Chapter 6
Atlit-Yam: A Unique 9000 Year Old Prehistoric Village Submerged off the Carmel Coast, Israel – The SPLASHCOS Field School (2011)

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Abstract The site of Atlit-Yam is one of the best preserved and most thoroughly investigated submerged prehistoric settlements in the world, with a wealth of finds of material culture and organic remains characteristic of a Pre-Pottery Neolithic village based on a mixed economy of farming and fishing 9000 years ago. Stone-lined water wells were also found, providing a precise measure of sea-

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level position when the site was in use, as well as a megalithic structure and human burials. Eventually the site was abandoned in the face of progressive sea-level rise, and later Neolithic settlements, were occupied at a higher level, and are now submerged closer to the shore. SPLASHCOS funding to support a Training School, allowed renewed investigations in 2011, providing an unusual opportunity for early stage researchers to gain experience and training on a submerged prehistoric settlement which also resulted in the discovery of some new features. This chapter provides a summary of the finds recovered from Atlit-Yam, the evidence for sea-level change, and a detailed description of the methods used in underwater survey and excavation.

6.1 Introduction

Today the remains of submerged settlements, and indeed, most of the inundated prehistoric landscape, are, generally speaking, buried beneath post-inundation marine and fluvial sediments or biogenic rock and are mostly invisible and inaccessible. The likelihood of encountering such remains depends on exposure of the material by natural processes of coastal or underwater erosion or by human intervention. In principle, submerged prehistoric remains may occur at any depth on the continental shelf. In practice, however, the more deeply submerged the original landscape is, the greater the difficulty of locating archaeological material. This is partly because of the technical and technological difficulties of surveying the seabed and locating material beyond the range of normal SCUBA diving. Additional factors are that deeper landscapes would have been exposed as dry land for shorter periods of the sea-level cycle, and settlements from earlier periods are likely to have been more ephemeral, lacking the substantial structures and other features that make sites of later periods more easily visible on the seabed (see Galili et al. 2013, in press; Galili 2016, for further detail).

On the Carmel coastline of northern Israel, the most promising areas to find inundated human settlements, in terms of preservation, concentration of material and accessibility, are those which were located on dry land close to the ancient coastline during the Mesolithic, Neolithic and Chalcolithic periods (c. 12,000–6,500 BP). Today these sites are at 0–40 m below present sea level, with the optimal depth for finding traces of human settlement at 0–15 m. These submerged settlement sites are covered most of the year by shifting surface-sands. Storms occasionally remove the sand cover and expose wide areas on the sea bottom including archaeological sites. However, exposure, in its turn, makes the archaeological material vulnerable to fairly rapid and massive erosion and loss, unless survey and excavation are carried out immediately, sometimes requiring a rapid or rescue-style approach (Hershkovitz and Galili 1990; Galili et al. 1993, 2005a, 2010).

The 2011 SPLASHCOS field school, held at the Atlit-Yam site on the northern Carmel coast of Israel, aimed at providing practical experience for early career researchers by enabling them to engage in underwater excavation of in situ archaeological features. The Atlit-Yam submerged Pre-Pottery Neolithic village was chosen as an ideal location since it is one of the best preserved submerged prehistoric sites and represents a well-known and archaeologically important site for the Neolithic period as a whole (Fig. 6.1A). Other documented submerged sites of later date are also present along this coastline at shallower depths (see Galili et al. Chap. 7, Fig. 6.1B). Excavating at Atlit-Yam provided an opportunity for students to become familiar with the environmental conditions, site taphonomy and practical and scholarly working procedures of exploring a submerged prehistoric site. In addition, the participants were instructed in local and regional material culture, as well as faunal, floral and bioanthropological assemblages. Special emphasis was placed on methods of working with materials preserved in a submerged environment.

In this chapter, we summarize the finds recovered from excavations at Atlit-Yam including evidence of progressive sea-level rise and its impact on prehistoric settlements along this coastline, and set out the details of the training school and the methods employed to undertake renewed excavations at the site in 2011.

