

ANNEX XII
ARCHAEOLOGY

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1.1 Archeological Environment

In compliance with the Environmental Impact Assessment (EIA) and Terms of Reference for the Development of the South Beach Belize Property, situated on the southern end of Ambergris Caye, Belize), the Tunich-Nah Consultants & Engineering contracted the authors of this report to undertake an archaeological survey on the property that is owned by the South Beach Belize development (See Fig. 1.1).

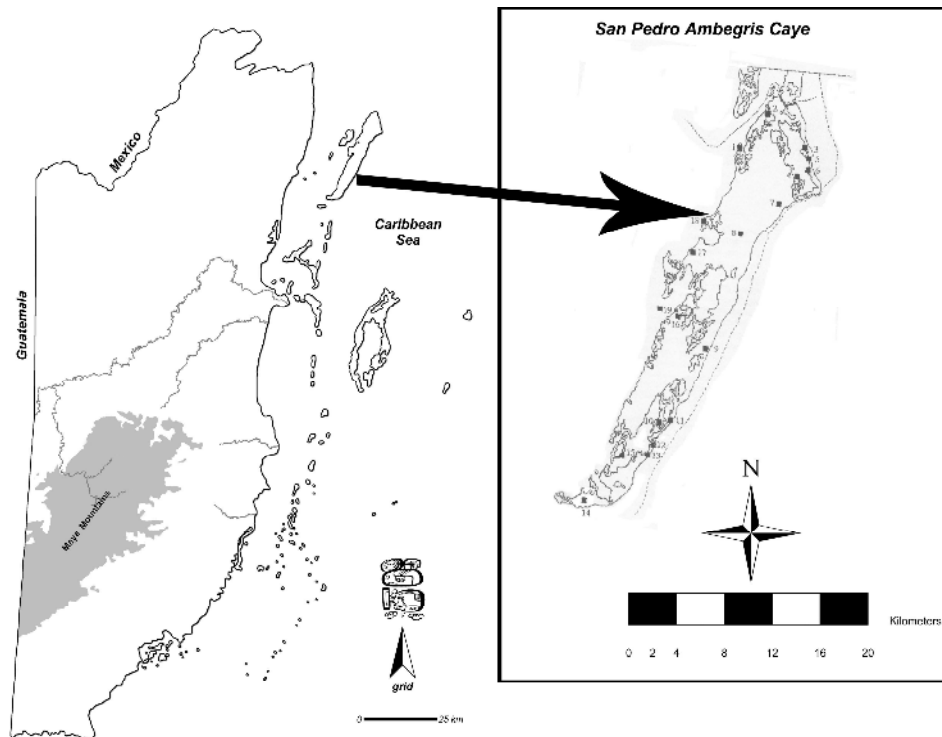


Fig. 1.1 Map showing archaeological site

The Purpose of the Archaeological Assessment is:

- 1) to identify and document cultural relics, archaeological or colonial (as defined by the National Institute of Culture and History Act, Chapter 331, Revised Edition 2000 of the Laws of Belize), that may be present,
- 2) to place them in their geographic location in the areas of study and, to make recommendation/s for their protection, and
- 3) To mitigate the best possible intervention prior to the project, and from damages resulting from civil works during the project.

This report will include the following: a) Description of the South Beach Belize Development Ltd. Property, b) An explanation of the methods employed in the survey, c) Results of the survey, d) Reviews of archaeological data for Ambergris Caye, e) Options

of mitigation for the protection of features of archaeological significance, and f) Conclusion and Recommendation. The Archaeological Assessment and Survey will be done with full awareness of, and compliance with the National Institute of Culture and History Act, Chapter 331 Revised Edition 2000 of the Laws of Belize.

1.2 Description of the Property

The island of San Pedro Ambergris is located approximately 36 miles (57.6 km) north of Belize City (Fig 1.1). The South Beach Belize development site comprises a very large block of land consisting of approximately 545.25 acres of situated on the southern end of the Ambergris Caye (See Plate 1.1). The property is bordered by the Boca Chica Canal on the southeast and the Caribbean Sea on the east and west. To the north are other properties of mainland San Pedro Ambergris. The soil of the entire area is marshy swamp wet lands and is covered mainly with stunted dwarf mangrove vegetation, except around the Marco Gonzalez Archaeological site/reserve. The archaeological reserve proper covers an approximate 13.52 acres. This area, by contrast, exhibits a somewhat different type of vegetation from its immediate surrounds. The vegetation on Marcos Gonzales proper can be classified as littoral forest comprises of white mangrove (*Lagunacularia racemosa*), gumbo limbo (*Bursera simaruba*), white poison wood ('chechem', *Cameraria belisensis*), silver palmetto (*Thrimax sp.*), cabbage palm (*Roystonea oleracea*), and a variety of vines, sedges and grasses (Mazzullo).

