From Golden Rock to Historic Gem: a historical archaeological analysis of the maritime cultural landscape of St. Eustatius, Dutch Caribbean

Stelten, R.J.G.

4

Economic Components

Economic components contain features that made Caribbean colonies desirable to the mother countries. Making a quick fortune was the main goal for most free people on St. Eustatius, and even enslaved people as will be shown in this chapter. While there is no denying that Statia's economy was global, the people living there had to make money in local ways. Very little academic discussion has gone into the topic of how this global economy was practiced and lived by the people on St. Eustatius, and how it shaped the island itself. A multidisciplinary maritime cultural landscape approach is well suited to answer these questions. To increase the wealth of the colony and the individuals living in it, a complex network of transportation routes and commercial buildings was created that facilitated the import and export of goods. When trade increased to levels beyond everyone's imagination, practical problems arose that needed to be dealt with in order to sustain and improve the island's economic success. As the numbers of ships calling at St. Eustatius grew exponentially, the size of the roadstead and the number of warehouses increased, causing the transportation of goods and people to become more complex. In addition, to ensure the insular population could survive and was able to attract outsiders, various ways of acquiring food and water were employed. Economic components are divided into three distinct but highly interconnected aspects: the commercial component, the transport and communication component, and the resource component. Without a well-developed transport and communication component and resource component, there would have been no commerce. On the other hand, the fact that the resource component developed the way it did was largely a result of the increasing commercial activities on the island. By combining documentary data with archaeological evidence gathered by the author over the past four years, several key elements of economic components that proved instrumental to the island's success story will be examined.

4.1 The commercial component

Historically, St. Eustatius is best known for its role in the Caribbean and Atlantic World trade networks during the eighteenth century. It was during this time that the island attracted people from all over the world to engage in the lively commerce at this free port. These activities have left behind a wealth of archaeological and documentary evidence which is used to reconstruct the Statian commercial component. While mainly focused on the historic port district of Lower Town, the commercial component also includes the plantations in the countryside.

4.1.1 Lower Town

During the second half of the eighteenth century, St. Eustatius became known as the Golden Rock of the Caribbean, with Lower Town as its beating heart. This one-and-a-half-kilometer-long stretch of land on the island's leeward coast became one of the most important and busiest trading centers in the eighteenth-century Atlantic World, where millions of products were bought and sold each year at auctions held in the many warehouses at Oranje and Gallows Bay's shores. After the establishment of St. Eustatius as a free port in 1756, Lower Town quickly expanded its role as the focal point for the island's international trade. The origins of Lower Town, however, can be traced back to the preceding century. In historical records mention is made of a warehouse to store tobacco as early as 1639, and by 1658, there were several well-stocked warehouses on the island (Attema 1976:18). In his work *Histoire naturelle et morale des îles Antilles de l'Amérique*, published in 1658, French Protestant pastor Charles de Rochefort wrote that on the island "there are also storehouses so well furnish'd with all things requisite to life." Although no location of the warehouses can be derived from the documents, it is likely that these were located in Lower Town as their proximity to the sea facilitated relatively quick and easy loading and offloading of goods.

While the various military installations on the island will be discussed in more detail in Chapter 6, it is important to mention Fort Amsterdam's role in the economic development of Lower Town. Built in 1687 at Oranje Bay's northern end, Fort Amsterdam, or the Waterfort as it is sometimes referred to, was initially used as a work of defense. Due to several changes of flag on the island, it was neglected and quickly fell into disrepair, until Commander Johan Lindesay turned it into a slave depot in 1724. St. Eustatius provided the French, Spanish and English West Indian islands with enslaved people as early as 1675. By the 1720s, the Dutch shipped 2,000 to 3,000 enslaved people per year to Statia, almost all in transit (Postma 1990:225,320-348). Slave ships brought their cargo to Statia to be auctioned to buyers from surrounding islands. Fort Amsterdam became the location of slave auctions and served to store enslaved people. When the fort acquired its new function in 1724, its main building was only one story tall. Two years later it was expanded to two stories to accommodate additional enslaved people. A total of 450 enslaved Africans could be housed in a building no larger than 17 by 6.5 meters (Attema 1976:29). The Waterfort played an important role in the economic development of Lower Town, where merchants, planters, and sailors all gathered to buy and sell hundreds, sometimes even thousands of enslaved people per year.

People from all over the Atlantic World came to St. Eustatius to engage in trading activities. International weights standards were not yet established in the seventeenth and eighteenth centuries. As people from different countries used different weight measurements, a weighing house was needed where goods were weighed according to the same standards. It is not known when the first weighing house was built on the island, but it must have been before 1738. In this year, a new weighing house was scheduled to be built, but it is unclear if this plan ever came to fruition. Commander Johan Heyliger commented in 1743 that the weighing house's woodwork was rotten and the walls were crumbling (Attema 1976:36). Some repairs were made to the building soon after. In 1771, the WIC was informed that a new weighing house was

Figure 4.1 View of St. Eustatius from the northwest as it appeared in 1774. The large building in Upper Town is the residence of Jan de Windt. To the left of the church tower is the town hall. The first building (with the blue roof) at the front of Lower Town is the weighing-house. The building behind the weighing-house is the headquarters of the Dutch West India Company. The topographical details of this image and Figure 4.2 clearly indicate that their maker was on the island and spent an extended period of time at these vantage points. They are two of the most accurate historic representations of the island known to exist. Watercolor by Emants, after a drawing by A. Nelson. Source: SECAR collection.

Figure 4.2 View of St. Eustatius from the southeast as it appeared in 1774. The house left of the church tower, with the flag, is the Governor's house. Fort Oranje is located between this house and the church tower. Saba can be seen in the background on the left. Most ships are flying the Dutch tricolour, but there are also English flags (the St. George's Cross) to be seen on the ships. Watercolor by Emants, after a drawing by A. Nelson. Source: SECAR Collection.

needed because of the small size, unfortunate location, and poor state of the present one. Permission to construct a new weighing house on the sea side of the road was soon received (Attema 1976:36). This weighing house, made of imported yellow Dutch bricks and still standing after 240 years, has recently been restored. It is now in a good state of preservation and houses a dive center. The wall on the side of the

road contains a basalt stone with a very rare GWC inscription of the Dutch West India Company.[11]

Lower Town started to become a trade locus towards the end of the first half of the eighteenth century. Various mid-eighteenth-century maps and drawings show several structures along the shores of Oranje and Gallows Bay. It was not until the second half of the eighteenth century, however, that Lower Town started to grow significantly. When import duties were abolished and St. Eustatius became a free port in 1756, an increase in trade and building activities resulted in the construction of a one-and-a-half-kilometer-long strip of hundreds of buildings including two-story warehouses, merchant homes, shops, trade offices, brothels, and taverns along the bay (Hartog 1976:38). These were made of red and yellow bricks imported from Europe, Bermuda limestone, and local volcanic rock. According to Marten Douwes Teenstra, an early nineteenth-century visitor to the island, the buildings in Lower Town were spacious and located close to each other. They were laid out in a double row but placed very irregularly, thereby forming narrow alleys between them (Teenstra 1837:326).

By the 1770s, Lower Town was completely built up and rent on the warehouses totaled an enormous 1.2 million pounds per year. An account from Scottish Lady Janet Schaw, dating to 1775, shows Lower Town to have been a continuous market displaying goods of different types and qualities sold by people from all over the world:

> "Never did I meet with such variety; here was a merchant vending his goods in Dutch, another in French, a third in Spanish, etc. etc. They all wear the habit of their country, and the diversity is really amusing. […] From one end of the town of Eustatia to the other is a continuous market, where goods of the most different uses and qualities are displayed before the shop doors. Here hang rich embroideries, painted silks, flowered Muslins, with all the Manufactures of the Indies. Just by hang Sailor's Jackets, trousers, shoes, hats, etc. The next stall contains the most exquisite silver plate, the most beautiful indeed I ever saw, and close by these iron pots, kettles and shovels. Perhaps the next presents you with French and English Millinary wares. But it were endless to enumerate the variety of merchandise in such a place, for in every store you find every thing, be their qualities ever so opposite." (Schaw 1921:137)

Schaw called the island "a place of vast traffick from every quarter of the globe." After 1760, the number of vessels arriving on Statia ranged between 1,800 and 2,700, reaching a maximum of 3,551 ships in 1779 (Gilmore 2013:44). Ships came from Europe, Africa, North and South America, and other Caribbean islands. Eyewitness accounts indicate that there were frequently well over 100 ships at anchor on Statia's roadstead (De Jong 1807:96; Enthoven 2012:241). Approximately 20,000 merchants, enslaved laborers, sailors and plantation owners were crowded on this small island in its heyday (Gilmore 2004:54).[12] In the 1770s, imports exceeded the capacity of the island's warehouses and sugar and cotton, destined for Europe, were piled up high in

11 GWC is the acronym for *Geoctroyeerde West-Indische Compagnie*, or Chartered West India Company.

12 A large proportion of these were visitors and temporary residents. The island's population reached its peak in 1790, when there were 8,476 permanent residents (Gilmore 2004:54).

Figure 4.3 Polychrome Dutch delftware plate dating to 1730-1740. Eight of these plates, all with the same decoration, were found on top of each other in a ditch on the southwestern side of the slave quarters at Schotsenhoek plantation. The photo shows different plate fragments overlaid. Photo by the author.

the open air. This was the time at which St. Eustatius reached its greatest prosperity and earned its nickname the 'Golden Rock.'

Luxury goods sold on the island as described by Schaw were not only consumed by members of the upper classes. Due to the favorable economic climate, enslaved had access to these goods as well. While the documentary record contains hints of the social and economic positions of the enslaved, the archaeological record contains numerous examples of how the wealth that slaves amassed was experienced and exercised in specific situations. In an excavation of a slave quarters at Schotsenhoek plantation, described in more detail in Chapter 5, the author found many luxury items such as shoe buckles, folding knives, and wine glasses (Stelten 2015b). The ceramic assemblage at this settlement indicated that slaves were mainly using expensive refined earthenwares and only very few cheap Afro-Caribbean wares. With the exception of porcelain, which was found in low quantities in the excavation, enslaved laborers were using more or less the same types of ceramics as their masters. They even used entire sets of high-quality earthenwares (Figure 4.3). This is quite remarkable. In his study on Brazilian sugar plantations, Symanski noted that while enslaved people received refined earthenwares from their masters, they received only the cheapest – outdated and undecorated – pieces (Symanski 2012:132). Singleton's observations at the slave quarters at El Padre coffee plantation on Cuba are similar, where less expensive undecorated or minimally deco-

rated wares occur in higher quantities than the more expensive, decorated wares (Singleton 2001:109).

Enslaved laborers on St. Eustatius were in this favorable position because they were often granted a large amount of freedom to conduct business on their own, and were therefore not entirely dependent on their masters to provide them with everyday objects. For example, because enslaved laborers were charging increasingly high fees for transporting people and goods to and from ships in canoes, a law was issued in 1803 that set a maximum amount that could be charged for these services (Schiltkamp & Smidt 1979:408). Another example is the story of the famous Olaudah Equiano, an enslaved laborer who made his first money by trading between Montserrat and St. Eustatius while working on his master's ship.[13] Upon his first arrival on St. Eustatius, he owned a half bit, with which he bought a glass tumbler. When he got back to Montserrat, he sold it for one bit. He made several more voyages between Statia and Montserrat, each time buying tumblers on Statia and selling them with a profit on Montserrat (Equiano 1794:155). After a few years of sailing and trading in different places, he made so much profit that he was able to buy his own freedom.

It should be noted that not everyone wanting to make a fortune on St. Eustatius succeeded. For example, American Captain John Stevens sailed to St. Eustatius in 1785, where he obtained a warehouse and became co-owner of the vessel *Favourite*. The *Favourite* was used for inter-island trading, mostly between St. Eustatius and St. Kitts. Business seemed to be going well, until he was placed under arrest in late 1786 for debts he contracted during his stay on the island. He passed away in a Statian prison in March of the next year (Skemp 2009:153).

Zimmerman l'Ainé, a temporary resident of St. Eustatius, wrote a letter to a friend of his in the Netherlands in 1792 which provides a vivid description of life on the island (NA 3.01.26 – 161). Among other things that will be discussed later, Zimmerman remarked on the languages used on the island, and noted that everyone in all classes of society spoke English. Despite the fact that people from all around the world were conducting business on the island, English was the main language that nearly everyone used. A small group of elites continued to use the Dutch language, and Dutch was also used in government papers. As contacts with British colonies in the Caribbean and North America intensified, the Dutch language moved to the background. In the early nineteenth century, there were only a few Statian residents who could express themselves properly in Dutch, the Governor not included (Hartog 1976:29).

Gallows Bay, at Lower Town's southern end was, as the name suggests, the place where criminals were hanged. It was likely also the location of a shipbuilding yard. That there was a shipyard on Statia capable of repairing and outfitting vessels of moderate size cannot be doubted, for the outfitting of privateers on the island was one of the principal charges made by the British in their note to the States General in connection with the salute to the *Andrew Doria* (De Graaff 1779:17).[14] This was probably done in Gallows Bay, as here the Lower Town road comes to an end and this area used to house a sloping beach ideal for hauling up ships. In 1961, an American man named Phillip

13 Equiano's autobiography, published in 1789, was highly influential in gaining passage of the Slave Trade Act of 1807, which abolished the African slave trade.

14 The salute to the *Andrew Doria* will be described in more detail in Paragraph 7.4.4.

Melville visited Statia and, in a letter to one of the island's residents five years later, he described what he thought to be a dry dock that was part of a small shipyard (Letter from Phillips Melville to I. Rosema, dated 26 September 1966). Located on the water's edge in Gallows Bay, the U-shaped structure was 6.1 meters across and could be used for small to medium-sized vessels. No remains of this structure are still visible today.

4.1.1.1 Archaeological research in Lower Town

When archaeologists from the College of William and Mary first visited St. Eustatius in 1979, they were amazed by the richness and density of the island's archaeological remains. They conducted many excavations and surveys during the following two decades, including the first archaeological research in Lower Town, one of the richest archaeological areas on the island (Barka 1985). The researchers quickly realized that the area and its archaeological remains had been affected tremendously over the years by three natural processes. The first is the erosion of the cliffs below which the town was built. Heavy rainfall during hurricane season saturates the cliff, which frequently causes parts to slide down and bury the remaining ruins. Close to the cliffs, nearly all ruins are buried and overall these are in a very good state of preservation. On the cliff side of the road, archaeological remains can be buried by a layer of eroded material up to six meters thick. According to one traveler visiting the island in 1788, the cliff was so undercut in several places, that it was hanging over the houses and waiting to fall down on them (Dieterich 1798:270). The second natural process is destruction caused by strong swells and winds during hurricane season. Swells crash into the shoreline and over time aid in the disintegration of historical ruins. On the sea side of Lower Town, many ruins are exposed. Damage to these is visible after nearly every strong swell. Flora and fauna form the last natural process that destroys Lower Town's ruins. Trees, vines, and other plants growing into historic buildings break their walls apart. In some cases, the roots of large silk cotton trees (*Ceiba pentandra*) are pushing entire walls out of place. Roaming cattle and goats climb the battered structures and thereby increase their rate of decline.