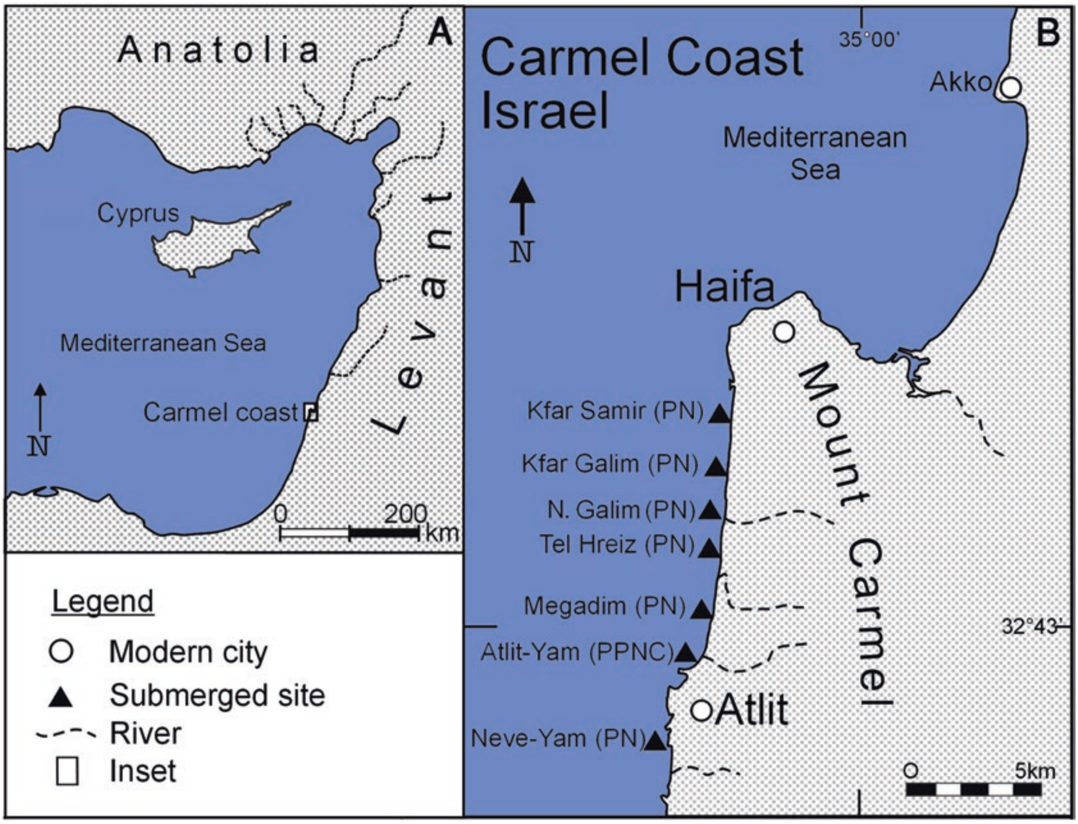


Fig. 6.1 Location maps: **A** showing position of Carmel Coast within the Eastern Mediterranean, and **B** showing detail of archaeological sites mentioned within the text

6.2 The Atlit-Yam Site

The site is now located approximately 200–400 m offshore on the north bay of Atlit. The remains of the Neolithic village are dispersed on the seabed at a depth of 8–11 m below modern sea level (Galili et al. 1988, 2005a; Galili and Rosen 2011a, b). The site covers an area of about 40,000 m^2. It is exceptionally well preserved and is unique in its scale, composition and richness of finds relative to other known prehistoric sites on continental shelves the world over. At Atlit-Yam the earliest known constructed (stone-walled) fresh-water wells have been excavated together with other stone-built constructions such as rectangular dwellings (Figs. 6.2 and 6.3) and megaliths, which have been associated with ritual behaviour (Fig. 6.4). The site also contains installations and facilities for the production and storage of food and abundant remains of tools made of flint, stone, wood and bone, numerous remains of animals and plants that were consumed at the site, and tens of human burials (Fig. 6.5).

Galili et al. (2002) proposed that Atlit-Yam is the oldest example of a Mediterranean fishing village, based on the simultaneous utilization of marine and terrestrial resources. Remains of about 100 different plants, cultivated or collected from the wild, were recovered as well as bones of fish, domestic and wild animals, indicating that the village's subsistence was based on a mixed economy of agriculture with animal husbandry supplemented by hunting, gathering and fishing. Such foods form the basis of what is recognized today as the traditional Mediterranean diet (Galili et al. 2002, 2004). Analysis of human remains demonstrates that the population had to cope with diseases such as

Fig. 6.2 Model of a rectangular dwelling from Atlit-Yam (Photo by J Galili 2002)

Fig. 6.3 Divers covering rectangular dwelling, using sand bags to prevent erosion (Photo by J Galili 1995)

tuberculosis and malaria, the latter associated with the local marshes (Hershkovitz et al. 1991; Galili and Rosen 2011a). An ear pathology found in some of the human skeletons is symptomatic of diving in cold water, most probably associated with fishing activities (Galili et al. 2005a). In spite of these diseases, a substantial part of the population reached the age of 50 years, an exceptional age relative to the Neolithic inhabitants of the Levant (Eshed and Galili 2011). It is possible that the balanced diet based on a broad spectrum of terrestrial and marine resources contributed to the relatively good health and longevity of the inhabitants.

Sea-Level Change Atlit Yam also provides direct evidence of sea-level change and insight into how the prehistoric inhabitants adapted to a continuously rising sea level. This is highly relevant to the

Fig. 6.4 *Top*: Megalithic structure under excavation (Photo by I Greenberg 1996); *Lower*: Reconstruction of the structure in use (Drawing by S Ben Yehuda)

Fig. 6.5 Human burial protected with sand bags (Photo by A Zaid 1988)

modern situation, given evidence of sustained global sea-level rise during the twentieth century, and predictions of a continued rise during the twenty-first century (Vermeer and Rahmstorf 2009; Gehrels 2010, p. 31; Church and White 2011). Even the modest sea-level rise in the past century has resulted in flooding, coastal erosion and damage to, or destruction of, modern coastal facilities, as well as