At the time of the site assessment access road had been cut, cleared, filled and compacted, and, in areas near the leeward coast, large parcels of land had been cleared, exposing the soft black soil (See Plates 1.2 and 1.3). Two short, small canals had been dug and the materials used as land fill; to fill the low-lying areas between them. An interesting phenomena in this area is the presence of heaps of conch shell appearing on the leeward coast of the property. These heaps of shell are obviously from different kinds of conch shells harvested from the Caribbean Sea as subsistence, while the residue (the shell) used for an important, expensive and resourceful purpose on marshland environment - landfill (See Plate 1.3). Shell fill has been used to fill road alignment to access the property by golf carts.

1.3 Literature Review

Ambergris Caye is one of the few coastal areas in Belize that have had long prehistoric occupation, from the Ancient Maya civilization to post independence. Its occupation was contemporary with Lamanai and Cerro Maya Archaeological Sites in the Orange Walk and Corozal districts respectively, located in the north of the country.

Amergris Caye is the largest of the approximate 200 cayes and atolls that dots the entire eastern coastline of Belize. It is about 25 miles (40 km) long, from the northern border with Mexico to the southern tip near the Grand Canal. It is less than 4 km (2.5 miles) at its widest point and about 1 mile (1.6 km) at the narrowest point.

This island sits about 36 miles (57.6 km) north of Belize City and only a short distance south of the Xcalac Peninsula in Yucatan, Quintana Roo, Mexico. The Belize Barrier Reef, situated about 0.5 miles (0.8 km) east of the island stretches southward, continuously, along the entire length of the country .