Archaeological research in Lower Town over the past 34 years has provided new insights into the nature of past activities carried out at this important stretch of land. Archaeologists from the College of William and Mary carried out the first excavations in Lower Town between 1981 and 1984 (Barka 1985). A plan drawing of the entire area was made and each site was assigned a number. In addition, several test units were excavated in order to gain a better understanding of the area's stratigraphy, the state of preservation of various structures and deposits, and the functions of particular structures. It was found that stratigraphy was very complex throughout the area. The majority of artifacts found in Lower Town have eroded from deposits in Upper Town, and date predominantly to the late eighteenth and early nineteenth centuries. Many structural features were found in test units on the cliff side immediately north of the Bay Path which connects Upper and Lower Town, including stone walls and various types of pavements (Barka 1985:31). These were in a much better state of preservation than the seaside ruins. A test unit on a sea side structure, however, yielded good evidence of intact stratigraphy and a yellow brick floor. Below the floor, various early eighteenth-century artifacts were found, indicating that in at least some instances the destruction of archaeological deposits by wave action is not as extensive as might be ex-

Figure 4.4 Locations of archaeological sites mentioned in the text. The red line marks the location of the Eutel trench excavated in 2011; 1. Possible slaughterhouse; 2. Unidentified storage or production vat; 3. Ceramic production site excavated in 2006; 4. Warehouse excavated in 2008; 5. Almost completely intact warehouse excavated in 2013; 6. Oven or rum distillery excavated in May 2013; 7. Oven or rum distillery excavated in March 2013.

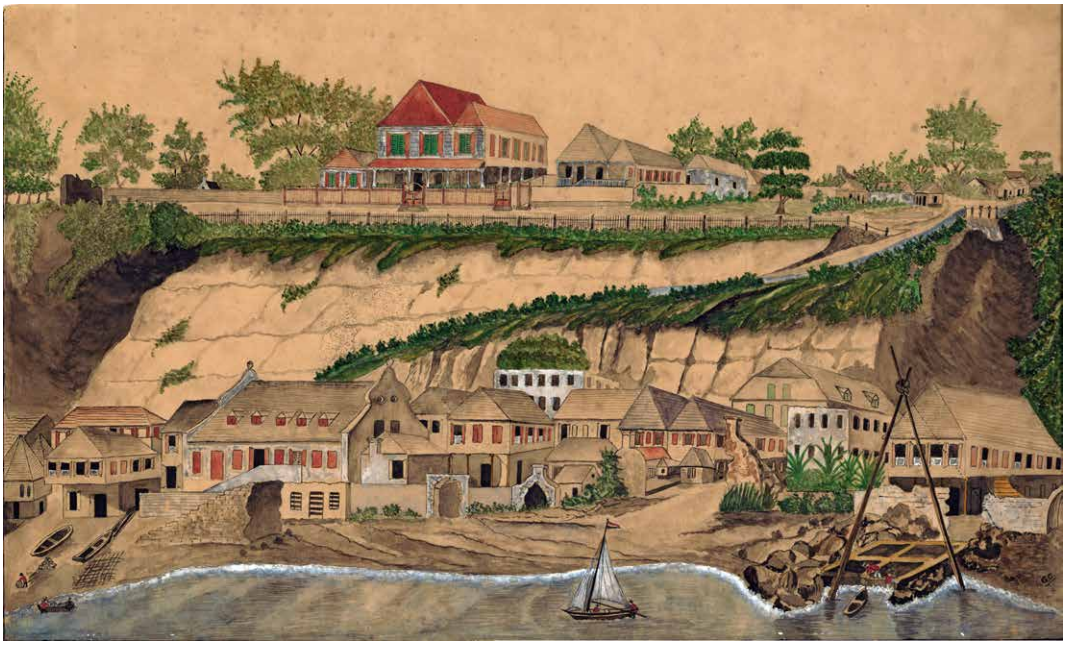


Figure 4.5 Watercolor of Lower Town made by Samuel Fahlberg in 1829 from a boat about 500 meters from shore. The large building with the Dutch gables on the bottom left was investigated in 2008. To the left of this building, behind the canoes, is the weighing-house. Source: Rotterdam Maritime Museum, inv. nr. P2192.

pected. Soil layers above the floor, however, indicated that the upper part of the site was disturbed by natural processes. This was further evidenced by a mixture of eighteenth-, nineteenth-, and twentieth-century artifacts found in the deposits (Barka 1985:37).

From several excavations carried out by the author over the past five years, it has become clear that a wider range of activities were carried out in Lower Town than previously thought. Archaeological research has uncovered evidence of several activities not directly associated with the trade that was such a prominent characteristic of Lower Town in the eighteenth century. In 2011, the island's telecommunications company Eutel excavated a 450-meter-long trench along the northern part of the Lower Town road, from the Bay Path to Smoke Alley where the road turns uphill towards Upper Town. Even though the trench was less than one meter wide, a total of 37 structural features were recorded during this campaign, including many walls, foundations, floors, and steps. Many of these were undoubtedly part of the warehouses that dotted the island's leeward coastline in the late eighteenth century, but due to the limited area that was excavated, it was not possible to link any features to specific buildings known from historical sources. The excavation uncovered features made of a large variety of building materials, similar to the exposed ruins found on the other side of the Lower Town road (Stelten 2015a).

Of particular interest was an area in the northernmost part of the trench where several large basalt steps were linked to a drainage system consisting of at least two plastered drains running perpendicular to each other. Associated with these features was a large concentration of cow bones recovered from an undisturbed archaeological layer. These finds combined may indicate the presence of a slaughterhouse at this lo-

cation, whereby the drains were used to channel the slaughtered animals' blood to the sea (Stelten 2015a:241). The location of this feature in Lower Town suggests that the meat processed here was used to supply ships at anchor. At the southernmost part of the excavation, immediately north of the Bay Path, a feature fairly similar to a cistern was found. It is not, however, interpreted as one. Despite its plastered walls on the inside, the structure's square shape and size do not correspond with other cisterns in Lower Town. The structure lacks any signs of a vaulted roof similar to those found on cisterns. Furthermore, an expansion of the trench around this feature uncovered an intact yellow brick floor, indicating that people walked around the structure, thus pointing to industrial use. The structure is therefore interpreted as a vat that was used in the production and/or storage of an as yet undetermined liquid (Stelten 2015a:241).

In 1907, Frederick A. Fenger sailed from Grenada to St. Thomas in a 5.2 meter long canoe, stopping on many islands along the way. He wrote a book about his adventure, *Alone in the Caribbean*, in which he describes the visit he paid to Statia during his trip. Fenger remarks that he saw an indigo tank at Gallows Bay on a walk through Lower Town (Fenger 1917:306). The location of this tank is unknown; it is likely buried underneath the eroded material from the cliffs. It may be that more of these tanks were present in the area, and that the tank in question was used to store indigo.

In March 2013, over 150 meters of eroded material from the cliff was excavated at Lower Town's northern end for the construction of a new parking area. The two-day excavation was monitored by the author, who recorded an historic cistern, two historic walls with associated yellow brick floor, a single historic wall, and an oven-like structure that was used as an oven or possibly as a rum distillery (Stelten 2015a:241). The latter was found in a vertical cliff face, making it impossible to excavate the structure completely without compromising the integrity of the cliff. It is made of cut basalt stones and some yellow bricks. The front part is in a very good state of preservation. The structure is 247 centimeters wide, with a 43-centimeter-wide and 83-centimeter-deep stokehole. If this structure was indeed a rum distillery, the molasses vat on top was destroyed as far as the structure could be uncovered. An approximately 8-centimeter-thick intact archaeological layer consisting of ash and charcoal, undoubtedly from the stokehole, was found in front of the distillery. Underneath this layer, a compact, natural layer marked the original walking surface. Artifacts found in the eroded material covering the structure included many late eighteenth- and early nineteenth-century case gin and wine bottles and several different types of ceramics that had eroded from the top of the cliff.

After a heavy rain storm, another oven or rum distillery was found in May 2013 by the author in Lower Town's southern part (Stelten 2015a:242). Protruding through the cliff face behind the diesel generators that power the island, it posed the same excavation problems as the structure described above. The front part of the structure is 197 centimeters wide, with a 41-centimeter-wide and 52-centimeter-deep stokehole. It is made of cut basalt stones and some yellow bricks. The lower part of this structure was partly destroyed, but part of the possible molasses vat on top is very well preserved. The vat is made of yellow bricks and contains a bottom made of red tiles. As the area in front of the distillery has been bulldozed frequently to keep the diesel generator buildings clear of eroded materials from the cliffs, no intact archaeological layers were present in front of the structure. No artifacts were found during excavation and cleaning.

Several warehouses have been investigated in recent years as well. In 2008, SECAR conducted an excavation in the warehouse next to the weighing house, which is now restored and houses a small gift shop (Labiau 2008). Figure 4.5 depicts the building on the lower left side, recognizable by its Dutch gables. It was built in one phase in

Figure 4.6 The oven or rum distillery found in May 2013. Scale: 1 meter. Photo by the author.

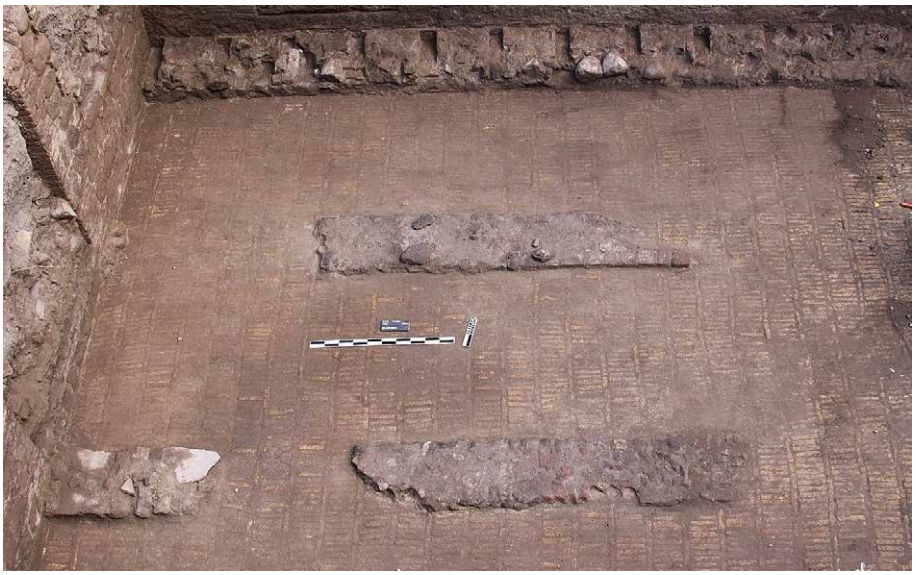


Figure 4.7 The basalt stone foundation piers on top of the nearly intact yellow brick floor from a completely excavated warehouse in 2013. The top of the image shows the slots for the floor joists. Scale: 1 meter. Photo by Pieter Soffers.

the 1730s, as evidenced by the English bond masonry present in the entire building. It was most likely constructed on top of the remains of a previous structure of which parts of a yellow brick floor survive. Although its exact function was not discovered, the research showed that the building was remodeled frequently throughout its existence: new floors were put in, interior walls were demolished, a firepit was made inside the building in the late eighteenth century, and in the latter half of the nineteenth century the Dutch gables were replaced by a new roof (Labiau 2008:48). Frequent changes of power, ownership, and economic climate, combined with a high-energy environment whereby structures were constantly affected by the sea, wind, and the ever-eroding cliffs, is reflected in the changes this building underwent throughout the years, indicating that internal and external, physical and non-physical developments all impacted the working and living spaces of the people in Lower Town and eventually their material reflection in the archaeological record.

Further evidence of the remodeling of a warehouse in Lower Town was found in 2013, when the author excavated several test trenches prior to the proposed construction of a hotel (Soffers et al. 2013). In one of the test trenches, a nearly intact structure was discovered and excavated completely. Located just north of Blue Bead restaurant, the two-story structure measures approximately 15 meters long, 6 meters wide, and 6 meters high. The structure is oriented roughly east-west, and is composed of thick walls made of cut basalt stones, doorways lined with red and yellow bricks, and an almost completely intact yellow brick floor. Much of the plaster, particularly on the walls of the first floor, is still present. The floor was completely covered by an approximately 25-centimeter-thick layer of clay, most likely the result of a flooding event which occurred during a tropical storm or hurricane. In a later construction phase, four low foundation piers made of volcanic rock were erected on top of the yellow brick floor at the entrance of the building on its western side. These supported a wooden floor as evidenced by the presence of several slots in the outer two foundation piers that used to hold the floor joists. Frequent flooding events caused the owner of the building to construct an elevated wooden platform over the yellow brick floor to keep goods that were stored inside dry.

Another warehouse, in the center of Lower Town close to shore, was excavated by SECAR in 2006 prior to proposed development (Miller 2008). The entire warehouse was excavated down to its floor piers at 50 centimeters below the present ground surface. Originally, the warehouse contained a raised wooden floor. Ceramics found in the excavation consisted predominantly of late eighteenth-century creamware and pearlware, corresponding to Lower Town's apogee. In the structure's southwestern corner, a 1 x 2 meter unit was excavated to subsoil. In this unit, a midden was discovered which contained over 4,000 ceramic sherds, of which nearly 3,500 were unglazed coarse red earthenwares. The vast majority of these belonged to sugar molds or molasses drip jars used in the sugar production process. Additionally, the midden contained over 200 pieces of slag, indicating that firing at high temperatures took place at the site. This was corroborated by contemporaneous ash layers in a pit found in an excavation unit outside of the warehouse. The presence of white salt-glazed ceramics, combined with the absence of creamware or later ceramics in the midden and the ash layers suggest that the midden was in use from the 1720s to no later than 1762. The midden was most likely buried to help solidify the foundation of the warehouse on top, which, as

the ceramic assemblage shows, post-dates the midden (Miller 2008:16). On the basis of this evidence, the excavation most likely unearthed the remains of a ceramic production site. The ash pit was part of a kiln or at least associated with one.

The southernmost structure of Lower Town, in Gallows Bay, is a building called Crook's Castle. In late eighteenth-century drawings, the building is depicted with one, two and three turrets, giving it the appearance of a work of defense. It is located at the place where criminals where hanged, hence its name. Archaeologists from the College of William and Mary carried out a small test excavation at the site in 1981. Unglazed red earthenwares were encountered in notably high quantity (Barka 1985:45). These were most likely similar to those found in the 2006 excavation mentioned above, as Crook's Castle is indicated as a sugar refinery on the cover engraving dating to 1780. This shows that not just ceramic manufacture for the sugar industry, but also the processing of sugar was carried out in eighteenth-century Lower Town, providing a direct commercial link to the plantations in the countryside.

4.1.2 Plantations

When the Dutch settled St. Eustatius in 1636, they set up plantations producing tobacco, sugar, cotton, and indigo, which was exported to European markets.[15] After only a few decades, most of the island was under cultivation, and sugar came to dominate local agricultural production resulting from a growing demand in Europe. Various eighteenth-century maps show that nearly the entire island – with the exception of the town and the steepest parts – was under cultivation, with dozens of plantations dotting the Statian landscape (NA 4.MIKO 3.A.2.5.1. – 339; NA 4.AANW – 95). These, however, never became such lucrative ventures as their counterparts in other colonies such as Barbados and Jamaica. The relatively small size and low elevation of the island inhibited the condensation of rain clouds on the Quill. This reduced the quantity of rainfall, restricting the quality and quantity of tobacco, sugar cane and other agricultural products that were produced locally (Gilmore 2004:48). Plantations on St. Eustatius nevertheless produced small quantities of these crops. The real value of these plantations, however, lay in the illegal trade with other colonies. A common practice was to import crude sugar from English and French islands, refine it, and export it as sugar that had been refined on the islands themselves. This was done in order to avoid the mercantilist policies of those islands' mother countries. For example, in 1779 St. Eustatius produced 13,610 pounds of sugar, but it exported a staggering 25 million pounds (Gilmore 2013:44). As the price of Caribbean sugar dropped throughout the nineteenth century, sugar production on St. Eustatius dwindled. By the 1840s, the island's ten remaining plantations produced a total of 250,000 pounds of sugar and 200 hogsheads of rum and molasses (NA 4.MIKO 3.A.2.5.1. – 645).