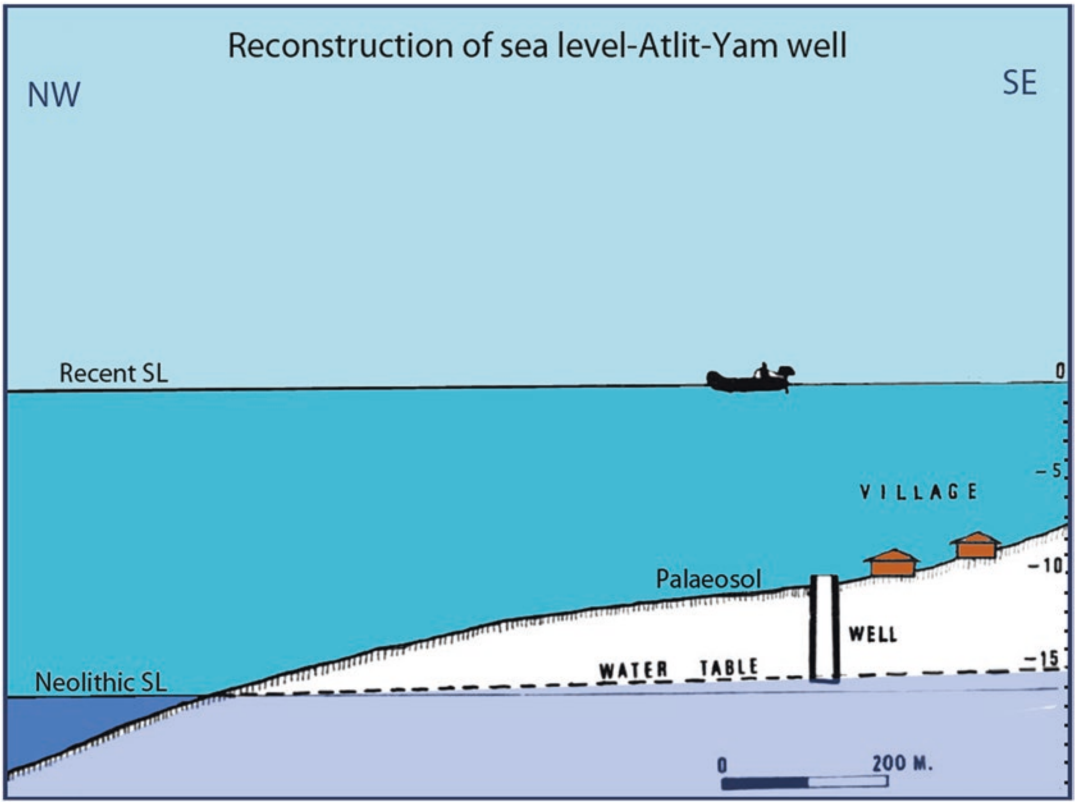


Fig. 6.6 Reconstruction of sea level at time of occupation at Atlit-Yam using water wells (E Galili)

ancient archaeological sites located on the modern coastline. These destructive effects are likely to intensify in the coming century, with ongoing threats to the offshore and onshore cultural heritage.

At the Last Glacial Maximum 20,000 years ago, the coastline in the Carmel region was some 10 km west of its present position. By the time Atlit-Yam was established, sea-level rise had brought the shoreline to within ca. 500 m of the site, at which time the sea was some 16 m below the present level. This is indicated by the most fully excavated water well (Feature 11), with a base at 15.5 m below present sea level indicating the position of the freshwater table at that time (Fig. 6.6). Subsequently, sea-level continued to rise at a mean annual rate of 5–6 mm between 9200 and 7000 BP and 1–4 mm between 7000 and 4000 BP. That led to progressive salinization, flooding and ultimately abandonment of the village, and the establishment of later settlements of the Pottery Neolithic period at a higher elevation. These sites are presently submerged closer to the modern shore. The combination of archaeological evidence from water wells and other features provides an insight into the human response to progressive sea-level rise and narrowing of the coastal plain, as well as an unusually detailed and precise chronology for the pattern of sea-level change on this coastline over the past 9000 years (Fig. 6.7).

6.3 The 2011 Field School

Altogether there were 50 participants, investigators and students, most of them divers, including 12 international SPLASHCOS members. A total of 150 dives were conducted. During the excavation, the participants exposed structures previously identified and studied at the site. These included a water-well (Feature 11) (Fig. 6.8) and an upstanding megalithic monument (Feature 56, Fig. 6.4). As part of

