Faro, Universidade do Algarve, Núcleo de Arqueologia e Paleoecologia, pp. 35-36.

- CANORO, C.; IZZO, F., and KELLER, K. (in press): «Archaeological Diving Tourism: a development opportunity in Campi Flegrei area». In *ISUR8: Proceedings of the 8th International Symposium on Underwater Research*. Napoli, Procida, 2014. Edited by STEFANILE, M., Napoli.
- D'ARMS, J. H. (1970): *Romans on the Bay of Naples: a social and cultural study of the villas and their owners from 150 b.C. to a.D. 400*. Cambridge, Mass., Harvard University Press.
- DE FRANCISCIS, A. (1967): «Underwater discoveries around the bay of Naples». In *Archaeology*, vol. XX, n.º 3, pp. 209-216.
— (1970): «Baia». *Enciclopedia dell'arte antica, classica e orientale*. Suppl. 1970. Roma, Istituto dell'Enciclopedia italiana, pp. 133-134.
- DI FRAIA, G. *et alii* (1986): «Contributi alla topografia di Baia sommersa». In *Puteoli. Studi di storia antica*, vol. 9-10, pp. 211-299.
— (1993): «Baia sommersa. Nuove evidenze topografiche e monumentali». In *Archeologia Subacquea. Studi, ricerche e documenti*, vol. 1, pp. 21-48.
- FELICI, E. (1997): «Baia in mostra». In *L'Archeologo Subacqueo*, anno III, n.º 2, pp. 8-11.
- FROST, H. (1983): «The Nymphaeum at Baia». In *The International Journal of Nautical Archaeology and Underwater Exploration*, vol. 12, n.º 1, pp. 81-83.
- GIANFROTTA, P. A., and MANISCALCO, F. (eds.). (2001): *Forma Maris: Forum internazionale di archeologia subacquea. Pozzuoli, 22-24 settembre 1998*. Napoli, Massa.
- LAMBOGLIA, N. (1971): «Inizio dell'esplorazione di Baia sommersa (1959-1960)». In *Actas del III Congreso Internacional de Arqueología Submarina. Barcelona, 1961*. Bordighera: Instituto Internacional de Estudios Ligurens, pp. 225-249.
- MAIURI, A. (1961): «L'esplorazione archeologica sottomarina di Baia». In *Atti del II Congresso Internazionale di Archeologia Sottomarina. Albenga, 1958*. Bordighera, Istituto Internazionale di Studi Liguri, pp. 108-112.
- MANISCALCO, F. (1995): «Un ninfeo severiano dalle acque del porto di Baia». In *OSTRAKA. Rivista di antichità*, vol. IV, n.º 2, pp. 257-271.
— (1997): *Ninfei ed edifici marittimi severiani del Palatium imperiale di Baia*. Napoli, Massa.
— (1999): «Nuovi dati sulla Forma Maris Antiqui di Baia. La dinastia dei Severi, storia, archeologia, religione». In *Gli imperatori Severi. Storia, archeologia, religione*. Edited by DAL COVOLO, E., and RINALDI, G., Roma, LAS, pp. 147-156.
- MANISCALCO, F., and SEVERINO, N. (2002): «Recenti ipotesi sulla conformazione del Lacus Baianus». In *OSTRAKA. Rivista di antichità*, vol. 11, pp. 167-176.
- MINIERO, P. (2000): *Baia. Il Castello, il Museo, l'Area archeologica*. Napoli, Electa.
- NAPOLI, M. (1953): «Di una villa marittima di Baia». In *Bollettino di Storia dell'Arte del Magistero di Salerno*, vol. 3, pp. 76-107.
- PETRIAGGI, R., and MANCINELLI, R. (2004): «An experimental conservation treatment on the mosaic floor and perimeter walls of room n. 1 of the so-called "Villa con ingresso a protiro" in the underwater archaeological park of Baia (Naples)». In *Archaeologia Maritima Mediterranea*, vol. 1, pp. 109-126.

- PETRIAGGI, R., and DAVIDDE, B. (2005): «The analytical data card of underwater archaeological finds (SAMAS) for diagnosing the deterioration». In *Archaeologia Maritima Mediterranea*, vol. 2, pp. 161-170.
- (2007): «Restaurare sott'acqua: cinque anni di sperimentazione del NIAS-ICR». In *Bollettino ICR*, vol. 14, pp. 127-141.
- RACE, G. (1994): «Così fu scoperta nel 1923 Baia Sommersa. La relazione del Ministro al Senato due anni dopo». In *Bollettino Flegreo. Rivista di storia, arte e scienze*, terza serie, n.° 1, pp.
- RICCI, S. *et alii* (2007): «Il degrado biologico dei manufatti archeologici dell'area marina protetta di Baia». In *Bollettino ICR*, vol. 14, pp. 116-126.
- SCOGNAMIGLIO, E. (1993): «Il rilievo di Baia sommersa. Note tecniche e osservazioni». In *Archeologia Subacquea. Studi, ricerche e documenti*, vol. 1, pp. 65-70.
- (1997): «Aggiornamenti per la topografia di Baia sommersa». In *Archeologia Subacquea. Studi, ricerche e documenti*, vol. 2, pp. 35-45.
- STEFANILE, M. (2011): «Research, protection and musealization in an underwater archaeological park: the case of Baia (Naples-Italy)». In *Actas das IV Jornadas de Jovens em Investigação Arqueológica - JIA 2011*. Edited by CASALHEIRA, J., and GONÇALVES, C., vol. 2, Faro, Universidade do Algarbe, Núcleo de Arqueologia e Paleoecologia, pp. 57-63.
- STEFANILE, M. (2012): «Baia, Portus Julius and surroundings. Diving in the Underwater Cultural Heritage in the Bay of Naples (Italy)». In *Proceedings of the 6th International Symposium on Underwater Research – Antalya/Kemer 2012*. Edited by ONIZ, H., and ALI CICEK, B., pp. 28-47.
- STEFANILE, M., and AGIZZA, S. (2012): «Arqueología subacuática y participación social en los parques marinos. Dos ejemplos desde Italia: Baia y Castellabate». In *Arqueología para el siglo XXI. Actas de las V Jornadas de Jóvenes en Investigación Arqueológica, Santiago de Compostela, mayo de 2012*. Madrid, JAS Arqueología, pp. 256-262.
- ZEVI, F. (2009): *Museo archeologico dei Campi Flegrei. Castello di Baia*. Napoli, Electa.
- ZEVI, F., and ANDREA, B. (1982): «Gli scavi sottomarini di Baia». In *La Parola del Passato. Rivista di studi antichi*, vol. 37, fasc. 203, pp. 114-156.