A number of plantation owners were merchants as well (Gilmore 2013:43). This indicates that a large number of plantations may have been a secondary source of income, or even a front for engaging in illicit trade. This last possibility is underscored by a letter written by Admiral Rodney in 1781, in which he states:

---

15 The exact number and size of plantations and the extent of the plantation industry on St. Eustatius at this time is unknown.

> "The very few respectable men in this island were those who owned sugar plantations: few of them were concerned in the pernicious commerce which proved so detrimental to Great Britain." (Tunstall 1930:80)

If few of the planters were involved the trade in arms and ammunition that Rodney refers to, then some of them must have been involved in it. Given the lucrative nature of Statian commerce, is not unlikely that other planters were involved in different types of illicit trade as well. The illegal trade did not only flourish internationally, within the island it was widespread as well. By the late eighteenth century, enslaved people, free blacks, and whites were all involved in selling stolen sugar from the plantations. Enslaved people clandestinely took sugar cane at night and sold it in town. The damage to the plantation output was so great that the plantation owners were "not able to provide the amount that they had planned for" (Gilmore 2004:63). The thieves were not the only guilty party, as there was obviously a demand for the stolen sugar. These examples show that people from all social classes played a role in the commercial component, in both legal and illegal ways.

4.2 The transport and communication component

It is often assumed that islands are relatively isolated places cut off from the rest of the world by the sea, but this is not always the case. Compared to some continental areas, it can take a lot of time and effort to move people, goods, and information to and from islands. On the other hand, islands often benefit from their maritime environment as the sea, in many cases, facilitates much easier transportation than certain types of terrestrial terrain such as dense jungles and mountainous areas. The transport and communication component is consequently one the most fundamental components in an insular environment, which influences many aspects of the lives of people living there. It contains things that facilitate the movement of goods, people, and information such as ships, sailing routes, seamarks, pilotage, harbors, roads, and portages. In this chapter, several elements of this component will be discussed. First is the road, or roadstead, which was the area where most ships anchored throughout the colonial period. Second are areas around the island that were not part of the road but still played varying roles in the transport and communication component. Third are shipwrecks, which are of particular importance to the present study as ships facilitated the actual movement of people, goods, and information to and from St. Eustatius. Fourth is the terrestrial aspect of the transport and communication component, which includes structures in Lower Town, roads, and modes of transportation.

4.2.1 The roadstead

The roadstead, or road for short, was by far the busiest area in St. Eustatius' surrounding waters, where the vast majority of ships destined for the island dropped anchor. Nearly all movements of goods and people between ships and the island took place on the road, making it a very important part of the maritime cultural landscape. The captain of the Dutch frigate *Prins Willem de Vijfde* reported seeing 29 ships on Statia's road in 1761 (NL-MdbZA_20_994, folio 35). As trading activities on the island increased, so did the number of ships. According to Lieutenant Cornelius De Jong, who traveled

through the Caribbean on the Dutch man-of-war *Mars*, there were nearly 200 ships at anchor on the road when he first visited the island in September 1780 (De Jong 1807:96). A few months later, Admiral George Brydges Rodney noted 130 ships on the road (Enthoven 2012:241). Research into the extent and location of the roadstead was conducted in the 1980s, but the author suspected the results of this study to be incorrect based on of several pieces of evidence, which are described below. An in-depth documentary and archaeological analysis of the road was therefore conducted. The research presented in this chapter refutes the conclusions from the previous study, and for the first time provides a detailed and accurate map of the roadstead based on extensive archaeological and documentary data.

4.2.1.1 Documentary evidence

An examination of the documentary record is the first step in determining the size of the roadstead. According to Teenstra, "seeing the church tower in north-northeasterly direction, at 15 to 20 fathoms water depth, one finds a good anchorage."[16] Other good anchorages he describes are located in front of the town between 12 and 15 fathoms water depth, at the northwestern and western ends of the bay at approximately ¾ of an English mile (1.4 kilometers) from shore (Teenstra 1837:324). According to another nineteenth-century source, in order to anchor, one must bring the church tower north-east by east and Interloper's Cape northwest by west, where there is sandy ground in 9 or 10 fathoms (Hester & Bishop 1782:32). Another option was further offshore in 14 or 15 fathoms of water (Teenstra 1837:324). This information is corroborated by a map of St. Eustatius, made by Englishman William Faden in 1795. On this map, the road is indicated between 9 and 15 fathoms. Ship logs also show that many ships anchored in this depth range. In November 1760, Captain Bylandt ordered to anchor his ship *Maarssen* in 13 fathoms of water (NA 1.01.47.17 – 48, folio 63). Eighteen years later, the *Princes Royal Frederique Sophie Wilhelmine* dropped anchor in 14 fathoms, while another ship did the same in 13.5 fathoms (NA 1.01.46 – 2417, folio 135). Even ships carrying human cargo preferred to anchor in deeper waters. The Dutch slave ship *Haast U Langsaam* dropped anchor in 12 fathoms in 1773 (NL-MdbZA_20_532, folio 44).

Table 4.1 shows the anchoring depths of several vessels according to their logs. Most ships only anchored once, but nearly half of them moved closer to shore the next day and anchored again in shallower depths. The reasons for doing so are not described in the logs, but they are probably a combination of several factors, including reduced transportation times between the ship and the island, calmer seas, available space on the road, and more protection from the forts and batteries (see Chapter 6). In several instances, however, ships moved further offshore to deeper waters during their stay. While wave action caused by wind generally decreases closer to the island, the effect of swells increase, causing the *Zeemercuur* to move from 7 to 8.5 fathoms (NL-MdbZA_20_1405, folio 91). The *Haast U Langsaam* moved from 10 to 14 fathoms for unknown reasons (NL-MdbZA_20_518, folio 53). Some traffic on the roadstead was

16 Many different types of fathoms were used in the eighteenth and nineteenth centuries. In the Netherlands, most common was the *Rijnlandse* fathom, which equalled 1.88 meters. In England, a fathom was 1.83 meters. Teenstra most likely used the *Rijnlandse* fathom, as did the captains of all ships mentioned here. William Faden used the English fathom.

Figure 4.8 Drawing of St. Eustatius and its roadstead made by an unknown artist around 1790. Given the details in the island's topography present in the drawing, it is almost certain that the artist visited the island himself and drew this scene from aboard a ship. The image clearly shows that many ships anchored far offshore. Source: Library of Congress, G5032.S5A35 177-S8.

regulated, and it was also because of certain regulations that ships had to move. For example, in 1830, the regulations for the roadstead stipulated that captains of ships carrying gunpowder had to notify the Governor and harbormaster of their cargo, and had to anchor at some distance to leeward from the regular anchorage for safety reasons. If this location was deemed undesirable by the Governor or the harbormaster, they would choose a new anchoring location for the vessel (Curaçao Archives, Gouvernement van het Eilandgebied St. Eustatius, Inv. Nr. 248, article 9). Given the fact that the road could be very crowded in the 1770s and 1780s, it is likely this rule was in effect at that time already. North American ships obtaining gunpowder during the Revolutionary War (1775-1783) therefore likely anchored on the outskirts of the road.

Historical artwork provides many clues about the location and extent of the anchorage. Numerous eighteenth- and nineteenth-century historical drawings and watercolors of Statia's road exist, spread across private collections and archives all over the world. These show that some ships anchored close to shore, but most dropped anchor further away from the island. Ships are also depicted as far south as Kay Bay and as far north as Signal Hill. From historic artwork, it can be deducted that the road covered a large area on the island's leeward side. This is not surprising given the fact that there could be as many as 200 ships on the road. There was simply no room for so many ships to anchor close to shore.

4.2.1.2 Archaeology

The documentary record contains a wealth information about the location, size, and depth of the historic anchorage. Nevertheless, this information does not provide a complete picture. Archaeological research is necessary to complement this information by trying to understand what other insights the material reflection of past activities on the road can provide. As will be shown, a wealth of material culture is present on the

sea floor that can provide new insights into the historic anchorage and its relation to the natural landscape.

The research conducted on the road comprised an extensive survey of the anchorage areas as described in the documentary record. The locations of survey transects were determined on the basis of a multibeam sonar map made by the Dutch Institute for Sea Research (NIOZ) from data collected by the Dutch Royal Navy in 2006 and a side scan sonar map made by the author. The first map, found in Appendix I, displays the underwater topography on Statia's leeward side and shows many natural features that will be shown to be of particular interest in this study. Appendix II contains the side scan sonar map that was used to visualize small targets and particular sites in more detail. Appendix III shows the transects surveyed by SCUBA divers during all three fieldwork seasons. Appendix IV shows all major archaeological features and sites encountered during the survey, while Appendix V contains the extent of the historic anchorage zone based on the combined findings of the documentary and archaeological research. The survey relied on two basic principles. First, as the road is the area where many ships dropped anchor, the distribution of lost anchors will reflect the size and extent of the road archaeologically. Second, natural topography and the composition of the sea floor played a major role in determining where to anchor. By combining anchor distribution with information about underwater topography and the documentary data discussed previously, it is possible to produce a precise map of the historical anchorage.

Several anchors were already known and described in 2010, when the author documented all anchors on the popular dive sites (Stelten 2010). These will be summarized briefly before discussing the results of the present survey. Numbers 8, 9, and 10 are located on a coral reef at a popular dive site called *Nursing Station*. All three anchors are of English manufacture and date to the late eighteenth or early nineteenth centuries.[17] Numbers 11 and 12 are found at a dive site called *Crook's Castle*. The shank of anchor 12 is completely stuck in the reef, a curious position not seen in any other anchor found around the island. Anchors 6, 15, and 16 are hooked on reefs formed by the ballast piles of two shipwrecks (discussed in paragraph 4.2.2.2) and are missing parts of their shanks which probably broke off as they were attempted to be weighed. Anchors 4, 5, and 14 are intact anchors associated with shipwreck sites as well. Anchor 4 is of English manufacture and dates to the early nineteenth century, while anchor 5 is Dutch and might be slightly older. Anchor 14, of Dutch manufacture and dating to the late eighteenth or early nineteenth century, is resting on the sand next to the ballast pile of shipwreck site SE-505.[18] Anchors 4 and 5 are located in the sand to the north of shipwreck site SE-501. Anchor 13, a French anchor dating to the third quarter of the eighteenth century, has one arm stuck in the reef at a popular dive site called *Anchor Point*. With the exception of anchor 4, which has an iron stock, all anchors documented during this survey contained wooden stocks that have long decayed. Wooden anchors provide a *terminus ante quem* of early nineteenth century on small anchors, and mid-nineteenth century for larger anchors (Stelten 2010).

17 A discussion on anchor identification and dating can be found in Stelten 2010.

18 The shipwreck sites are discussed in detail further on in this chapter.

In addition to the twelve previously documented anchors, 29 more anchors were discovered during the present survey. The first site surveyed is a rocky outcrop named SE-510. From the multibeam imagery, the site seemed like a high-probability site for anchors due to its prominence, location, and depth. It is oriented southwest – northeast at a heading of 39 degrees and measures 900 meters long and between 3 and 10 meters wide. Its 350-meter-long central part consists of a high reef structure that protrudes between 3 and 4 meters from the 25-meter-deep sandy bottom surrounding it. The outcrop, covered by a dense reef, forms an impressive structure on an otherwise sandy sea floor, with large chunks of rocks about to slide off the top. It contains many cracks in which anchors could easily get stuck. Because of its dramatic topography, it attracts large quantities of fish and is overgrown by a variety of corals and sponges. Six anchors were found to be associated with this reef: two intact anchors on top of the reef (numbers 25 and 28), one intact but heavily overgrown anchor immediately next to the reef (number 26), and three anchor pieces embedded in the reef (numbers 27, 29, and 30). The intact anchors were all missing their wooden stocks which have decayed over the years. The absence of iron stocks provides a *terminus ante quem* of mid-nineteenth century for these anchors. Anchor 25 is of English manufacture, while anchor 28 was made in France. Four anchors were found on top of the reef, but anchors 26 and 30 are stuck in the reef from the southern side, indicating that ships mainly anchored to the south of the reef. This is to be expected, since the area to the south of the reef is very sandy, while the area to the north consists mainly of rocks and is therefore unsuitable for anchoring. As the size of the site made it impractical to map by hand, a side scan sonar survey was conducted to visualize the reef's central part (Figure 4.9).

The second site surveyed is a reef named SE-511. It is located 240 meters east of SE-510, and is oriented in the same direction. The reef is 700 meters long, and sits on a 3- to 10-meter-wide rocky outcrop which protrudes between 50 centimeters and 1 meter from the sandy sea floor. This site is does not contain the abundance of corals, sponges, and fish found at SE-510. Eight anchors and one anchor piece were found along this reef: six on the reef and three in the sand next to it. The absence of iron stocks provides a *terminus ante quem* of mid-nineteenth century for all anchors. The northernmost two anchors, numbers 19 and 20, are located in close proximity to each other at 11 meters apart (Figure 4.10a). No other artifacts were found in close proximity to these anchors. One hundred meters to the southwest, a concentration of anchors was found, containing anchors 21, 22, 23, 24, 34, and 41 within a 70-meter-long zone (Figure 4.10b). With the exception of two anchors, all were intact besides the wooden stocks that have decayed. Anchor 34 is a 112-centimeter-long four-armed grapnel anchor, which was probably used on a small boat that transported goods between larger ships and the island. This type of anchor had enough holding power for a small vessel such as a canoe or a row boat, but not for larger ships. Anchor 41 consists only of a piece of shank and a ring. The remaining part of the shank and the arms could not be located and may be buried in the sand around it. Anchors 22 and 24 are of English manufacture. No indications of a shipwreck – a ballast pile, cannon, large quantities of artifacts – were encountered at the site. It is therefore safe to assume that these anchors came from different ships. A few artifacts, however, were found among the anchors. These include a yellow brick, part of a delftware plate, and an unidentified 2-meter-long metal object. As many ships obviously anchored at this location, artifacts