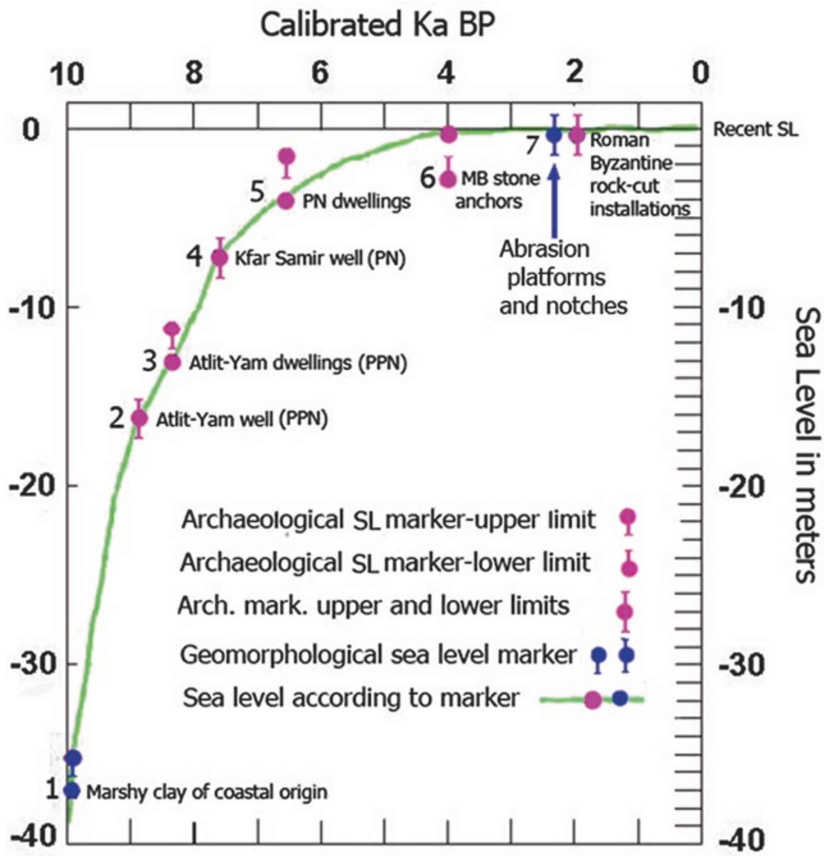


Fig. 6.7 Curve showing the sea-level changes in the Carmel coast based on archaeological evidence (E Galili)

the terrestrial work, Clive Ruggles and students carried out a Total Station survey from the shore in order to connect this megalithic structure to the visible horizon and to determine its possible astronomical significance. An additional circular structure, appearing to be another water-well, was also discovered and partially excavated. This is an exciting and significant new contribution from the 2011 season as the wells tend to yield a wealth of well-stratified material and information. The new feature was excavated by the SPLASHCOS divers as part of their training. Only the top layers of the well, down to 20 cm below the present seabed, were removed, and the material from this structure was bagged and wet-sieved on-shore. It contained animal bones, flint and bone tools, as well as waterlogged plant remains.

In addition to activities in the field, the training program also included lectures by experts, excursions to archaeological sites, visits to museums and demonstrations in laboratories. These included the Hecht Museum at the University of Haifa; the Prehistoric Museum of Haifa (where the exhibition presenting the submerged settlements off the Carmel coast is displayed), and the National Maritime Museum in Haifa and its underwater archaeology section. A visit to the UNESCO Heritage prehistoric site of Nahal Me'arot, where an unparalleled time-depth of prehistoric cultures ranging from the Lower Paleolithic to the Neolithic was discovered, was guided by M. Weinstein-Evron, the excavator of el-Wad Cave and Terrace. The program also included visits to the archaeozoological laboratory of the University of Haifa, guided by I. Zohar and a workshop on human bones from the excavations at Atlit-Yam conducted by I. Hershkovitz in the Tel Aviv University laboratories where these bones are curated. In addition, a dive excursion was undertaken to the Underwater Archaeological Park located in an inundated canyon, at 20 m depth, west of Haifa.

Fig. 6.8 Divers excavate well no 11 in Atlit-Yam (Photo by I Greenberg 2011)

6.4 Excavation Methods

Underwater archaeological excavation methods developed by the maritime archaeology community have largely focused on shipwreck sites. Excavating a submerged settlement requires coping with issues similar to terrestrial archaeology, such as multi-period stratigraphy, duration of site occupation and the function of structures. To these are added additional complications associated with the marine environment and sea conditions when working underwater.

Participants were exposed to many aspects of fieldwork and post-excavation treatment of materials on a submerged site. However, excavation of such sites entails much pre-excavation work and other elements that could not be demonstrated to all of the participants of the field school. The following section details the steps taken prior to, during and following the excavations at Atlit-Yam since initiation of research at the site in 1984. This may serve as an outline to guide researchers planning to work on similar inundated sites.

6.4.1 Pre-fieldwork Collection of Information

Any long-term plan for locating and studying inundated archaeological sites should take advantage of information received from members of the public associated with maritime activity (e.g. divers, fisherman and amateur underwater archaeologists). Furthermore, raising public awareness of the importance of archaeological investigation and recruiting the public as active partners is essential. This was a feature of the Atlit-Yam research from the beginning.

6.4.2 The Use of Remotely Operated Devices

Sub-bottom profiler (SBP) surveys at the site were carried out to map the sub-surface, assess the thickness of the overlying sand and the configuration of the paleo-landscape. The IOLR (Israel Oceanographic and Limnological Research Institute) conducted an initial survey using 3.5 kHz equipment (Adler 1985). Another SBP survey aimed at locating prehistoric structures overlain by sand was conducted in 1984 by Harold Edgerton, with no conclusive results (Galili 1985). A multi-beam echo sounder was used to map bathymetry. Experiments for locating concentrations of flint implements are currently being conducted at the site by Ole Grøn and others (see Grøn and Boldreel 2014).