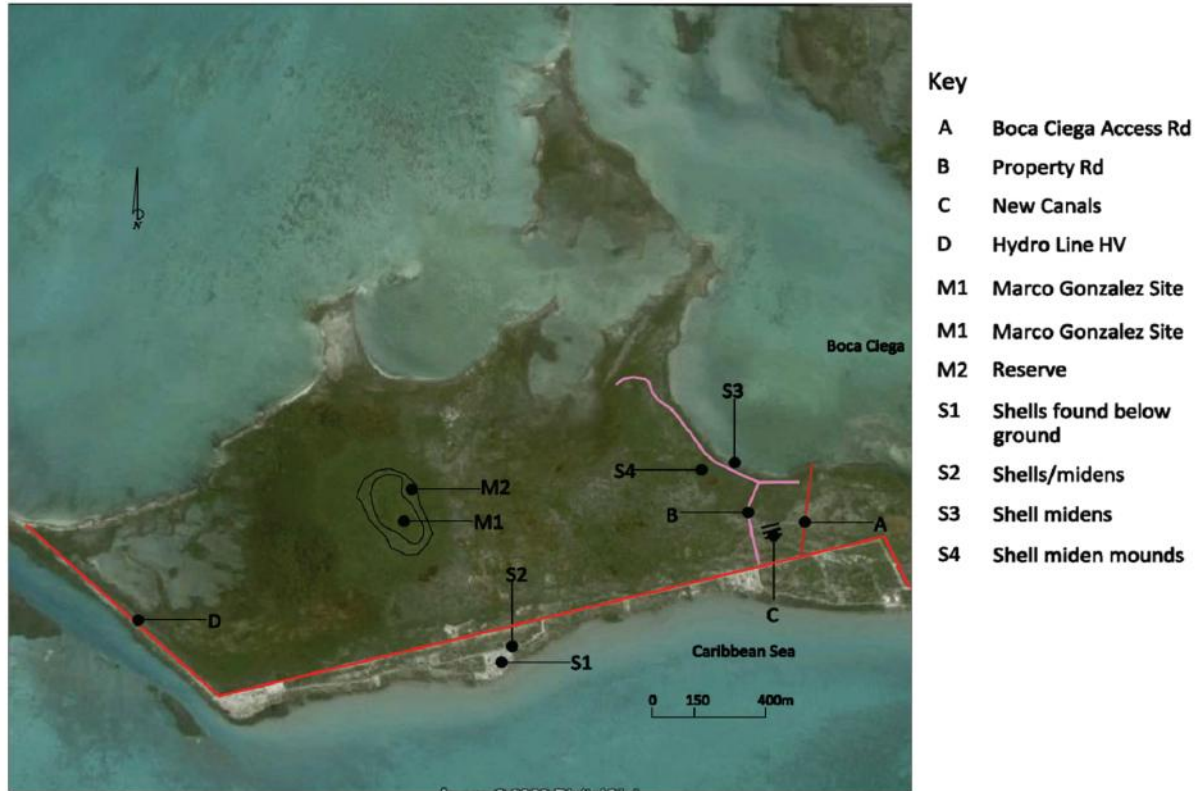


Plate 1.1: Satellite image of South Beach Belize Property, Google



Plate 1.2: Aerial view of South Beach Belize Property showing clearance and road works



Plate 1.3 Large area of conch shell used for landfill.

The reef protects the island considerably from severe tidal surges during stormy weather. The resulting calm on the leeward side of the reef provides a habitat for marine flora and the many creatures living under water and a critical environment for the formation and growth of corals. Great beaches form along the windward coast and lagoon, swamps and

mangroves dominate the leeward side. (Awe et. al) This is evident from the many building along the windward coast than the leeward side.

Archaeological evidence interpreted by Drs. Elizabeth Graham and David Pendergast (1989) indicated that Ambergris Caye was inhabited some approximately 2,100 years ago, in the Protoclassic and Early Classic Periods ca. 1 A.D. – 250 A.D. by the ancient Maya at Marco Gonzalez, named after their guide.(Mazullo) The Marco Gonzalez Archaeological site sits in the middle of South Beach Belize Development Ltd. property on the south of the island. The discovery of some earlier ceramic sherds across the island however, pushed back its occupation to about 100 B.C. (Pendergast 1989)

North American archaeologists Thomas Guderjan, James Garber and Herman Smith from scientifically investigated Ambergris Caye with the permission of the Belize government. They excavated at the northern and central Ambergris in the 1980s. Drs. Elizabeth Graham and David Pendergast excavated at Marco Gonzalez in the south in the 1990s (Awe). Archaeological evidence found at San Pedro indicated that Ambergris Caye was occupied continuously into the Late Postclassic Period, about 500 years ago.

The island was perhaps occupied either separately or simultaneously in communities such as Marco Gonzalez, on the south, and San Pedro in the middle. The Marco Gonzalez Archaeological site comprises of the remains of some 49 structures and measures 185 m x 355m) approximately 65,675 square metres (See Fig. 1.2).