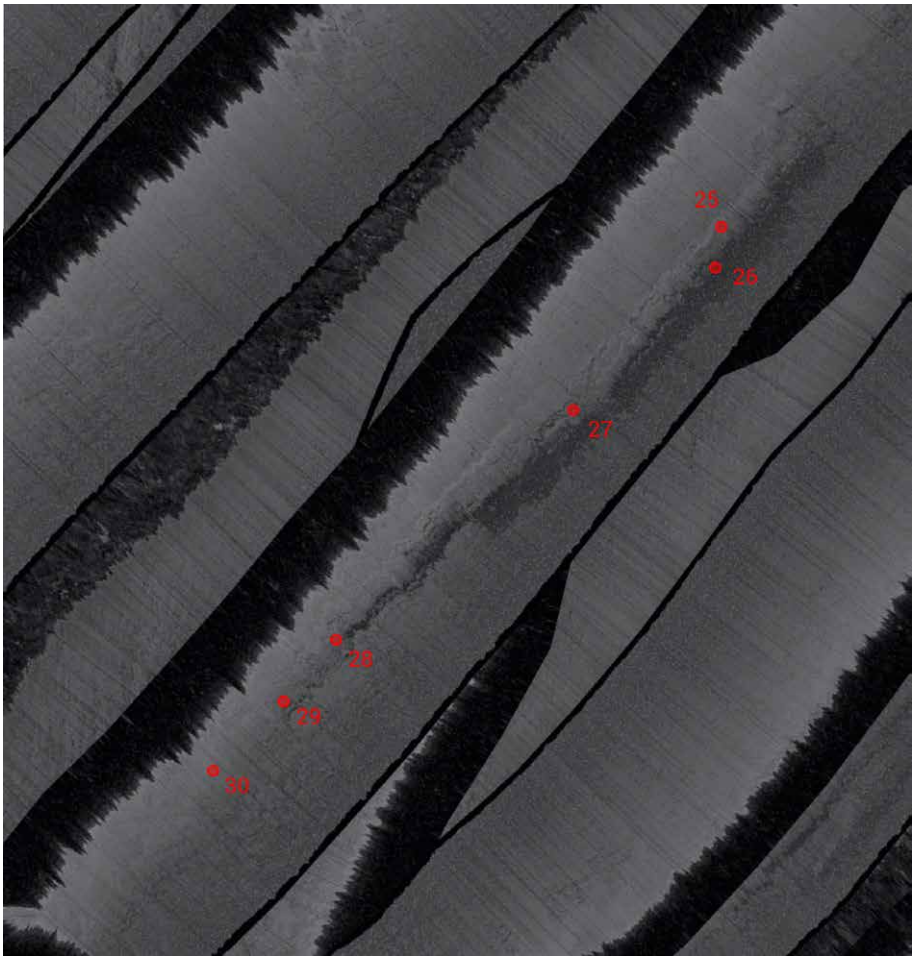


Figure 4.9 Side scan sonar mosaic of the central, elevated part of SE-510. The higher parts of the reef produce acoustic shadows which provide an indication of relative height above the sea floor. The distance between anchors 25 and 30 is 320 meters. The reef is oriented north-east-southwest. Anchor 30 marks the southwestern tip of the site.

discarded by sailors are expected to be found among the anchors. Furthermore, a large 2 x 0.5 meter object resembling a rock was found next to anchor 23. Several of these objects were encountered along SE-511. The objects contain grooves, determined to be holes that once contained rebar. It appears that these are blocks of concrete that were dumped here, most likely after Lower Town's old pier, built in 1976, was dismantled in the 1990s. The site is surrounded by a sandy bottom, ideal for anchoring. As discussed above, the position of anchors on SE-510 indicates that ships anchored between this reef and SE-511. All anchors on the latter reef, however, were found directly on top or on its southern side. This indicates that ships also anchored to the south of SE-511, which is a very sandy area as well.

The next site surveyed is a 900-meter-long structure resembling SE-510 and SE-511 on the multibeam imagery. Named SE-512, it is located 800 meters southeast of SE-511, and runs southeast – northwest at a heading of 70 degrees for 900 meters. The

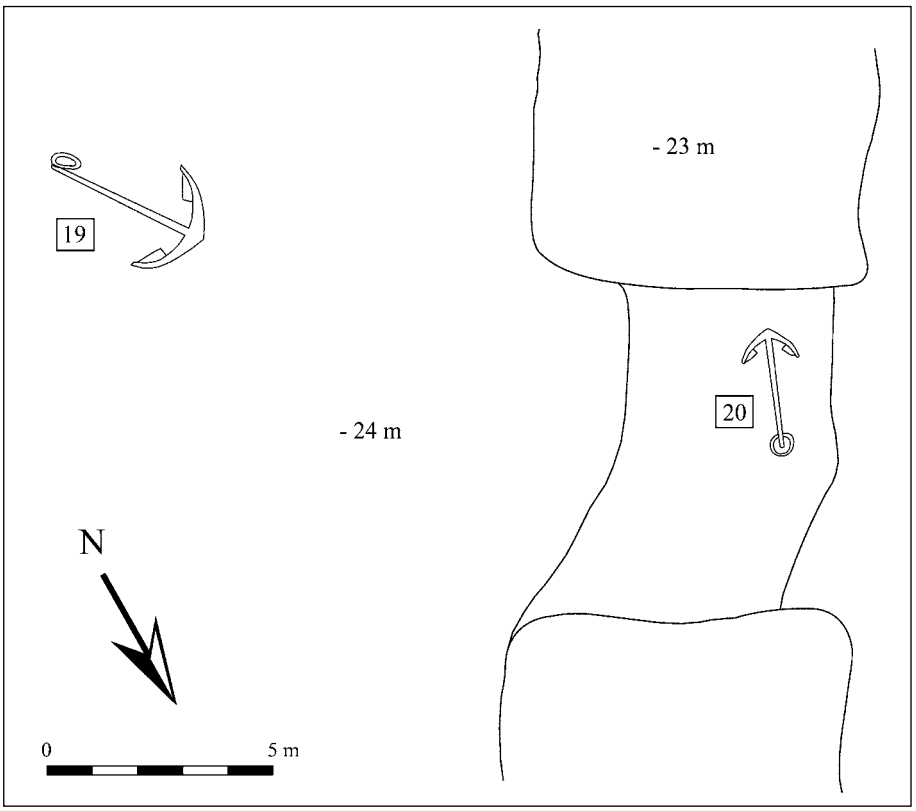
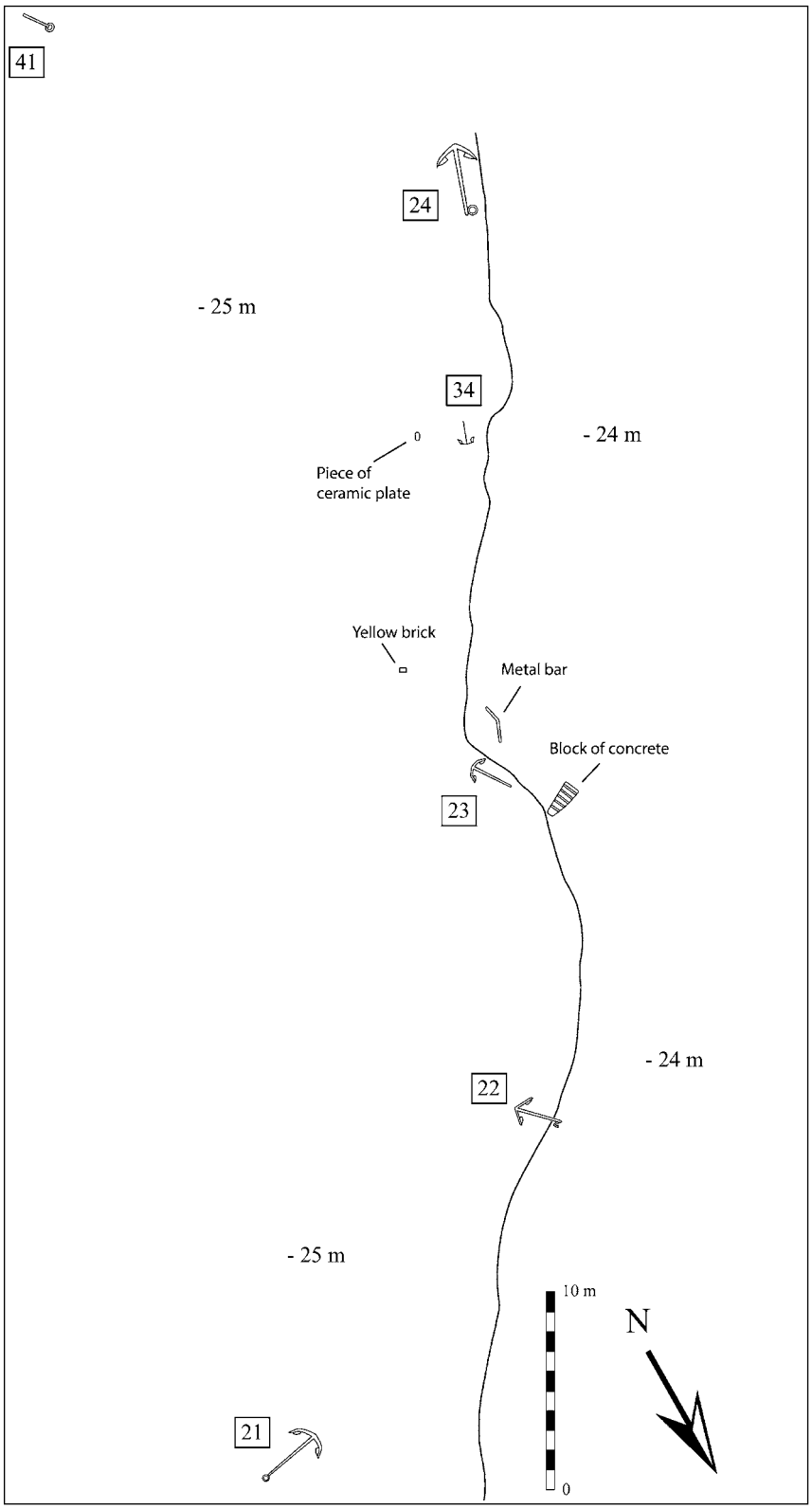


Figure 4.10a Drawing of the northern part of SE-511, where two anchors were found in close proximity to each other. Anchor 20 is laying on a narrow stretch of reef, while anchor 19 is laying in the sand.

Figure 4.10b (opposite page) The anchor concentration of SE-511 at 100 meters to the south-west of the anchors in Figure 4.10a. Six anchors were encountered here, of which numbers 21, 22, 23, 24, and 34 are intact. Number 34 is a grapnel anchor. Number 41 consists of part of the shank and a ring. Among the anchors, several artifacts were encountered. The line in the center of the drawing marks the edge of the reef, which is on the right side of the drawing. To the left of the reef is a sandy area.

reef sits on a rocky outcrop, measuring between 3 and 35 meters wide. Its prominence from the sea floor ranges from 50 centimeters to 5 meters. As SE-512 appeared to share many similarities to the previously surveyed sites in terms of shape and location amidst a sandy bottom, the site was surveyed completely. Three anchors, intact except for their wooden stocks, were found within 145 meters of each other in the northeastern part of the site. Two of these, numbers 37 and 39, had one arm completely stuck in the reef. Anchor 38 was found on top of the reef's northern side. No other artifacts were found in close proximity to these anchors. The site is surrounded by a sandy bottom, providing a suitable place for anchoring. All three anchors on SE-512 were found on its northern side, indicating that ships mainly anchored to the north of this reef. This fact, coupled with the anchoring depths known from ship logs, demonstrates that the sandy area between SE-511 and SE-512, which is between 12 and 13 fathoms deep,


41
24
- 25 m
34
0
- 24 m
Piece of
ceramic plate
Yellow brick
Metal bar
Block of concrete
23
- 24 m
22
- 25 m
10 m
N
0
21

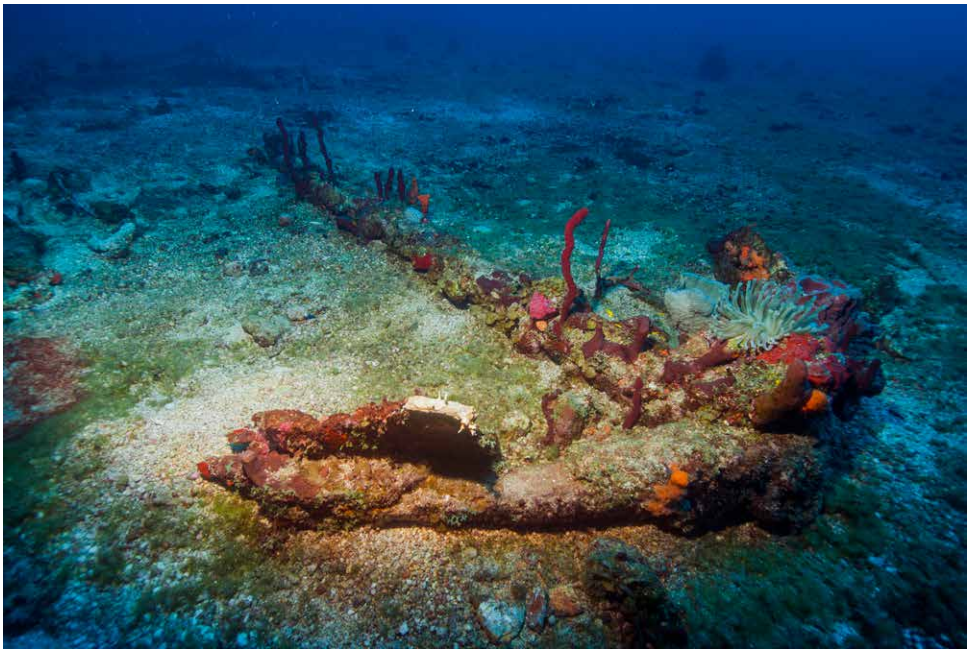


Figure 4.11a Anchor 17, lost in a 22-meter-deep sandy area in the middle of the historic anchorage zone. It is 306 centimeters long and heavily overgrown with corals and sponges. The fluke in the foreground had become partly detached. Photo by Mike Harterink.

Figure 4.11b Anchor 2, lost on a reef just outside of Jenkins Bay at a depth of 13 meters. This anchor, measuring 222 centimeters in length, is the only one found in the northern part of the island. Photo by Mike Harterink.

was a popular anchorage area. Visual comparisons from the diving vessel indicate that the drawing in Figure 6.2 was made from a ship anchored in this area, close to SE-512.

A site that did not contain any anchors or other archaeological remains, but is similar in appearance and composition to SE-510 and SE-512, is a reef located just 190 meters northwest of SE-510. It is an impressive structure, up to 6 meters tall, that is composed of several elevated, elongated ridges and depressions. The site was completely surveyed as it seemed highly likely that it contained anchors. Curiously, nothing was found. The reason for this may be that the sea floor to the east of the reef is very rocky and therefore unsuitable for anchoring. Another site surveyed was a large rocky outcrop southwest of Jenkins Bay, which on the multibeam imagery appeared to be a promising target. It consists of a 32-meter-deep, rocky plateau of 90 meters in diameter, surrounded by a sandy bottom. Ships anchoring outside of Jenkins Bay could have easily gotten their anchors stuck at this site. No anchors or any other archaeological remains were found here, indicating that this area might have been too far away for vessels to anchor. This can be explained by the fact that Jenkins Bay was associated with smuggling activities, which would have taken place closer to shore to avoid detection.