6.4.3 Shallow Water Surveying by Divers and Locating Submerged Sites and Features

The following surveying, mapping and documentation activities were conducted all year round and are ongoing:

- Walking survey on the beach, retreaving prehistoric artefacts washed ashore
- Searching for areas where underwater changes caused by coastal erosion have occurred
- Snorkelling surveys
- Underwater surveys by SCUBA divers
- Sub sea-bed probing using water-jet
- Applying a variety of techniques in documentation, photography and mapping
- Tagging of structures and site features (using iron poles and buoys)

It is important to consider how one can practically work in shallow water on a coast that is exposed to wave action. Investigating submerged prehistoric sites in the inter-tidal and the surf zones on an open coast requires special techniques and skills. The shallow sectors of the sites are too shallow to apply the underwater excavation methods developed and described below for Atlit-Yam (Galili et al. 2005a). Traditional terrestrial excavation methods are also inadequate since the sites and finds are submerged. Waves interfere with the excavation and the visibility is poor. Usually in these conditions in Israel such sites are covered by 1–2 m of sand and their exposure is accidental, unpredictable and cannot be pre-planned. The exposure may last a few hours to a few days and then the site is again covered by mobile sands. During exposure, the site erodes and finds may shift or be damaged. Removing the sand for excavation is complicated and extremely expensive. It requires the use of heavy dredging and the building of protective caissons of sheet piles which are costly and time consuming.

Along the Carmel coast an alternative excavation method was developed: the archaeologists simply adopted the strategy of allowing the sea to do the job of removing the overlying sediments. After every storm, sites were surveyed to locate newly exposed areas. When an exposure occurred, a rapid rescue and conservation operation including excavation and documentation was carried out by archaeologists, either by diving or, more often, by snorkelling. The loose sand that covered the delicate finds was removed by manual hand-fanning. As a result, after several decades, a rather large portion of a jigsaw puzzle of randomly documented sections of sites has become available.

6.4.4 Excavation and Documentation

6.4.4.1 Pre-excavation

Before the actual underwater archaeological excavation of a submerged prehistoric settlement can begin, operational considerations and preparation must be undertaken.

These activities include:

- Choosing the season for excavation: the preferred seasons for underwater excavations along the Israeli coast are spring and autumn. During these seasons the sea is relatively calm and the visibility is much better underwater
- Organizing all aspects of health and safety and carrying out risk assessments for both onshore activity and diving work
- Setting up the excavation base camp (Fig. 6.9)
- Organizing and managing diving and boating operations including transportation of divers to and from the site according to a planned timetable
- Arranging a floating inspection and supervision platform (on a boat or a pontoon) for operating the dredging system and monitoring divers (Fig. 6.10)
- Preparing and running a registration/documentation system including: (1) coastal base-camp diary containing the reports of the dive teams, (2) graphics diary containing the drawings produced by the dive teams, and (3) a white board with the daily schedule of activities and dives
- Preparing excavation equipment for the diving teams
- Instructing and guiding the excavating teams before diving (Fig. 6.11)

Fig. 6.9 Setting the coastal excavation camp for the Atlit-Yam 2011 field school (Photo by E Galili 2011)

Fig. 6.10 Setting the dredging system on a boat (Photo by E Galili 2011)

Fig. 6.11 Instructing the excavating teams before diving (Photo by E Galili 2011)

- ‘Dry demonstration’ on land of how to operate the equipment
- ‘Dry demonstration’ on land of the dredging systems operation
- Tagging of structures and site features (using iron poles and buoys)

The following descriptions refer mainly to excavations which took place prior to 2011, but many of these activities were also undertaken during the SPLASHCOS field school.

6.4.4.2 General Excavation

The upper layer of loose sand and gravel covering the palaeosol in which the site is embedded was removed manually by fanning or assisted by the dredging system until the clay containing the archaeological material was reached. The archaeological deposit was excavated in 10 cm spits in gridded squares of 0.5 by 0.5 m. The excavated material was collected in tagged plastic find-bags, marked by square and layer, and transported to the shore laboratory for sieving (Fig. 6.12). Small or fragile artefacts were collected in plastic jars and core samples of in situ clay were taken for pollen and sediment analysis.

Fig. 6.12 Floating and transferring bags containing the excavated material to shore for sieving (Photo by I Greenberg 1998)

6.4.4.3 Documentation and Excavation of Individual Structures

At Atlit-Yam, each individual structure, installation or burial that was identified was marked with a galvanized iron rod bearing an identifying plastic tag. The rod protruded 0.7–1.0 m above the seabed to enable relocation in case the feature was covered by sediments. From the top of each rod, a numbered buoy was floated that could be located from the coast by a laser distance meter. Additionally, a marked and weighted rope that served as a baseline was laid in a straight line on the sea floor and the divers mapped each feature relative to the baseline. The two ends of the baseline were mapped from the coast and the site plan was prepared by coordinating the buoy measurements taken from the coast and the measurements taken by the divers.

Underwater excavation of individual structures was carried out using standard SCUBA gear and an induction dredge operated by a water pump set on a boat (Fig. 6.13) as is standard practice in maritime and underwater archaeology. Each diver also carried equipment for documentation during the excavation. A grid made of synthetic fibre or metal rods was set over the structure to be excavated (Fig. 6.14). The excavation team included three divers. One diver worked in the suction area holding the plastic hose to remove the suspended particles disturbed by the working process; this substantially improves visibility. A second diver monitored the exhaust end of the dredging system, where a collecting box was set. A third diver excavated using only a spatula or a trowel. The material dredged or excavated from each square was collected and placed in a separately tagged plastic bag. Delicate artefacts were stored in tagged plastic jars filled with sea water.