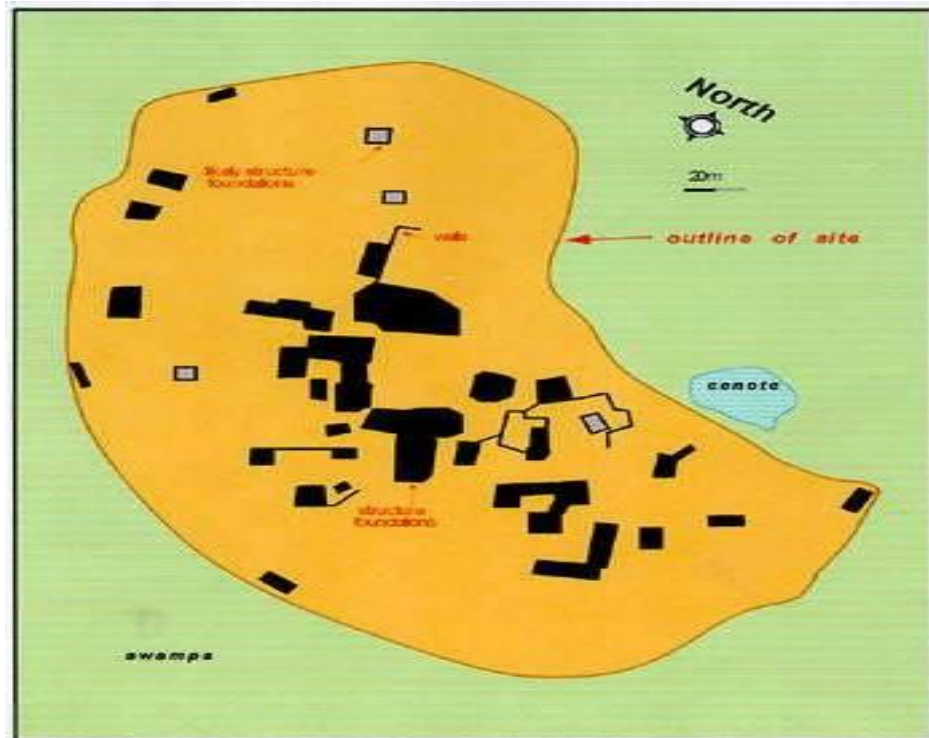


Fig. 1.2: Map of Marco Gonzalez in southern Ambergris Caye

San Pedro archaeological community that situated about 5 miles (8 km) south of Marco Gonzalez, was occupied from the Early Classic period. Its population may have increased in the Late Postclassic Period as the Mayan communities in the region collapsed. The other archaeological communities on the island included San Juan, Chac Balam, San Pablo, Boca Ciega and Santa Cruz, among others. According to archaeologists, there are about 19 named archaeological communities on Ambergris Caye (See Fig. 1.2)

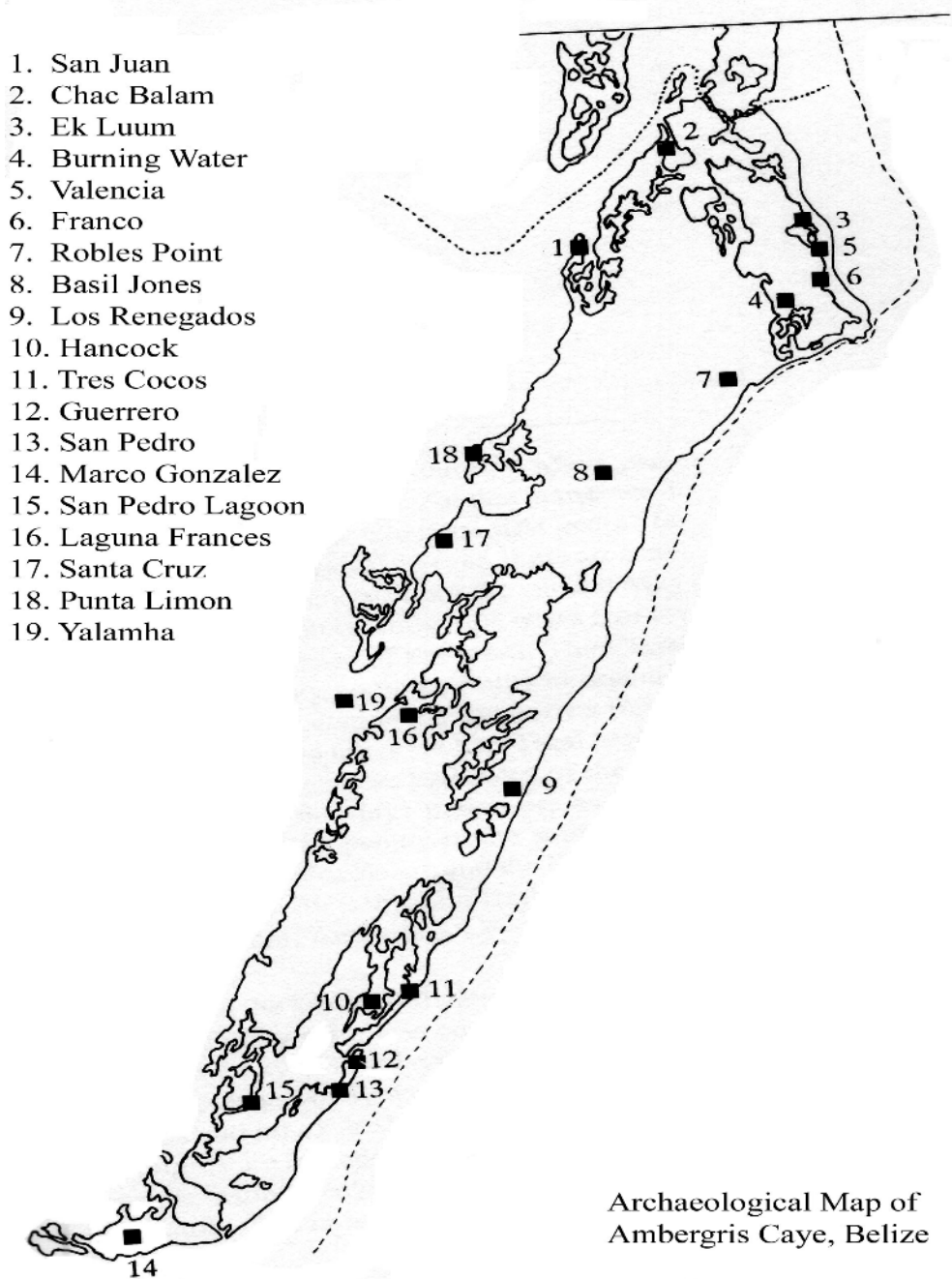


Fig. 1.3 Archaeological Map of Ambergris Caye

A new San Pedro, completely different from the ancient Mayan community, was declared a town in 1984. It is also the most populated island, with approximately 4,000 inhabitants. (Parham)