Several other areas were investigated based on information provided by people on the island. The area in front of Corre Corre bay, the island's only barrier reef located on the east coast, was surveyed as local fishermen reported the presence of an anchor at a depth of 22 meters. A transect at that depth was dived, but the anchor could not be located. A U-pattern survey in the shallows closer to the reef was conducted as well, as fishermen reported another anchor in this area. This anchor, number 31, was found directly in front of Corre Corre battery at a distance of 150 meters from shore at a depth of 4 meters. It is resting on a rocky bottom with no archaeological remains in the vicinity. The anchor's length of 312 centimeters indicates it was used by a large vessel which may have run aground here. When ships ran aground, heavy objects such as cannon and anchors were often jettisoned to decrease draft and free the vessel. Another U-pattern survey, this time by snorkeling, was conducted on the east coast. Local fishermen reported an anchor present in the shallows in front of Concordia battery. The area was surveyed extensively but the anchor could not be located. Marine park rangers provided the location of yet another anchor they once found during a survey to the west of Boven Hill. Their exact transect was dived, but the anchor could not be relocated. Due to the sandy nature of the sea floor in this area, this anchor may have been buried.

Anchors 1, 7, 32, and 33 are isolated anchors found at anomalies on the multibeam imagery. Anchor 1 was found in the sand next to an elongated rocky outcrop 60 meters from shore in front of Smoke Alley at the northernmost part of Lower Town's road. Its small size indicates that it was used by a small ship, most likely a canoe or row boat used to transport goods and people to and from ships. Anchor 7 was found in the sand next to a low elongated ridge between SE-512 and *Nursing Station*. The anchor was found on the ridge's southern side. The three anchors at *Nursing Station* are located between 250 and 300 meters to the east, indicating that this was also a popular anchoring area. Further to the southeast, anchor 32 is partly buried in a coral reef slightly to the west of dive site *The Humps*. It is completely overgrown with corals and sponges and therefore very hard to recognize. This anchor is not located in a sandy area or historic anchorage. It may be that the vessel's captain was not knowledgeable about

Figure 4.12 Left: Anchor 22, found on top of the reef at SE-511 at a depth of 24 meters. It is 242 centimeters long. Right: Anchor 1030, found inside the reef of SE-510 at 22 meters deep. Of this anchor only one arm remains. The anchor got stuck underneath the ledge in the center of the image. The force of the ship pulling on the anchor caused this arm to break off. Photos by Mike Harterink.

Statian waters, but the anchor could also represent a last attempt to save a ship headed for the cliffs during a storm. Anchor 33 is located close to shore, 30 meters to the west of the *Twelve Guns* site discussed below. It is laying among several large rocks next to a coral-encrusted boulder. Its modest length of 177 centimeters indicates it was probably used on a small- to medium-sized vessel with little draft, allowing it to sail and anchor relatively close to shore.

Besides surveying anomalies on the multibeam and side scan imagery, several transects were dived in the sandy areas between anchors in order to determine the potential for archaeological remains and to assess the condition of the sea floor. Due to the presence of anchored oil tankers which made diving too hazardous, several areas far offshore and to the northeast of SE-510 and SE-511 could not be investigated. Anchors 3, 17, 35, and 36 were found in these transects. These are isolated anchors on a sandy bottom with no other artifacts or significant natural features in the vicinity. Anchor 35 was found to be of English manufacture. Sea floor conditions were noted on each transect and this information was used in the determination of the size of the historic anchorage.

Besides anchors, other large artifacts are present on the roadstead as well. About 50 meters from shore, between batteries Bouillé and Nassau, is a pile of cannon at a

snorkel site called *Twelve Guns*. This site was assigned site number SE-513. The cannon are resting on a 4-meter-deep sandy bottom immediately next to a large rocky outcrop extending to a few centimeters below the water surface. The facts that it was customary to salvage cannon after the wrecking of a ship in shallow water due to their high value, and the absence of ship remains or other artifacts at this site, rule out the possibility that these cannon are part of a wrecked ship. In the nineteenth century, merchants traveled around the Caribbean looking for old cannon that could be used in forts and museums in the United States or that had a value as scrap iron. These merchants are known to have visited St. Eustatius as well. One such instance was described by Frederick A. Fenger, In his book, he mentioned that an American schooner called at Statia in the late 1870s to collect scrap iron, and bought four cast iron cannon. It must have been around this time, when cannon had become obsolete, that the cannon at *Twelve Guns* ended up at their present location. These guns were probably discarded from the nearby batteries and were thrown off the cliffs to be picked up on the beach. The vessel transporting the cannon between shore and ship most likely hit the nearby rocky outcrop and capsized, causing the cannon to fall overboard. The site is called *Twelve Guns* because often twelve cannon can be seen, but this is dependent on the movement of the sand. Some people have reported as many as seventeen cannon here, while others have never seen more than six. Eight cannon were visible at the time of this survey. Although they are too encrusted to be identified, they are all small caliber guns, ranging from 135 to 176 centimeters in length.

4.2.2 Shipwrecks

With thousands of ships calling at Statia each year during the late eighteenth century and its location in the middle of the Atlantic hurricane belt, the island is likely to be surrounded by shipwrecks. Historical records about ships wrecking around the island abound, and in the 1980s, several wrecks in Oranje Bay and Gallows Bay were investigated. Even though shipwrecks are only a small component in the entire maritime cultural landscape, they can offer unique information not found on any other type of site. They represent a particular event – the wrecking of a ship – more or less frozen in time. On the other hand, they contain a wealth of information about years of life on board and are the links between the island and the rest of the world. In this section, several lines of evidence regarding shipwrecks in Statia's surrounding waters will be discussed.

4.2.2.1 Documentary evidence

Many historical documents contain references to ships wrecked around St. Eustatius. The study of these can shed light on the locations of wrecks, their identification, the nature of their cargo, and the circumstances which led to their unfortunate fate. The documentary record contains information on dozens of ships that wrecked in the waters surrounding St. Eustatius. Newspapers are an important source of information on this topic. The September 7, 1733 edition of the *Pennsylvania Gazette* mentions that in the summer of that year, a storm caused eighteen ships to founder or wreck against the shore, leaving the "whole sea to leeward of Statia and Saba cover'd with wrecks." Four decades later, the same newspaper published an extract of a letter from a gentleman at St. Eustatius to his friend in New York, dated September 5, 1772:

> "I am sorry by this Opportunity to have Occasion to mention to you the unfortunate Situation we are in at this Island: On the 28th of last Month, we had a violent Gale of Wind, that drove all our Shipping out of the Road, except a Spanish Sloop, from Campeachy, and a Schooner ready to sail, with a large Quantity of Fire-arms, for Margarita. A Sloop, belonging to Richard Quince Esq. of North-Carolina, which had just arrived, loaded with Lumber, and a small Vessel from Anguilla, were drove on Shore, the Vessels lost, but their Cargoes and People saved."

Governor Jan de Windt, writing to his superiors of the West India Company about the hurricane of 1772, remarks that three days before the hurricane, several ships had already wrecked due to rough seas preceding the storm. All ships on the road then fled out to sea, but De Windt does not mention what happened to them (NA 1.05.01.02 – 629, folio 337). An article in a contemporary newspaper stated that four ships foundered while at anchor, a number of other vessels were driven ashore, and some fled to open sea (Caledonian Mercury, November 18th, 1772).

Ship logs also provide detailed accounts of the wrecking of ships around the island. The log of the *Princes Royal Frederique Sophie Wilhelmine* mentions the wrecking of a North American ship that was being chased by an English privateer in 1779. At the southeastern point of the island, it capsized and its cargo of tobacco, flour, bread, and tea was lost. Several small boats were sent to save the crew. A barrel of rum was salvaged two days later, but the vessel was destroyed. It most likely hit the shallow rocks close the shore at the southern side of the island and was battered by the waves. On November 29, 1789, the log of the *Zeemercuur* reports that a bark crashed into shore due to a lot of wind and swell, hinting at a passing storm as the culprit (NL-MdbZA_20_1405, folio 93).

Most devastating to ships were hurricanes, some of which have been described by survivors. An account of the deadliest recorded hurricane in the Caribbean, the Great Hurricane of 1780, describes the situation on St. Eustatius:

> "On the 10th [October 1780] instant, at eleven in the morning, the sky on a sudden blackened all around; it looked as dismal as night, attended with the most violent rains, thunder, lightning, and wind ever before known. In the afternoon the gale increased. Seven ships were drove on shore near North Point, and dashed to pieces on the rocks; they were bound for Europe, and every soul, officers and men, perished. Nineteen other ships cut their cables, and stood to sea; only one of which is returned, in a most dismal situation. We fear others have not weathered the storm." (Fowler 1781:71)

Twelve years later during another hurricane, five ships wrecked around the island:

> "Captain Saltus, of the sloop Mary, who arrived here last week from St. Kitts and St. Eustatia, brings accounts of a very severe gale of wind, which came on the first of the present month, at four o'clock p.m. the wind looked from east, to N.N.E., beginning to blow a hurricane. […] At St. Eustatia, a Dutch ship, with 500 hogsheads of sugar, was driven on shore, and lost, the people saved;

> also went on shore, an American sloop and two English vessels. On the 2nd of August, a brig in putting to sea went on shore on the west side of St. Eustatia, her crew all perished." (The New-York magazine 1792:574)

Sometimes ships were intentionally sunk, or scuttled. In 1828, Thomas Harper described a situation in which a ship was brought onto the road as a prize. Several boatloads of goods were taken off the ship, after which it disappeared. It was said that the ship was sunk (Wood 1830:25). Various other accounts do not specify the reasons for wrecking, but these are interesting nonetheless. In 1758, the Italian merchantman *Duke Compagni* had just weighed anchor when she was wrecked in an attempt to round the northern side of the island. The ship was carrying several chests of silver coins, most of which were salvaged. All crew survived the wrecking as well (Marx 1987:264). It is likely that the *Duke Compagni* was wrecked due to a navigational error rather than a storm. During a storm or hurricane, it was usually impossible to salvage the cargo, and many sailors would drown in the violent sea. This is particularly true for the northern side of the island, where high waves crash onto steep cliff during storms, causing ships to shatter to pieces and crews to perish. The fact that the wrecking of the *Duke Compagni* seems to have happened on a clear day points to a navigational error.

4.2.2.2 Shipwrecks in St. Eustatius' archaeological record

Material remains of these unfortunate events abound in Statian waters. In 1986, archaeologists from the College of William & Mary and East Carolina University conducted a magnetometer survey of approximately 2.5 km^2 in Oranje Bay and Gallows Bay. The magnetometer identified magnetic signatures generated by iron artifacts on the sea floor, and in this way the locations of two shipwreck sites were determined (Bequette 1986). Two other shipwrecks were located during visual surveys of the harbor area. The sites were named SE-501, SE-502, SE-504, and SE-505. Appendix VI contains the site plans of all four sites. Documentation and excavation of the wreck sites was conducted in 1987 and 1988 (Bequette 1992). All four shipwreck sites are similar in appearance in that they consist of piles of ballast stones that are completely overgrown with a variety of sponges and corals and inhabited by large numbers of fish and invertebrates. Most wood has been completely destroyed by shipworm (*Teredo navalis*), a species of saltwater clam that is notorious for burrowing through submerged wood. The wrecks were drawn and 1-meter square test trenches were excavated at select locations. As many artifacts found on top of the wrecks may have originated from other ships and therefore postdate the wrecks, the only way to date the sites and study the ships in more detail was by carrying out excavations.

SE-501, located approximately 650 meters from shore, is now a popular dive site called *Double Wreck*. The site is 45 meters long, 7.5 meters wide, and oriented in a north-south direction along its main axis. It consists of five separate ballast piles that are located on a sandy bottom at a depth of 18 meters. The northern part's narrowing shape may indicate the bow of the ship, while the southern part's rounding in the ballast structure may be indicative of the stern. Ten 1 m^2 test trenches were excavated to depths of around 1 meter, below which was a hard layer of rocks and dead coral that proved impossible to excavate. The 104 recovered artifacts, which included red, orange, and yellow bricks, clay tobacco pipe fragments, glass bottle fragments, a large variety of

ceramics, and several metal objects, did not produce a good analysis for identification. Based on the artifact assemblage, the investigators concluded that this vessel dates from the late eighteenth to the mid-nineteenth century, and could be of English or Dutch origin (Bequette 1992:136).

SE-502, located 600 meters from shore, used to be a popular dive site called *Stingray City*. The site is 40 meters long, 12 meters wide, and oriented in a north-south direction along its main axis. The site is located on a sandy bottom at a depth of 16 meters and consists of one large ballast pile which gradually slopes into the sand on the western side. The investigators believed that the southern end of the site was the ship's bow due to its rather pointy shape. Near the bow, two anchor chains were documented, one of which went into the structure on both ends of the chain. Other artifacts laying on top of the ballast structure two years prior to the investigation included a ship's bell, muskets, and swords. These objects were reported to have been looted, as they were not present when archaeologists studied the site. According to a former dive shop owner, these artifacts were taken to Australia by a treasure hunter (Personal communication with Rudy Hees, former dive shop owner). On the starboard bow side of the site, an 85-centimeter-long swivel gun was found among the ballast stones. Ten 1 m^2 test trenches were excavated, situated along the starboard and port sides. These yielded numerous artifacts, ranging from the ship's cargo and tools to personal items of the crew. A second swivel gun was found on the port side near the bow of the ship, at a depth of 30 centimeters. Many red and yellow bricks, as well as several pieces of slate, were uncovered indicating that these may have been transported in the hull as ballast. During a visual survey of the site in August 2015, many yellow bricks were encountered in the southern and central parts of the ballast scatter. The forward section of the vessel contained several metal and wooden tools, indicating that this area may have housed the ship's stores. Among the other artifacts collected from the test trenches were many fragments of glass, ceramics, and clay tobacco pipes, cutlery handles, musket balls, fragments of wood, guns, leather objects, many pieces of iron, and a glass lens that may have been part of a telescope. On the port side, two wooden plank fragments were excavated that were thoroughly eaten by shipworm (*Teredo navalis*). Several pieces of charred wood were found in the center of the ship, which could be evidence of a burnt ship or they could have been from the galley stove. Based mainly on the clay tobacco pipe fragments and the ceramic assemblage recovered from the test trenches, the researchers believed this ship dates to the mid-eighteenth century and is of Dutch origin. The wreckage was believed to be that of a merchant vessel due to the large amount of ballast encountered (Bequette 1992:137).

SE-504, part of a popular dive site called *Triple Wreck*, is located 80 meters southwest of SE-501. The site is 61 meters long and 12 meters wide, and oriented in a north-south direction along its main axis. The site is situated on a sandy bottom at a depth of 20 meters. It consists of a ballast pile in the shape of a ship's hull and a small area of ballast scatter on the eastern side. Several ballast deposits on the site's southern end may indicate a possible breakup of the vessel as it sank and touched bottom. Yellow and orange bricks were scattered over the surface of the site and over the sand on the western side of the ballast pile. Towards the southeastern part of the wreckage, a pile of coral-encrusted anchor chains was found in the sand. No test excavations were conducted at this site due to time constraints. A broken anchor was found on the

southeastern part of the site, with part of the shank and one arm visible and the other arm embedded in the ballast pile. The researchers removed some of the sand in order to find the fluke on the buried arm, which they located 12 centimeters deep in the ballast pile. While doing this, they removed pieces of wood, bricks, and rocks, and found a small intact rice bowl beneath the anchor. It is believed that the anchor became hooked on the wreckage and had to be cut free, indicating that it postdates the wreck.