6.4.4.4 Excavating Vertical Shafts and Water-Wells

In order to excavate a shaft that penetrates deep into the seabed, special procedures and techniques were used at Atlit-Yam. The excavating diver wore a safety helmet and knelt down inside the pit without diving fins, where the shaft diameter allowed. If the shaft was too narrow, the diver was positioned upright with the head down. A second diver was responsible for the excavator's safety and was positioned at the opening of the shaft and also lifted stones from the shaft bottom using a lifting box tied to a rope. A third diver monitored the dredger's exhaust, ensuring that the excavated fill entered the collecting box. The clayey fill within the water-wells was excavated manually in 10 cm spits, and the finds—including stone, bone and wooden artefacts, and faunal and floral remains—were stored in tagged bags and jars. After every 10 cm of deposit, the third diver transferred the excavated material from the box into tagged bags and prepared them to be lifted ashore. The murky water and some of the fill was dredged. Stones were removed manually into the lifting box and were taken out of the pit by the second diver assisting the excavator. Core samples of undisturbed clay were taken every 10 cm for pollen and sediment analysis (Fig. 6.15). In the case of the deep wells, the walls were supported by metal rings arranged at 0.7 m intervals, to prevent collapse (Fig. 6.16).

6.4.4.5 Documenting and Excavating In-Situ Human Burials

Before excavating burials, observations and documentation procedures were undertaken of the grave structure or grave type, the location of the grave in the site relative to adjacent structures and installations, traces of ceremonial activities and other activities associated with the burial (fireplaces, remains of offerings and ceremonial meals, grave goods around the burial). The burials were classified according to the following categories: (1) Primary burials (including a subcategory of disturbed burial) relating to skeletons with bones in complete or partial articulation, showing no signs of removal from their original burial site; this category may also include complete, articulated skeletons that had been disturbed in antiquity, or were disturbed by post-depositional processes; (2) Secondary burial is a burial