After the abandonment of the archaeological communities at Ambergris Caye ca. 1400 A.D., the resources on the island continued to be exploited by a new people who settled there. In the early sixteenth century, a few Europeans settled the island. They were followed by some British who mainly used the island as a rendezvous to intercept cargoes being shipped to other countries, assisted by the treacherous waters around the reef. In the mid nineteenth century, Mestizos fleeing the Caste War in Yucatan settled in San Pedro, Ambergris Caye. (Parham)

Ambergris Caye was impacted severely upon by changes in the environment (Mazullo) and by the possibility of over-exploitation of the natural resources. However, the island continued to provide new resources and activities to support the new inhabitants economically. The socio-economic bases were fishing, harvesting of other marine products (lobsters and conch), logwood for dye and sapodilla tree for chicle, the base for manufacturing chewing gum, coconut for 'topco' products. (Parham)

In the 1970s, tourism became an industry, the fastest growing on Ambergris Caye, and the most lucrative source of income in the entire country of Belize (Parham), catering to the needs of the visitors, ranging from simple accommodation, entertainment and recreation to a more sophisticated level. Ambergris Caye continues to provide the 'right' environment and climate for the expansion of tourism and an increase in the number of developers.

Tourism infrastructure on Ambergris Caye has grown from three modest hotels; Holiday Hotel, Paradise Hotel and the Coral Beach Hotel, in the 1970s (Parham) to mega hotels and condominiums in the 2000s. One such latest developer and project is the South Beach Belize Development Ltd. of Miami, Florida in the United States of America.

1.4 Methodology

The significance of an archaeological survey is: 1) to determine the presence cultural relics, be they pre-Columbian or Historic in the area of interest on mainland or offshore. pre-Columbian or archaeological cultural relics are those of the Ancient Maya civilization or those who preceded them. The Ancient Maya occupation dated from 1000 B.C. – A.D. 1500. The Historic period occupation is from 1500 – 1800s A.D.

The authors of this report employed several methods to ensure the integrity of the results. In most cases, preliminary research happens at the Institute of Archaeology in Belmopan referring to relevant literatures. San Pedro Town and the entire Ambergris Caye have been the subject of constant marketing on the Internet, promoting the island's rich history and tremendous tourism potential, offering exquisite, diverse and breath-taking activities and top-notch services: accommodation, recreation, entertainment, and its excellent real estate opportunities. The Internet on Google also provides excellent satellite imagery of

the island. In addition, other agencies post non-scientific information about the island on the Internet.

Transect lines for ease of survey was drawn on the map and with the use of the Global Positioning Satellite (GPS), identify the points on the ground (See Fig.1.4). The transect lines ended on the leeward coast of the property. Five transects almost equidistant of each other divide the property into fifths and identified as T1, T2, T3, T4 and T5 on the map. The Marco Gonzalez Archaeological Site situates almost in the middle of Transects 2 and Transect 3.