SE-505, located approximately 60 meters to the west of SE-504, is also part of the *Triple Wreck* dive site. The site is 109 meters long and 25 meters wide, and oriented in a north-south direction along its main axis. The site is located on a sandy bottom at a depth of 20 meters and consists of a ballast pile of which the entire western side is a ballast scatter. It is believed that this resulted from the vessel's side spilling open as the ship decomposed. The site's northern and southern ends, and the entire eastern side, rise approximately 1 meter from the bottom. The southern part of the site contains a double set of anchor chains and a metal object that may be associated with an anchor. No excavations were conducted on the site due to time constraints. The limited research on sites SE-504 and SE-505 did not produce sufficient information necessary to support any conclusions about these vessels regarding their age, origin, or nature (Bequette 1992:138).

Remains of ships are not only found on shipwreck sites, but as isolated artifacts as well. A large number of artifacts were encountered during the investigation of the location of the historical anchorage carried out in the 1980s (Nagelkerken 1985). The vast majority of these are portable objects, but the collection, now curated by SECAR and used as a study collection, also contains some ship parts. These include metal oar locks from row boats and wooden pulleys and pulley blocks used in ships' rigging. Unfortunately, these artifacts were never documented properly during the initial investigation, so their exact provenance remains unknown. They are useful nonetheless, in that they offer a material reflection of shipping activities and provide an indication as to the potential for shipwreck research and preservation in this part of the road.

One passage in Frederick Fenger's work *Alone in the Caribbean* is of particular importance for the study of shipwrecks, in which he describes the location of a shipwreck and the nature of its cargo:

> "Passing the walls of the last sugar refinery in operation on the island [St. Eustatius], we came to the beach. A blue spot in the sand caught my eye and I picked up a slave trading bead of the old days. It had been part of a cargo of a ship bound for Africa; her hulk lay somewhere out there in the darker waters of Crook's reef where it had lain for the last century or more, sending its mute messages ashore with each southwest gale, ground dull on their slow journey over the bottom of the Caribbean." (Fenger 1917:306)

At this point, it is necessary to deviate from the topic of shipwrecks in order to provide a context for the blue slave trading beads mentioned by Fenger. Glass beads have been found in colonial-period archaeological sites throughout the Atlantic World. Among their many uses and meanings, these beads were often traded for enslaved people in West Africa. There is a scarcity of decorated beads in the Caribbean compared to West African sites such as Elmina in Ghana and Bunce Island in Sierra Leone.

Figure 4.13 Blue beads of the WIIf(d) type. The beads in the top image were found at Blue Bead Hole. The left bead is 16 millimeters long and 13 millimeters wide. The beads in the bottom image were found in a hoard during an archaeological excavation by SECAR north of the Old Gin House hotel in Lower Town in 2013. Nearly every terrestrial archaeological site excavated on St. Eustatius, with the notable exception of the slave quarters at Schotsenhoek, contains blue bead of the WIIf*(d) type. Photos by the author.*

Plain blue seems to have been the preferred bead color in the Caribbean. Whether the scarcity in decorated beads reflects a general disdain for them in the Caribbean, their unavailability in the local markets, or some other factor is unknown (Karklins & Barka 1989:67). On St. Eustatius, one particular type of blue glass bead predominates. It was classified as the WIIf*(d) type by Karklins and Barka in 1989 (Karklins & Barka 1989). Beads of this type are dark blue and pentagonal in cross-section. Made in Amsterdam by Venetian glassblowers as early at the first half of the seventeenth century, they are of the wound bead type, made by winding a strand of molten glass around a rotating metal mandrel until the desired size and shape were achieved (Karklins 1974:67).

The resulting elongated glass tube was then cut into several pieces, each of which was a bead. While beads of the WIIf*(d) type have also been found on colonial-period Amerindian sites in North America and slave trading posts in West Africa, nowhere are they present in such large quantities as on St. Eustatius. During the 1981-1987 field seasons on St. Eustatius, archaeologists from the College of William and Mary recovered 325 beads from various terrestrial excavations, 25 percent of which were beads of the WIIf*(d) type. These beads are found all over the island, but particularly on the beach in Gallows Bay, where Fenger reported to have found one. This suggest that this particular type was either especially popular with the local population or that Statia was a major distribution point for them (Karklins & Barka 1989:67). It is said that these 'Statia blue beads' were used as a type of currency by the enslaved population and were worn as body ornaments on necks, arms, and legs. Bead use among enslaved people throughout the Caribbean seems to have been widespread according to many historical sources (Karklins & Barka 1989:75). They were acquired by trading, stealing, or as gifts. Local legend has it that when enslaved people on Statia were emancipated on July 1, 1863, they stood on the edge of the cliffs and threw their beads into the sea as a sign of their freedom. This may be one of the reasons why many blue beads are found on the beach in Gallows Bay, where Fenger found one himself.

The shipwreck Fenger described is located at a popular dive site called *Blue Bead Hole*, located a few hundred meters west of the harbor in Gallows Bay. Here, divers often find blue beads of the WIIf*(d) type which they can take home as souvenirs.[19] Over the last three decades, thousands of blue beads have been found in this area. They are usually found after heavy swells which cause the sandy bottom to stir up, thereby exposing beads that were previously buried. The area where the blue beads are found is a few hundred meters across, but most are found in a very small area that contains a large concentration of beads. It is in this small area where the ship described by Fenger must have sunk. The loss of a cargo of blue beads is the only logical explanation for their abundance in this area, as the legend whereby former enslaved people threw their beads into the sea at emancipation does not account for the large numbers of beads that are found here. Moreover, the former enslaved people could not have thrown their beads that far into the sea, as the site is located several hundred meters from shore.[20] In this case, an oral historical account of the island's inhabitants about the wrecking of a ship told to and written down by Fenger provides an explanation for the presence of large numbers of blue beads in this area.

Four dives were made at *Blue Bead Hole* in order to find the remains of the sunken ship that is mentioned by Fenger. The site was surveyed systematically in a U-pattern by two divers swimming roughly 15 meters apart. *Blue Bead Hole* consists of a sandy

19 Even though local law forbids the export of archaeological artifacts, an exception is made for blue beads, as it is customary in Statian culture to give these away to visitors.

20 That the theory set forth in section 4.2.4 about wave action moving artifacts from shallow to deeper waters is not the case with the Blue Bead Wreck is demonstrated by the fact that the beads are found in a high concentration in a small area, and lower concentrations further away on all sides. If they were deposited there from shore, a more evenly-spread pattern would be the result. It is likely that the Blue Bead Wreck sunk at a time when the sea floor was at a very low point, causing some beads to be unearthed and wash up on shore but many to stay buried even at times when much sediment is moved to shore.

Figure 4.14 Divers measuring ballast piles at Blue Bead Hole. Next to this 8-meter-long pile, an elongated, completely encrusted metal artifact was found that is thought to be a musket. It was left in place due to limited conservation possibilities at SECAR. Photo by Mike Harterink.

bottom, ranging from 15 to 17 meters deep. Despite the fact that many – undoubtedly the most intact and most visually appealing – artifacts have been looted from this site over the past 30 years, an abundance of artifacts besides the famed blue beads is still found here, including ceramics fragments, glass bottle fragments, ballast bricks, and metal artifacts. There is said to be a swivel gun present at the deeper part of the site as well, but it was not found during the present survey. The site is also covered in ballast stones, indicating that many ships anchored in this area.[21] The ballast stones are scattered across the site, with concentrations at various locations. One of the largest concentrations is located near the center of the site, where most blue beads have been found. The stones appear in small piles across the sandy bottom, some of which are up to eight meters long and half a meter high. It is possible that some of these larger piles may be the remains of shipwrecks instead of ballast that was thrown overboard, but this is impossible to determine without excavating underneath the structures. It could be that only the tops of these piles are visible, as the depth of the site can be reduced or increased by several meters due to erosion and sedimentation of sand caused by storms. Despite the fact that many artifacts and ballast stones were encountered, it was impossible to link any of these, except for the blue beads, to the Blue Bead Wreck. The concentration of blue beads, which marks the (approximate) location where the ship went down, was named SE-506.

Even though no specific remains of the Blue Bead Wreck could be identified, the nature of its cargo can provide some insights into the type of vessel this could have been. The cargo of the Blue Bead Wreck has several parallels in the archaeological re-

21 Ballast stones were thrown overboard to make room in the hold for locally-produced products.

cord. Perhaps the most well-known is the wreck of the *Henrietta Marie*, which met her unfortunate fate in 1700 off the coast of Florida after delivering 190 enslaved Africans in Jamaica (Cottman 1999). When she left London the year before, she carried 790 kg of trade beads. Archaeologists have recovered around 13,000 beads from the wreck site since the 1980s. The *Henrietta Marie's* collection is dominated by Venetian rounded beads in the colors green, yellow, and blue.

Another parallel was found in Bermuda, where divers in 1975 discovered a site that contained over 10,000 glass trade beads. It was investigated by archaeologists in the late 1990s, who determined it to be a debris field of a slaver that ran aground in the eighteenth century. To free the ship from the reef, 21 cannon and some of the ship's cargo were jettisoned. This cargo contained over 10,000 glass trade beads of various types, including some of the typical Statia blue beads. The most likely place of manufacture of the beads was determined to be the Netherlands (Karklins 1991:36). Other items recovered that related to the slave trade were manillas. The cannon were found to be cast in the Netherlands. Smith & Maxwell put forward a convincing argument for attributing the debris field to the French slaver *Amazon* which operated out of Nantes (Smith & Maxwell 2002). In the mid-eighteenth century, the Dutch were supplying Nantes-based merchants with goods used in the slave trade, resulting in Dutch cargo and even ordnance to be found on French slave ships. While the beads carried by the Blue Bead Wreck were made in the Netherlands and could have been transported by a Dutch vessel, the ship transporting them could also have been French. Even though this example by no means provides a definite identification for the Blue Bead Wreck, it provide a clue as to its possible origin.

It is interesting to note that the cargo of blue beads ended up on St. Eustatius in the first place. As the examples above demonstrate, slave trade beads were mainly used to purchase enslaved in West Africa, but they remained part of ships' cargoes in the New World. The fact that such large quantities are now found on Statia indicates that the ship carrying them may have been involved in the slave trade and had the intention of trading the beads in West Africa at a later date. This is mentioned by Fenger as well, who heard this story from people on the island. It may also be that these beads, all of the same type, were shipped to Statia specifically because they were so commonly used by the island's (enslaved) population. Considering the fact that the cargo was of such homogenous nature, particularly compared to that of the Bermudian debris site, this is a plausible scenario. Whatever the reason is for their presence on Statia, the large numbers of beads found on the sites discussed above indicates that there may still be thousands of beads left on the Blue Bead Wreck site.

Several other areas around the island that are likely to contain shipwrecks were surveyed. The entire area around Boven Hill was surveyed up to 25 meters deep in order to find evidence of the *Duke Compagni*, the seven ships that wrecked here during the Great Hurricane of 1780, or any other vessels that may have shattered against the hill's rocky shoreline. The underwater topography around Boven Hill consists of large boulders forming a steep slope to depths beyond 30 meters. Ships that crashed into the hill's rocky shoreline would have shattered to pieces. These could either be wrecked very close to shore or could have foundered further out to sea. No archaeological remains were encountered during the survey around Boven Hill. Some shipwrecks may have been buried underneath the large boulders that have fallen

off the higher parts and are now littered along the drop off. Even though it was not possible to determine when these large rocks fell down into the sea, the presence of large pebbles among and even op top of these boulders indicates that the erosion of the cliff is a slow process and may have preceded the wrecking events described in the historical record. The fact that no wreckage was found therefore indicates that most ships probably foundered further out to sea.

Bordering the southwestern part of Boven Hill is Jenkins Bay, the landing site of the French invading force in 1781. The story of the French invasion will be discussed in more detail in chapter 6; suffice to note here is that a contemporary drawing of this invasion (Figure 6.3) depicts a relatively large vessel that is being torn apart after crashing into a large rock. The image shows several French troops walking out of the water and five large wooden planks falling off the vessel. According to an eyewitness account, this was the ship of Count Dillon that had shattered against the rocks due to rough seas (Moret 1994:13). It was decided to survey Jenkins Bay in its entirety in order to find any remains of this vessel or any other ships that may have wrecked here. From a mooring in Jenkins Bay located 170 meters from shore, 22 transects were dived from 0 to 210 degrees at 10 degree intervals, covering the entire inner side of the bay. The southern side of the bay comprises a sandy area, while the northern half consists of rocks ranging from small stones a few decimeters in diameter to large boulders several meters across. Another transect was dived at 340 degrees towards the *Twin Sisters* dive site along the outer edge of the rocky sea floor towards the northwest. No archaeological remains were found in the bay, but an anchor was found at *Twin Sisters* just outside of Jenkins Bay. The anchor, number 2, is resting on top of a large rocky outcrop and is completely intact besides the wooden stock that has rotten away. No archaeological remains were found in the anchor's vicinity. It is therefore unlikely that it belonged to the French vessel that wrecked in Jenkins Bay in 1781. Moreover, the drawing places the location of the wreck nearly 500 meters to the southeast of anchor 2.

As several historical accounts mention ships wrecking on the island's leeward side in general and some specifically mention shipwrecks on the southeastern coast, a survey was conducted in the shallow area in and directly north of Kay Bay. Here, the sea floor is characterized by large rocky outcrops, some of which come up to a few decimeters below the surface. Where the outcrops end towards the west, a steep 3 to 5 meter drop leads to a sandy bottom. Directly in front of battery Nassau, a cannon was found at a distance of 85 meters from shore. The cannon, number 1001, is resting on a small sandy patch at a depth of 2 meters, surrounded by rocky plateaus approximately 50 centimeters below the surface. The cannon was too encrusted to determine its age or place of manufacture. No archaeological remains were found in the vicinity. Given the cannon's extremely shallow surroundings, it is unlikely that it was jettisoned by a ship that ran aground, as the draft of a ship carrying artillery was more than 50 centimeters. The cannon could have been part of a wrecked ship, whereby other – lighter – parts of the ship were deposited in other locations such as the deeper waters further to the west. This is not unlikely given the fact that heavy swells and waves can turn this area into a true 'washing machine.' The cannon may also have been thrown off the cliff by people at battery Nassau. Cannon were often discarded when they had become too rusty and therefore not fit for use. Wave action during hurricanes could have moved the cannon further away from shore.

The last area investigated was Tumble Down Dick Bay. This bay was frequented by smugglers, as indicated by the cliff bordering its southern side, which is named *Interlopers Cape*. In 1701, Dominican missionary Jean-Baptiste Labat noted upon arrival to Statia that:

> "As we were approaching this island we saw a ship at anchor to leeward of the fort off a place known as l'Interloppe, because this is the usual spot where these ships anchor, and as a matter of fact, this vessel was an interloper." (Eaden 1970:210)

When anchored close to shore in this sandy bay, ships could conduct their business out of sight from Fort Oranje. At the time Labat visited, independent Dutch slave traders, called *lorredraaijers*, were regularly selling enslaved people directly to French, English, and Spanish ships anchored at Tumble Down Dick Bay. It is not unlikely that due to all this activity close to shore, ships would wreck and shatter against the steep cliffs when a change in the weather occurred.

Four dives were made in Tumble Down Dick Bay as part of a commercial project carried out for NuStar by the author in 2014 (Stelten 2014). The aim of this project was to investigate if there were any archaeological remains, particularly those related to shipwrecks, present in close vicinity to NuStar's jetty or underwater pipes. Several artifacts were found in depressions in the sand around the jetty's central pilings around 500 meters from shore. These included fragments of ceramic and glass and several pieces of animal bone. The artifacts may have originated from anchored ships or even shipwrecks, but as no remains of ships were encountered, this could not be confirmed.