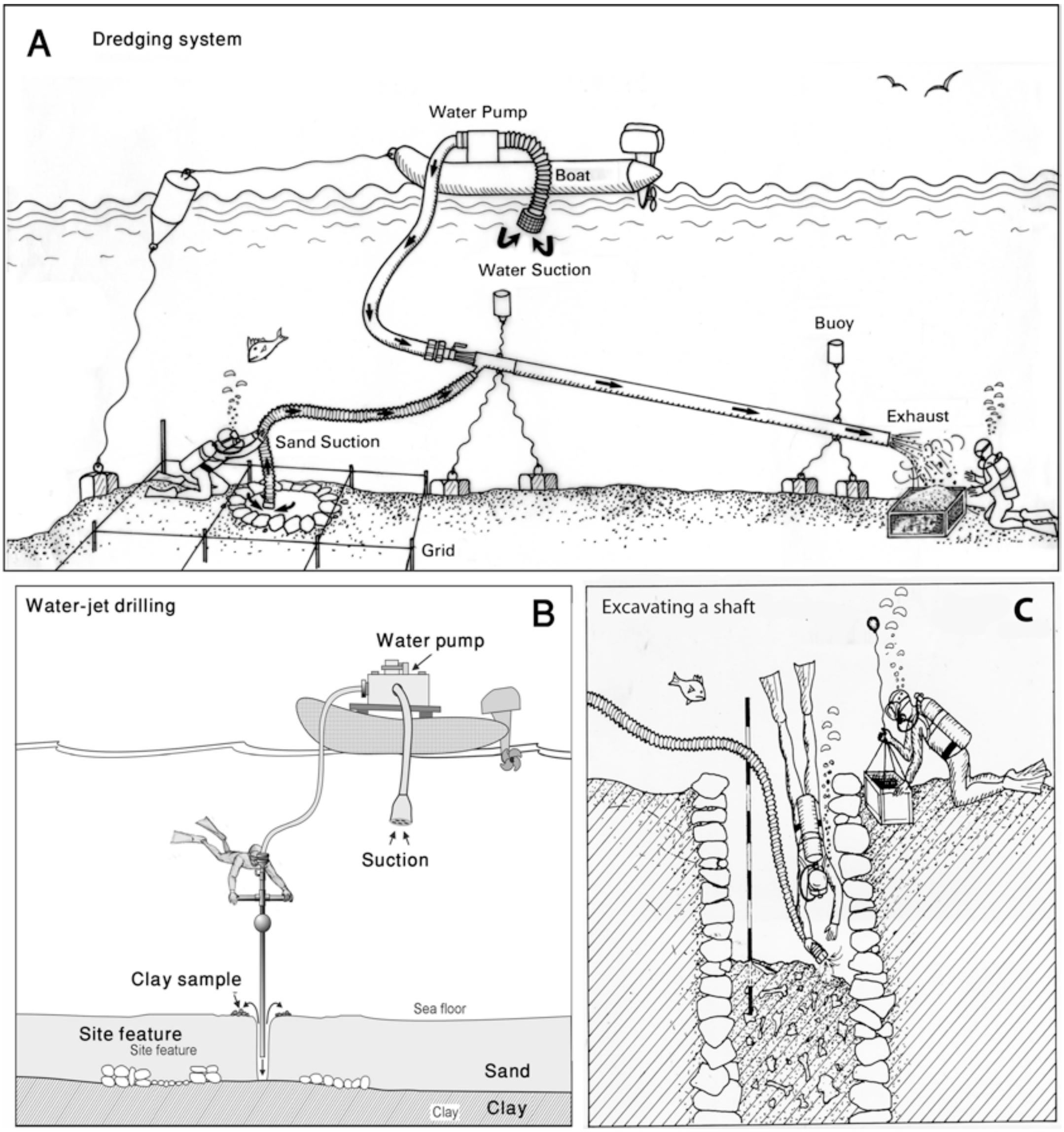


Fig. 6.13 Excavations methods: **A** the dredging system, **B** water jet drilling and sampling, **C** excavating water wells (Modified after Galili and Rosen 2011a)

of an individual that was deliberately removed from its original grave site to a new location in antiquity. In these cases, the bones are not in articulation (Galili et al. 2005a); (3) Skull or skull fragments found (usually on living floors) without post-cranial bones; (4) Isolated bones/teeth scattered randomly on-site, which are often found during surface surveys.

After the completion of the spatial documentation of the grave site and its surroundings, the upper layer of loose sand and gravel covering the skeleton was removed manually. The human skeleton was then carefully excavated, using spatula and trowel to remove the clay from the bones. Following partial exposure of the skeleton to enable recording of sufficient details of the position, the skeleton and adjacent artefacts within the grave were measured, drawn and photographed. Undisturbed core samples of sediments were taken in the pelvic area (to obtain possible traces of food), and in other locations to search for plant pollen that might have been associated with the burial (Fig. 6.15).

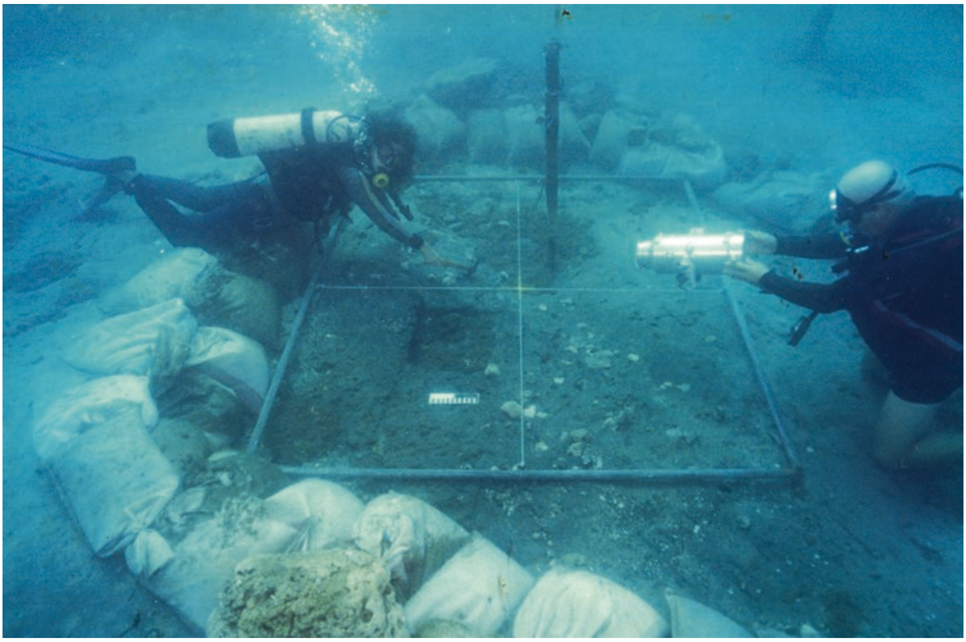
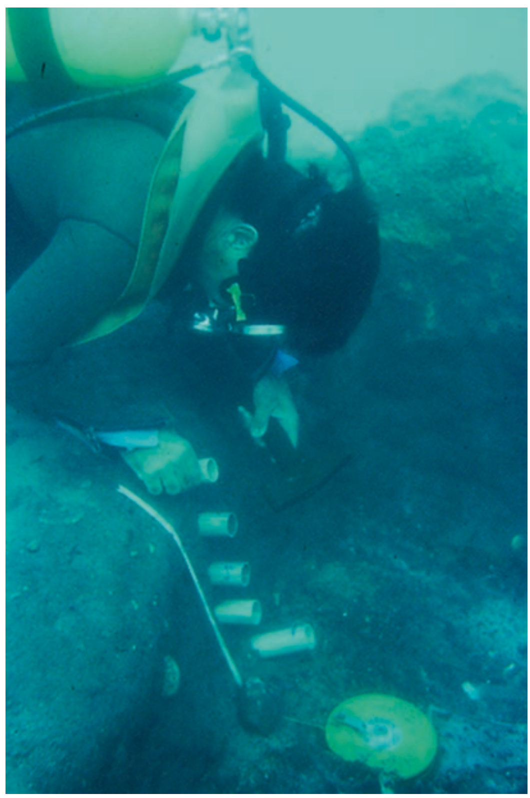


Fig. 6.14 Excavating an archaeological feature by squares using a metal grid (Photo by I Greenberg 1998)