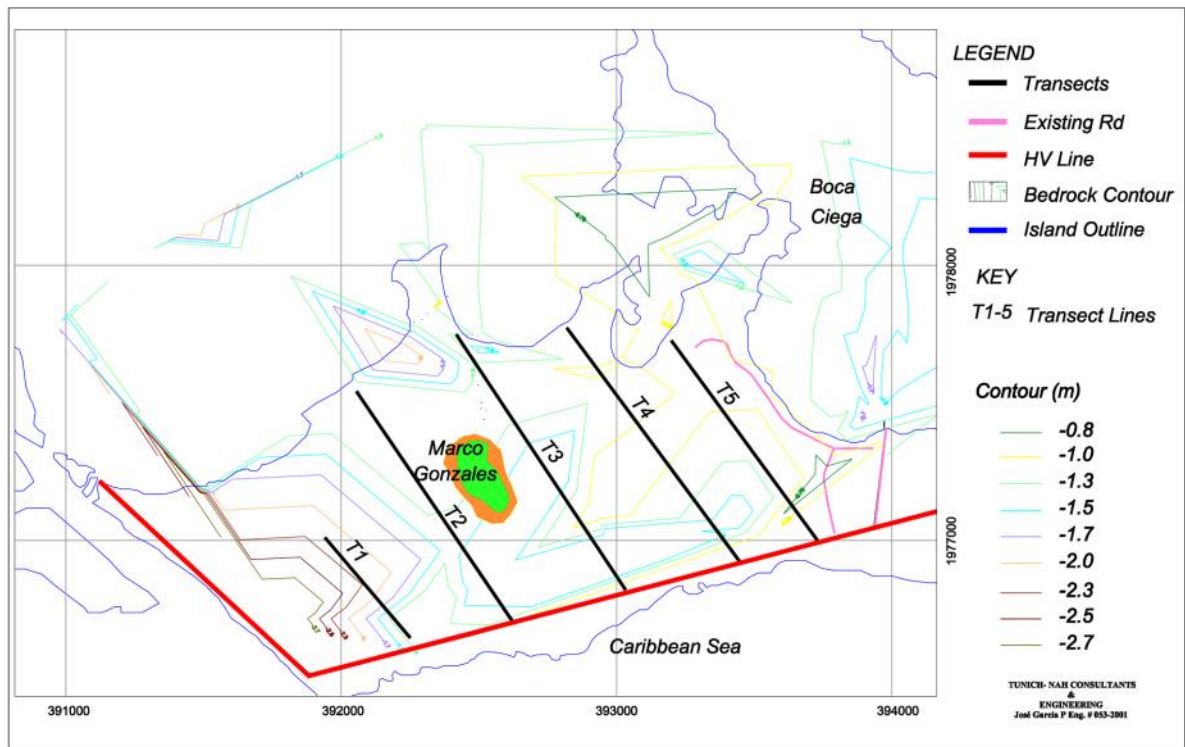


Fig. 1.4: Map of the South Beach Belize Development Property showing the Transect Lines T1 – 5.

The borehole method was also employed. Boreholes were made in several areas on the property along the five transect lines. A borehole determines the depth of the bedrock and shows changes in strata. It also indicates the presence of cultural material in a given area. The borehole method provides useful information to the archaeologist.

The researchers interviewed some local construction workers. They were asked if they had found any cultural material in trenches. The employees of the Sandman Operation who dredge for landfill from nearby lagoon were asked if they had found cultural material in the sand piles during their operation. The Sandman Operation is located some 3 miles (4.8 km) south of San Pedro Town and 0.7 miles (1.1 km) north of the South Beach Belize Development Ltd. Property. Any cultural material coming out from the

lagoon is of interest to the research team and developers because similar dredging will take place as the project gets underway.

A semblance of an aerial survey was done from a two-storey building near the property on the windward coast. The researchers looked for distinct changes in elevation in the canopy of the vegetation on the property. Certain elevation indicates possible presence of archaeological structures.

The antiquated, but reliable method of survey by trekking the property physically was also employed. Some inundated, low-lying areas were also inspected. The dry land on higher elevation was accessed in a golf cart. They were inspected thoroughly.

1.5 Result of the Survey

The research on the internet provided much background information on the development and the peopling of Ambergris Caye. Many scientific and non-scientific reports on the archaeology of Ambergris Caye were posted. Only the relevant reports were downloaded and used.

The only well-defined archaeological remains located on southern Ambergris Caye is the Marco Gonzalez Archaeological Site. Reports written by Drs. Elizabeth Graham and David Pendergast were downloaded, so was the report by Dr. S.J. Mazzullo of the Department of Geology, Wichita State University, Wichita, Kansas on the geology of Ambergris Caye and the changes in sea level consequent to glacial action.

The book written by Glenn D. Godfrey that gave a comprehensive history of the island creating appreciation for the long and continuous habitation was also used. Marco Gonzalez is well defined, extensively researched and reported on. The research on Google show the location of Marco Gonzalez Archaeological Site and the distinct vegetation surrounding it.

The boreholes along the transects produced no cultural remains. The soil that came out was wet and sterile and maintained the same black colour from associated mangrove type peat. They revealed however, that the bedrock on that property is at an average depth of 4 ft. (1.2 m).

The interview disclosed the presence many, many conch shells too numerous to count in the foundation trenches. The workmen expressed the ancient Maya and the other peoples who inhabited the island harvested conch (*Strombus gigas*) from the sea used the shells as landfill and building material. They did not find any cultural material in the trenches. Mr. Viviano Cal, one of the employees at the Sandman Dredging Operation, said he and the other colleagues, to date, have not found cultural material in the many piles of sand they have dredged.