Figure 4.15 The cannon in front of battery Nassau which may be part of a wrecked ship. Photo by Mike Harterink.

The entire sea floor in Tumble Down Dick Bay was found to be composed of a thick layer of sand, so shipwrecks or other archaeological remains may have been buried at the time the survey was carried out.

4.2.3 From sea to shore

The transport and communication component did not end with ships on the road, but also included the harbor area and the island's extensive road network. Many enslaved laborers on St. Eustatius worked in port. Here, one of their main tasks was transporting cargo between ships and shore using canoes, and hauling it up the steep paths connecting Lower and Upper Town. Many small vessels were also used for other purposes that were hard to monitor. In 1790, Governor Pieter Godin issued a law whereby fishing canoes could only be used if there was at least one white person on board, as it was found that these vessels were often used by enslaved people to secretly take criminals off the island and to steal fish from other people's pots. Further measures to curtail these practices were taken two years later. From then on, all canoes had to be numbered and hauled ashore in front of the weighing house, and could not be used between sunset and sunrise (Schiltkamp & Smidt 1979:347). Sometimes there were so many old and discarded canoes on the beach in front of the weighing house that they prevented other canoes from landing there (Schiltkamp & Smidt 1979:325).

In 1834, when slavery was abolished in most of the British Empire, the Governor of St. Eustatius complained about enslaved people escaping to neighbouring English colonies in canoes, particularly to St. Kitts. As there were no penalties on attempts to escape or even successful escapes, it happened time and time again. Two years earlier,

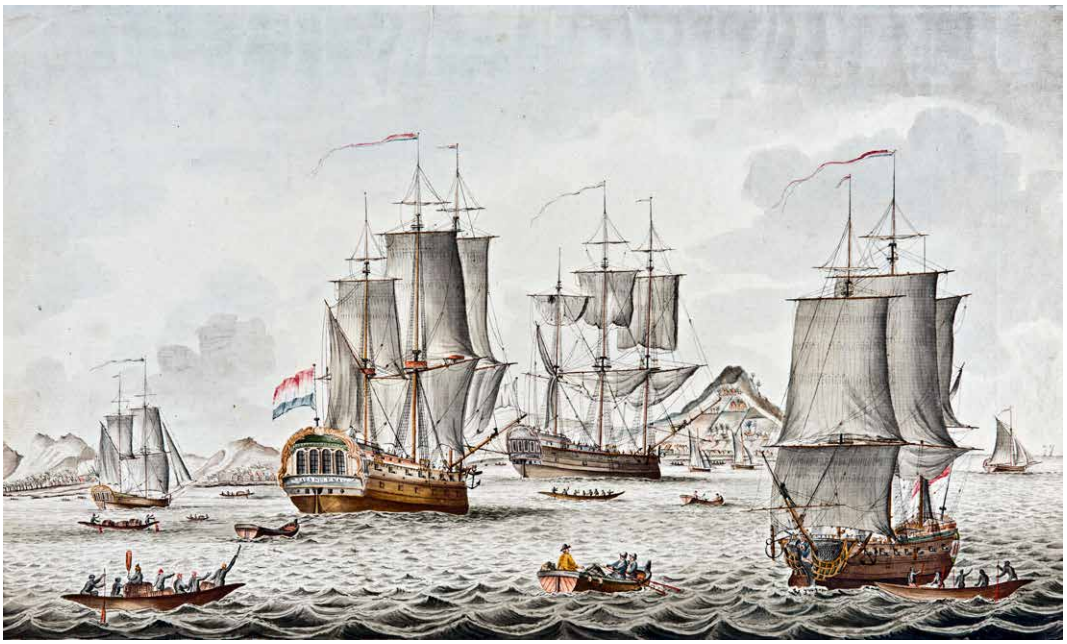


Figure 4.16 Drawing by S. Weuijster depicting slave traders on the roadstead of St. Eustatius in 1763. Goods and people are being transported between ships and the island by enslaved people in canoes. The ships in the foreground are anchored far offshore. Source: Atlas van Stolk collection, 9583, Rotterdam.

a law was passed whereby all canoes had to be attached to a chain and were watched by a guard at night, which made it harder for enslaved people to escape. This would not stop enslaved people from trying, as this resulted in them sneaking into the crater of the Quill and making at least two canoes from trees growing inside. To make matters worse, sometimes people from St. Kitts were actively involved in taking enslaved people from St. Eustatius, which happened at the remote bays out of sight from town (NA 1.05.08.01 – 730).

On many days, goods could not be transported safely between ships and shore due to heavy swells in the surf zone. G.B. Bosch, an early nineteenth-century traveler, described the landing he made on Lower Town's beach, whereby he got drenched in the surf when they approached the shore in a small sloop. Whenever the sea was rough and swells near the beach were high, landing here was not an easy task. During Bosch's stay on the island, the sloop of the captain of the ship he came with even capsized when he was trying to get back to the ship. Undoubtedly, many sloops loaded with goods would share the same fate, whereby their cargo disappeared into the sea. According to Bosch, enslaved laborers were skilled at maneuvering small boats in the swell, but European sailors who were not used to these conditions often experienced difficulties performing this task (Bosch 1829:28). A few years after Bosch's experiences, Kidder provided a colorful account of the landing in Lower Town:

> "In order to land persons or goods in St. Eustatius with safety, boats are built with very sharp keels, long, narrow, and deep. They have, of course, a greater hold in the water, and are not so easily upset as a shallow, flat-bottomed boat would be. […] Boating, porterage, and everything of that kind, is done by either free persons of color, or slaves, who hire out and pay their owners for their time. Now in St. Eustatius there is a gang of boatmen, of strong muscular frames, and such a complete knowledge of the surf, that let the beach be white with the foam of the restless surge, they scarcely ever hesitate to take off or land passengers or goods. […] On the arrival of a vessel on the roadstead of the island, boats are immediately seen pushing off from the sandy beach on the bay, and making towards it. On their arrival along side, which each endeavors to be the first to accomplish, should there be passengers, the usual question, "Want to go ashore, sir?" leads to a regular negotiation. Bargains being made, the passengers get in the boat, and it is shoved off. Each boat has two oarsmen, who are so expert and well trained that they require no helmsman. […] As they draw near the beach […] they cease rowing until a good opportunity offers. […] By common consent, each man comprising the gang of boatmen, if on shore at the time a boat draws near, is bound to come out and stand ready on the beach, to aid in the landing. Thus six, eight, or more of these fellows may be seen ready, in two lines, to seize the boat the instant she is within their reach. At a moment which they judge the most propitious, the men resume their rowing; the boat is now fairly within the influence of the surf; with terrific velocity the surges bear her onwards, and when the passenger, unused to such kinds of landing on foreign shores, imagines that the boat and its crew must of necessity be dashed on the shore, and upset in

> the foaming, roaring surf, the men on the land, the moment the boat is within their grasp, seize the gunwale, and, keeping her upright, walk her up high and dry far above the reach of the next wave." (Kidder 1849:31)

There appear to have been other, less exciting options for small vessels to land as well. In 2014, SECAR students mapped parts of Lower Town's submerged remains in order to gain a better understanding of how the port operated. Several large walls are present in the shallows next to the weighing house, in front of the Waterfort, and approximately 50 meters south of Golden Era Hotel. It was always assumed that these walls were part of warehouse structures, but careful examination resulted in a different interpretation. The walls are 120 centimeters thick – much thicker than the walls that make up the warehouse structures – indicating they were used as protection against the sea. On several historic drawings of Lower Town, square docks are shown at various locations. The thick walls in shallow water are the remains of these docks, which were used by row boats and canoes to load and offload goods for transport between larger ships and the island. According to Janet Schaw, "one half of the town is gained off the sea, which is fenced out by barracadoes" (Schaw 1921:136). The docks are most likely the "barracadoes" mentioned by Schaw. These facilitated easy loading and offloading of goods, while at the same time protecting Lower Town from erosion and destruction by wave action. The locations of these walls mark important areas in Lower Town: on either side of the weighing house in the center of town, and on Lower Town's northern side in front of the Waterfort, where enslaved Africans were offloaded and stored.

There was one road running through Lower Town, which was connected to Upper Town by several steep paths. Teenstra mentioned three: the oldest path going up to Fort Oranje that was paved in 1787, a path to the north leading to Rotterdam battery, and the so-called 'new path' in the southeastern part of Lower Town. The latter, he said, is very steep and hard to climb (Teenstra 1837:327). A map of the island made in 1781 by P.F. Martin shows an additional path at Crooks Castle at Lower Town's southern end. These paths were used by enslaved laborers to transport goods from Lower Town to the rest of the island and vice versa. Most goods were transported on foot or by cart, but as indicated by early twentieth-century photographs, mules and donkeys were used at this time as well. Kidder resumed his account of the landing in Lower Town with a vivid description of the transportation of goods on the island:

> "In a similar manner all articles of importation, of whatever description, are landed; with this difference, however, that when the boat is safely on the beach, out of the reach of the surf, all smaller parcels being lifted out, she is then carefully turned on one side on her beam-ends, and being propped up, larger and heavier things, such as barrels of flour, beef, or pork, puncheons of corn-meal, or boxes of dry goods, are all rolled out upon the dry sand and deposited in the warehouses. But one of the most laborious pieces of work, is to transport heavy articles up or down the zig-zag road previously alluded to. No wheeled carriage or cart, drawn by beasts of burden, can carry a load either up or down so steep a path. Some of the inhabitants will ascend or descend on horseback, but even this others are afraid to risk. The conveyance of all merchandise, then, is performed by manual labor altogether. The pro-

> ductions of the country, such as sugar, rum, molasses, yams, and a few other things, if in barrels or boxes, are lashed to two poles, and four men, with the ends of these poles on their heads, sometimes on their shoulders, for a change, convey them down the beach. If these products of the island are put up in larger vessels, such as hogsheads or puncheons, a little hand-cart called a "truck," – with very heavy axles, four small wheels constructed of one solid piece of the hardest wood, and only a few inches in diameter, and a very long pole, – is used. It is an operation not free from danger to the poor slaves to use these trucks, in conveying down the hill a large cask of sugar of twelve or fifteen hundred pounds. Eight men or more lay hold of this long pole, and cautiously, step by step, let down this little cart with its immense weight over the round paving stones of this precipitous path. Barrels, lashed to poles, are conveyed up the hill on the heads or shoulders of men; and heavier articles, such as corn-meal in puncheons, or large boxes, are rolled up the hill – a long and tedious process." (Kidder 1849:34)

The urban area was connected to the rest of the island by a network of roads and paths which facilitated access to even the most remote parts of the island. These roads were constantly deteriorating and therefore needed regular maintenance, as is evidenced by an ordinance aimed at slave owners to provide enslaved laborers for road repairs, which was issued sixteen times between 1782 and 1815 (Schiltkamp & Smidt 1979:316). Enslaved people thus played a pivotal role in the transport and communication component, from transporting goods to maintaining the main traffic arteries on the island. Given this knowledge, combined with the findings from paragraph 5.1.1. in which the locations of slave housing are discussed, and the fact that trade increased exponentially during the second half of the eighteenth century which caused a fluctuation in the need for port workers, Klooster's statement that "throughout the century […] the majority of them [enslaved people] were put to work on the sugar and cotton plantations" seems an overgeneralization (Klooster 1998:89).

After the collapse of the island's economy, Lower Town remained the place where the import and export of goods took place, albeit on a much smaller scale. In 1829, Governor Van Raders started the construction of a breakwater to protect the weighing house and adjacent beach from rough seas. It was to become 220 meters in length and the total cost was budgeted at 60,000 guilders, which is the equivalent of 627,000 US dollars in today's terms.[22] The plan for this breakwater is preserved in the National Archives in The Hague (NA 4.MIKO 3.A.2.5.2. – 336). The actual construction of the breakwater is shown in the bottom right corner of Figure 4.5. According to Teenstra, the breakwater was never finished due to cutbacks. When he visited the island in 1834, the structure was in a very dilapidated state and had largely washed away (Teenstra 1837:325).

In 1906, a new 45-meter-long, T-shaped pier was constructed in front of the weighing house for the export of cotton, sisal, and trass, a type of pumice from the White Wall area that was used in the production of mortar (Hartog 1976:106). The pier rested on metal posts, had a wooden deck, and a staircase on its southern end. At

22 Calculated using the website http://www.iisg.nl/hpw/calculate.php.

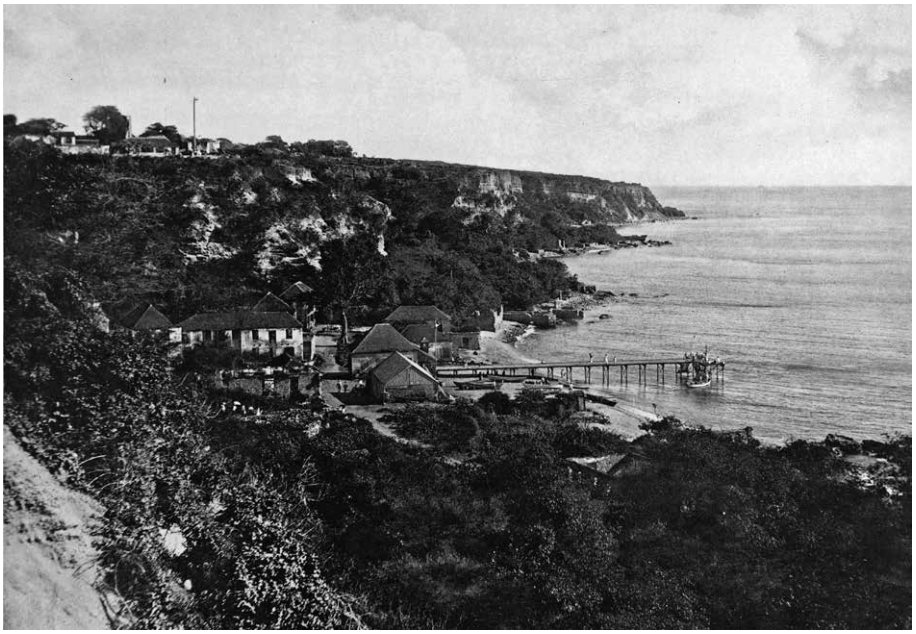


Figure 4.17 The pier and Lower Town in 1910 or shortly after. At this time, the stone docks had already been destroyed by the sea. Source: private collection, St. Eustatius resident.