Fig. 6.15 Taking undisturbed cores for pollen and sediment analysis (Photo by J Galili 1989)



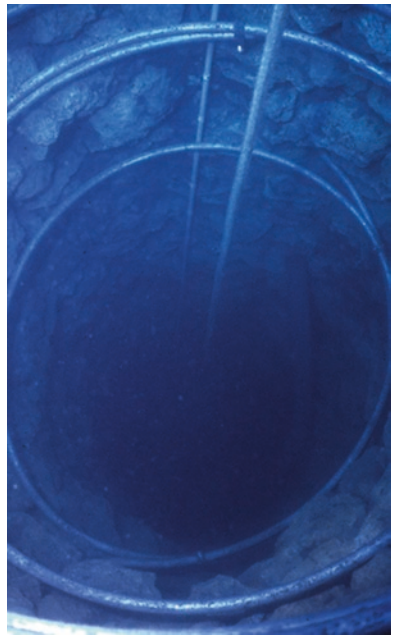


Fig. 6.16 Supporting a Pre-Pottery Neolithic well in Atlit-Yam with iron rings during the excavation to prevent collapse (Photo by I Greenberg 1995)

The burial position of each skeleton was described as flexed, semi-flexed or straight and was recorded using a graphic scheme based on the angles of the elbow, shoulder, hip and knee joints (Galili et al. 2005a). In addition, various observations related to the orientation of the inhumations were made, including direction of the head, lying position (on the left or right side, on the back or belly) and direction of the face. The possibility of group burials, articulated bones indicating a primary burial, and non-articulated bones indicating secondary burial was noted. Given the limitations of time and sea conditions, no attempt was made to remove an entire skeleton within its context. Removing a whole block of clay that size would not have been feasible, but such an operation may be considered in areas where there is no danger of immediate erosion or where sea conditions are favourable. Instead, the bones of each skeleton were removed separately one by one. Where possible, the bones of each section of the skeleton (hands, legs, pelvic area, ribs spine and skull) were removed together to a solid container to prevent breakage and post-excavation exposure damage. If possible, skulls were removed whole by placing them in a container and covering them with fine sand to avoid movement and damage while transferring to the land base. When the work had to be stopped overnight or for several days due to limitations dictated by sea conditions, the exposed skeletons were temporarily protected from wave erosion. In such instances, the skeletons were covered by a woven plastic sheet that was, in turn, covered by bags partly filled with sand (Fig. 6.5).

6.4.4.6 Processing Archaeological Material at the Coastal Base

All excavated materials from the site underwent a series of post-excavation processes which varied depending on the material and related requirements for conservation and analysis. Sediments containing the archaeological material retrieved from the site were soaked in freshwater tanks and were separated and sorted into different elements by material and size. The coarse materials (artefacts and stones larger than 2 cm) were removed manually and were dried in wooden trays. Waterlogged plant material was then separated from the rest of the sediments in the water by manually spinning the water in the tank and pouring it through a 0.5 mm plastic sieve. This plant material was kept in sealed jars in a freshwater and alcohol solution and preserved in a refrigerator for further study. Some of the plant remains were kept in sea water for future radiocarbon dating to prevent contamination. The coarser material remaining in the water was sieved using a 1 mm mesh and dried in wooden trays. After drying, the material underwent coarse separation and fine picking. The material was separated into categories: artefacts, including stone, bone, and flint artefacts (tools, flakes, blades, cores, debris, and waste elements); bones; waterlogged wood and plant remains; and charred plant remains. All bones and tools recovered from the site were later soaked in running freshwater for a few days, to dissolve the salts.

6.5 Summary

Decades of surveys and exploration of the submerged settlements off the Carmel coast have revealed remarkably well-preserved Neolithic villages. These submerged archaeological resources require frequent monitoring in order to preserve and document the unique archaeological remains of Levantine prehistoric coastal communities, so important to world prehistory.

Research carried out to date indicates that the majority of such sites are covered most of the time, hidden under mobile sands, and therefore remain undetected. Most known sites were exposed only briefly—sometimes for a few days—every few decades, and were covered soon after their exposure. Therefore, raising public awareness of the importance of reporting the exposure of such sites is of high priority.

The 2011 field school at Atlit-Yam offered an intensive and extensive training program in excavation of a submerged prehistoric site for new and experienced researchers. The methods and techniques used are of value for investigations of any inundated archaeological site. It is expected that the international participation will have benefited underwater and prehistoric archaeology in the Mediterranean, Europe and further afield. The field school gave a unique opportunity for participation of numerous early career researchers at this underwater prehistoric village. The support of COST and SPLASHCOS was instrumental in providing basic and advanced training in excavating and studying submerged prehistoric archaeological sites.

The fieldwork was supplemented by lectures and visits to relevant archaeological sites, laboratories and a hyperbaric medical centre. This enabled the participants to broaden their understanding of the types of activities that would be essential for long-term research on submerged settlements and landscapes.

Finally, the 2011 field school was a valuable capacity-building exercise, with the deliberate aim of ensuring long-term succession planning and enhancing the continuation of submerged prehistoric archaeology. Also, it yielded new data and discoveries that benefit the ongoing research program at Atlit-Yam.

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