The Sandman operation is situated about 3 miles (4.8 km) south of San Pedro and approximately 0.7 miles (1.1 km) east of the South Beach Belize property. It is

approximately 100 m (300 yd) from the coastline and 50 m (150 yd) east of the nearby lagoon. The business dredges sand from the lagoon and pumps it to the open area where it is gathered for sale. The sand is mainly used for landfill and for paving the streets in San Pedro Town.

Sandman is in operation for at least five years and is owned by Mr. Jeff Pierce. The sand from the lagoon is white and provides a perfect contrast for cultural material pumped from the lagoon.

The researchers located two partially destroyed mounds, “A” and “B” of possible archaeological interest. Mound “A” sits on the road leading to the southern end of the island and the South Beach Belize property. The main building materials were conch (*Strombus gigas*) shells. The mound was deliberately destroyed as it was in the road alignment.

It measured approximately 8 metres (24 feet) wide and might have been between 0.5m (2 feet) and 1m (3 feet) high. The second suspected mound, “B”, was also destroyed by bulldozing. It was a smaller, approximately 5m (16 ft.) wide and between 30cm (1 ft.) and 50cm (2 ft.) high. It is filled with garbage. Many of the shells on both mounds are still in situ. They were situated outside of the eastern limit of the property.



Plate 1.4 Extracted material from sand Pit.



Plate 1.5 An example of a sand dredger



Plate 1.6 Photo of destroyed suspect archaeological relics along the road to the southern tip of Ambergris Caye

1.6 Marco Gonzalez Archaeological Site

Marco Gonzalez Archaeological Site sits in the middle of the South Beach Belize property. It was first investigated, scientifically, by Drs. Graham and Pendergast in 1986 although the Site Plan was initially drawn in 1984 (Mazullo), but the local residents had long known about the site. Much has been written and reported on the site. This ancient settlement was very important to the ancient Maya coastal trade. Today, the site can be seen from air when approaching and leaving from San Pedro Town.

There is a distinct kind of vegetation around the site that resulted from thousands of years of human occupation. There are 49 archaeological structures at Marco Gonzalez. Those at the north end are arranged in plazuela groups while the others are less formal in plan. Any other structures around the periphery would have been reported or mapped.

Marco Gonzalez was clearly seen from the building due to the sharp elevation of the ground and the different vegetation surrounding it. No other elevation was noticed (See Plate 1.7).



Plate 1.7: Aerial view of Marco Gonzalez Archaeological Site

1.7 The Canals

The pile of the sandy-clay soil that was used as landfill resulting from digging the two canals were examined meticulously for the remains of cultural materials, pre-Columbian or Historic (See Plate 1.8). The inspection was made easier by the rains that compacted the material and exposed the denser objects.

Many large fragments of large ceramic vessels were exposed. They measured an average of 3.5 in. (7 cm) long, 3 in. (6.0 cm) wide and 0.5 – 1 cm thick (See Plate 1.9). Some smaller buff and orange pieces were exposed as well. A large fragment of the chest of a huge turtle was also exposed. This indicates the ancient Maya or the other peoples who followed harvested turtles. There were no visible mounds in the area.



Plate 1.8: Photo showing the canals. Courtesy TNCE



Plate 1.9: Photo showing fragments of ceramics recovered in the pile of sandy-clayey soil.

Beyond the canals, going toward the leeward coast, is a large cleared land about the size of a soccer field. It was accessed by a golf cart through a well defined and compacted but incomplete road. That area is literally filled with many fragments of conch shells of different species. (See Plate 1.11) The researchers carefully searched the area for cultural remains of archaeological nature. Only a fragment of a prismatic black obsidian blade measuring about 2.5 cm (1 in.) and the end of a suspected calcite mano were found (See Plate 1.10). Ceramic and chert fragments were not found.



Plate 1.10 Photo of Mano



Plate 1.11 Photo showing incomplete landfill of the leeward coast

1.8 Marco Gonzalez Archaeological Site : A Synopsis

The land that surrounds Marco Gonzalez Archaeological Site is very low and is close to sea level. It is a ‘mangal’ jungle swamp with red mangrove (*Rhizophora mangle*), and black mangrove (*Avicennia nitida*). The swamp deposit around it is mangrove peat that covers the sand and carbonate mud. There are two Pleistocene limestone bedrocks along

the north of the site. The land at Marco Gonzalez Archaeologica Site is higher than the surrounding areas.

The highest point is about 14 feet (3.6 m) above sea level and is credited to the thousands of years of human activities there. The other plants around the archaeological site are white mangrove (*Lagunacularia racemosa*), gumbo limbo (*Bursera simaruba*), white poison wood ('chechem', *Cameraria belisensis*), silver palmetto (*Thrimax sp.*), cabbage palm (*Roystonea oleracea*), and a variety of vines, sedges and grasses (Mazullo).

Marco Gonzalez was first occupied according to Graham and Pendergast (1989) around 2100 years ago, in the Late Preclassic Period. The sea level at that time was about 0.6 m. (2 ft) lower than present. (Mazullo 1990) As the Pleistocene glaciers melted over the years, the sea level rose, causing the settlement to be abandoned abruptly. There is evidence to suggest that Marco Gonzalez was occupied continuously to about 500 years ago, during the Late Postclassic period, when the site was abandoned.

The ancient Maya subsisted on marine products as shown by the numerous conch shells near the southern tip of Ambergris Caye. They also processed salt from the Caribbean Sea. However, the ceramic, jades, granite artifacts, obsidian and chert they used were traded from elsewhere because there were no sources of those materials on the island. Marco Gonzalez, because of its location, must have played a very important role in the Maya coastal trade and benefited tremendously from it as well.

1.9 Conclusion

The result of the survey of the South Beach Belize Development Ltd. property on southern Ambergris Caye does not present a serious concern and challenge for the protection of cultural remains, archaeological or historic. There is not much evidence to indicate the presence of more archaeological structures on southern Ambergris Caye besides the structures in the Marco Gonzalez Archaeological Site. The two suspected archaeological mounds, "A" and "B", reported on earlier in the report, are situated outside of the property. The absence of archaeological mounds in the area however, does not rule out occupation and activities of the Maya or people after them.

Salt was processed at Marco Gonzalez Archaeological Site, but the exact locations have not been identified. The workshops could be in the low-lying areas that are now inundated by the swamps consequent to the rise in the sea level (Mazullo).

The area where the two canals were dug yielded fragments of large black ceramic vessels in spite of the absence of mounds or suspicious elevations. A large section of the southern part of Ambergris Caye was filled with many conch shells. On the other hand, conch shells were supporting building material for the archaeological structure. The abundance of conch shell in a given area however, does not make that area an archaeological feature. A conch shell is a natural resource, but its usage can help determine the archaeological value. The mound built from the conch shells is the

archaeological feature, but the conch shell it self is not an archaeological object unless it is worked, crafted, carved by human.

Any kind of excavation on the property, however, must be done carefully in anticipation of artifacts that may be exposed and must be protected from further damage. Mazzullo (1993) said that the presence of artifacts below the present day surface, particularly beneath the mangal swamps, indicates that the site was once larger than is presently exposed.

1.10 Recommendation

Although no other usual indicators of ancient occupation were found on the South Beach Belize Development Ltd. Property, it does not rule out human activities there. The development of this area therefore, should be sensitive to the cultural remains that might be exposed.

It is strongly recommended that an individual with knowledge of archaeology be attached to the crew to monitor the excavation operations on the property. The exposed cultural remains must be documented in photographs.

If the developers/contractors find cultural remains of archaeological significance, they are required to contact the Institute of Archaeology for a proper excavation. There might be no need to suspend the operation but to modify their activities.

If the Institute of Archaeology determines the find as significant, the developers/contractors will be required to arrange through the Institute of Archaeology for a scientific excavation to be done by a qualified, professional archaeologist who has reasonable excavation experience in Belize. Archaeologists familiar with the archaeology of Marco Gonzalez would be have an advantage. The excavation must be in compliance with the National Institute of Culture and History Act, Chapter 331 of the Laws of Belize and the Conditions for Archaeological Research in Belize.

Marco Gonzalez Archaeological Site

The following is a list of recommendations for the Marco Gonzalez Archaeological Site.

1. To provide a reasonable buffer to screen the archaeological site from the rest of the project.
2. To collaborate with the Institute of Archaeology to declare the Marco Gonzalez Archaeological Site a Reserve through a Statutory Instrument affording it the protection it deserves.
3. To develop the reserve into a *bona fide* tourism destination at par or to surpass the declared archaeological reserves around the country.

4. To build a museum or a visitors centre where pertinent information about the reserve and the island can be displayed.
5. To assist the Institute of Archaeology to repatriate artifacts found at Marco Gonzalez and the other archaeological sites on the island from other countries for display in the museum/visitors centre.
6. To provide adequate security to the archaeological reserve and the other amenities around it.