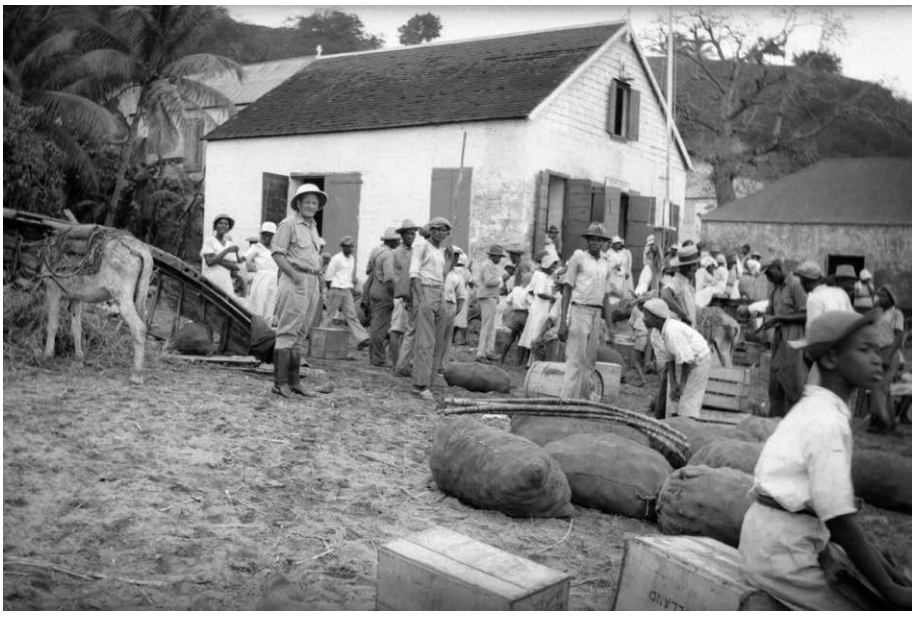


Figure 4.18 People picking up newly arrived goods at the customs office (the old weighing house) in 1928. Photo courtesy of June Bolton.

some point in time it was reinforced with concrete at its base, but the exact year this was done is unknown. The pier made it easier for vessels to load and offload goods as they did not have to go through the swells and onto the beach anymore. The end of the

pier, however, was still fairly close to shore in shallow water, so vessels using the pier were often affected by swells too. To tackle this problem, a 23-meter-long extension of the structure was planned, but this project never came to fruition (Grol 1921:161). The pier fell into disrepair after 1935, when the export of trass came to an end. The area around the old weighing house remained the focus of the island's import and export until well into the twentieth century. This was the place where people came to pick up imported goods. The pier has remained a unique Statian landmark until the present day.

4.2.4 Discussion

The abundance of archaeological remains related to the transport and communication component underscores its prominent role in the maritime cultural landscape of St. Eustatius. The historic anchorage zone, ships, and terrestrial structures were all part of a complex and dynamic system aimed at facilitating the transport of large numbers of people, goods, and ideas in the best way possible. In this section, the findings discussed above will be examined to determine their significance and the role each element played in the transport and communication component of the maritime cultural landscape.

The present research into the size of the roadstead refutes the conclusions of a previous study into this topic. In 1983 and 1984, a survey of Oranje Bay was undertaken by the Institute of Archaeology and Anthropology of the Netherlands Antilles (AAINA) and the College of William & Mary in order to gather information about the size and location of the historical anchorage (Nagelkerken 1985). Besides a visual survey, artifacts were collected that provided information on the nature and uses of the harbor area. Surveys and artifact collection were conducted using two lines running perpendicular to the shoreline, one measuring 400 meters, the other 300 meters. After each side of the line was surveyed to a distance of 10 m from the line and artifacts were collected and documented, the lines were moved 50 to 100 meters further in a northern direction parallel to the previous transect. This was done nine times (eighteen transects) during the 1983 campaign, and seventeen times (34 transects) in 1984. An area of 1,200 meters long and 600 meters wide was surveyed in this way. Artifacts found included glass wine and gin bottles, ceramic bowls and plates, clay tobacco pipes, muskets, shoe buckles, cutlery, furniture handles, candle holders, tankards, chisels, axes, hinges, locks, and keys. It was determined that five or more artifacts per transect mark the main historic anchorage. The width of the anchorage was defined by determining the point where a minimum of ten artifacts per given distance from shore were found. This was done for four different areas along the shore. The main historic anchorage was determined to be around 900 meters long and located in a zone between 500 and 900 meters from shore on a central bearing of about 60° from the Dutch Reformed Church. The width was found to be greatest in front of Fort Oranje (325 meters), and narrowest in front of the King's Well (50 meters). It was concluded that the greatest activity of ships could be found in front of Fort Oranje and the Dutch Reformed Church with a gradual slow decrease in activity in northwestern direction and a quick one in southeastern direction (Nagelkerken 1985:40).

The researchers of the above-mentioned study based their conclusions on the assumption that the absence or low concentration of artifacts is an indicator of the absence of anchorage zones. The area where the densest concentration of artifacts was

found, between 500 and 900 meters from shore, was marked as the main anchorage. It seems reasonable to assume – as researchers did in the 1980s – that artifacts on the sea floor reflect the actions of sailors discarding them. In other words, the more artifacts present at a certain location, the more artifacts were thrown overboard, and thus the more ships anchored there. This theory, however, is based on the principle that the current distribution of archaeological material is similar to that in the past. The author has made over 400 dives in the waters of St. Eustatius, many of which were done in the area surveyed in the 1980s. The sea floor in this area – and in many other places around the island – was found to be extremely dynamic. Every year around March and April, swells move sand from deeper waters to shore, thereby extending and widening the beaches. During hurricane season from August to November, much if not all of this beach sand is taken away by storm surges and deposited in deeper waters again. The depth of certain areas can thus change several meters after a hurricane due to large amounts of sediment being moved. It is not only sand that is moved; small artifacts are moved around relatively easily as well. A wave's strength and impact – its ability to move water molecules – decreases with depth (Richardson 2008:2-29). This means that the relatively small and light sand particles will be eroded and deposited by a wave at greater depths than relatively heavy artifacts will. Sand particles can stay in suspension even if the wave strength at depth is minimal, but the same wave strength is not sufficient to keep artifacts in suspension. This results in artifacts and other types of heavy sediment being eroded and deposited in particular areas or depth ranges. The distribution of artifacts on the sea floor is therefore much more the result of natural erosion and sedimentation processes than it is a reflection of the location and size of the main historic anchorage area as indicated by past human activities. Even though artifacts were undoubtedly thrown overboard by sailors, given the above, it is likely that many artifacts found in the area that was designated as the main anchorage zone in the 1980s were not discarded by sailors at all; they may have been discarded by people on shore and moved to deeper waters by wave action. The nature of the landing on Lower Town's beaches, as described above, also contributed to artifacts ending up in the sea.

From the above it follows that artifact densities cannot be used to determine the location and size of the road. The only way to accurately determine the size and extent of the roadstead is by combining the results of the three analyses used in this study: contemporary accounts of anchoring depths and ideal anchoring locations, the composition of the sea floor, and the distribution of lost anchors. The maximum depth of the area designated by the researchers in the 1980s as the main historic anchorage, at 900 meters from shore, is 20 meters or 11 fathoms. As shown above, the documentary record contains many accounts indicating that a large part of Statia's anchorage was located further offshore in deeper waters, and was thus much larger than previously thought. The distribution of lost anchors corroborates the findings from the documentary record. Many anchors were found at the anchoring depths described in ship logs, on maps, and in traveler's accounts. The fact that these anchors were lost at these locations indicates that ships dropped their anchors in the vicinity.

It is, however, too simplistic to use anchor distribution as the only variable in determining the size of the road. Another important variable is the composition of the sea floor, which was a determining factor in deciding where to anchor. The composition of the sea floor was found to be sandy around most anomalies that were investigated,

indicating that good anchoring grounds existed around the coral reefs and rocky outcrops that anchors got hooked on. Based on the results and observations from the side scan sonar and diving surveys, areas were marked as good, reasonable, or bad anchorage zones depending on the composition of the sea floor.[23] This information, combined with the anchor distribution and documentary evidence – such as anchoring depths – discussed above, was used to determine the extent of the road. These findings are presented in Appendix V. The total area of the anchorage zone was approximately 4.2 km^2. It measured 2.5 kilometers at its widest points on a northwest – southeast axis. The westernmost tip was 2.5 kilometers from shore. This information has important implications for various aspects of the maritime cultural landscape, which will be discussed in the section dealing with safety on the road in Chapter 6. Taking into consideration that there could be up to 200 ships in port during Statia's economic boom, this area would have been of sufficient size to accommodate all these vessels. With 200 ships at anchor in this area, the average space for a vessel was 21,000 m^2, which is a little over two hectares.[24] Several anchors were found in locations other than the road, such as Corre Corre Bay and Jenkins Bay. These remote bays, out of sight from town, were ideal for carrying out smuggling activities at times when the colonial administration tried to curtail these practices. Anchors 2 and 31 may have come from ships involved in the illicit trade, although this is impossible to confirm.

The anchor is the most numerous type of artifact found during the survey of the road. One important issue that warrants discussion is how and why anchors ended up on their present locations. The documentary record holds some answers to these questions. Several eighteenth- and nineteenth-century visitors noted that Statia's road was dangerous during hurricane season, as it was too exposed (Dieterich 1798:272; Teenstra 1837:324). A sudden change in the weather therefore meant that ships could not find refuge in a protected harbor but had to move to open water quickly in order to avoid being driven ashore. The sudden appearance of strong gusts of wind may have caused ships to drag their anchors, causing them to be buried deeper into the sea floor. In this situation, weighing the anchor would have been a lengthy, if not impossible task. The quickest way to start moving was to simply cut the anchor cable and sail away. A lost anchor was a small price to pay given the likelihood of being dashed to pieces on the island's rocky shores. Another reason why many anchors were lost was because of the underwater topography, which exhibits many reefs containing cracks in which anchors could easily get stuck. When an anchor was thrown overboard, the movement of the ship dragged it along a sandy bottom causing the anchor to bury itself. Sometimes, when the anchor was being dragged, it would encounter such a reef. Once stuck, it could be very difficult to free an anchor, particularly during strong

23 Sandy areas are perfect for anchoring, while areas containing many rocks, reefs, or rocky outcrops are unsuitable as these do not allow an anchor to bury itself. Areas designated as reasonable are those that were sandy but contained some rocks and/or rocky outcrops. It should be noted that, particularly in shallow areas close to shore, sand is moved around by wave action each year, which may change the designation. A good anchorage area in October may be a bad anchorage area in April.

24 It should be noted that De Jong's estimate of 200 anchored ships is most likely not representative for the entire period of Statia's economic boom during the latter four decades of the eighteenth century. According to the 1787 shipping records discussed in paragraph 7.4.1, 2,755 ships dropped anchor on Statia's road in that year, an average of 7.5 ships per day. Most ships only stayed for one or a few days, meaning that there were on average per day perhaps no more than a couple dozen ships in port in 1787.

winds and storms. A rocky composition of the sea floor could cause ships to lose an anchor as well. The captain of the *Middelburgs Welvaren* commented that on the day before her return voyage, an anchor rope snapped, but they were still able to weigh the anchor with another rope. Apparently the rope had scraped too much on the rocks or a loose anchor on the sea floor, causing it to break (NL-MdbZA_20_787, folio 63). Not just environmental conditions played a role in losing an anchor, sometimes this was caused by human errors as well. In 1761, Captain Bylandt described an unfortunate situation in the log of the Dutch warship *Maarssen* (NA 1.01.47.17 – 48, folio 81). The *Maarssen* had planned to depart St. Eustatius with a number of other ships and sail back to Europe in convoy. As several ships weighed their anchors simultaneously, one ship came too close to the *Maarssen* and almost crashed into her. To prevent a crash, the *Maarssen* needed to move away so Captain Bylandt ordered more rope to be added to his anchor. The extra movement this generated to his ship caused its anchor to become detached from the sea floor and the *Maarssen* to crash into the bow of another ship that lay just downwind from her. In order to become detached, the other ship had to cut its anchor rope, thereby losing an anchor.

Previous research by the author in 2010, during which twelve *in situ* anchors were located and documented on popular dive sites, demonstrated a high correlation between anchors and coral reefs. Most anchors were found in, on, or near reefs where they got stuck and could not be weighed. The main goal of the present survey was to investigate all those reefs that had never been dived before and were located within practical diving depths. As is shown in Appendix IV, a total of 41 anchors were found around the island, 29 of which were discovered during the survey presented here. In addition, at least four more anchors, known by local fishermen and marine park rangers, could not be located. Most anchors are located on, in, or near reefs, the only exceptions being anchors 17, 35, 36, and 43, which are located on a sandy bottom with no reef in the immediate vicinity. With 90 percent of all anchors associated with reefs, it is clear that the main reason for losing an anchor on Statia's road was by getting hooked onto these structures which made it difficult and sometimes even impossible to weigh the anchor. This information is extremely useful as it can be used to predict anchor concentrations on other islands. The four anchors that are located in the sand may have been cut loose as ships were quickly trying to get away due to bad weather, or ended up here due to human errors like the one described in the *Maarssen*'s log.

The places of manufacture for several anchors found during this investigation could be determined, but it was extremely difficult to assign the majority to a particular nation or ship. The reason for this is the many similarities between anchors manufactured in different countries. Differences are usually very subtle, and often not apparent on anchors that are partly buried or completely overgrown with corals and sponges. Even when an identification can be made, information on an anchor's origin does not necessarily provide any information on activities in Statia's surrounding waters. For example, prior to the United States' independence, the North Americans imported all their anchors from Great Britain. They were exported by merchants such as Englishman Ralph Carr, who established a successful trade with the North American colonies. In the mid-eighteenth century he shipped so-called 'ballast commodities' – among which were anchors – used to fill partially laden vessels on the westbound voyage from Newcastle to New York and Boston (Stelten 2010:31). This example demonstrates that

it is impossible to determine whether an eighteenth-century English anchor found on the bottom of the sea signifies the presence of an English or a North American ship.

The situation can be even more complicated, as shown by the example of the *Sancta Barbera* in Chapter 6. The *Sancta Barbera* had been under Dutch command, was captured by a British privateer off Nevis, and sold in St. Kitts to a Spanish captain. It was flying the Spanish flag, but the ship still bore its original name *Maria Christina* on the back. This example shows that a ship was not necessarily Dutch, British, or Spanish – it could change hands frequently and new owners each left their mark on it. If this ship had lost an anchor, it might have been a Dutch one, if one or all of its anchors had not already been replaced throughout her lifespan.[25] However, the loss of a Dutch anchor, which enters the archaeological record, does not at all signify the presence of Dutch people or even a Dutch ship. While the ship in question was made in the Netherlands, its activities were not reflected in the lost anchor as it had changed hands several times. If one of its anchors had been replaced by an English anchor in St. Kitts, and this anchor was lost on Statia's road, its country of manufacture would equally provide no information on the complex life of the ship. Thus, the presence of, for example, a Dutch anchor, does not necessarily signify the presence of a Dutch ship or Dutch people. For this reason, the origins of the Statian anchors cannot be used to determine the origins of the ships anchoring on its road and the shipping activities that were taking place here. Any attempt in trying to do so will most likely result in misleading interpretations. Therefore, this information is not included in the analysis.

The size of an anchor reflected its use. Generally speaking, smaller anchors, called *kedgers*, were used in calm weather. *Stream anchors* were a little larger, and used in light currents. The largest anchors, called *bowers*, were used during rougher conditions. No correlation between anchor size and location was discerned from the available evidence. Anchors of varying sizes are distributed randomly. This is to be expected given the exposed nature of the road. There is not necessarily much difference in sea conditions between areas that are close to shore and those that are further away. Moreover, conditions could be extremely variable: one day it could be very calm, while the next there could be a hurricane passing through. Ships were therefore not always using the same anchors in the same areas, resulting in a random distribution of anchors on the roadstead.

The documentary record provides numerous examples of shipwrecks around St. Eustatius. It was expected that these would be more conspicuous in the underwater archaeological record. This seems, however, not to be the case. Four wreck sites were encountered and studied during the 1980s field seasons. In addition, one more shipwreck location – that of the Blue Bead Wreck – was identified during the present survey. The cannon in front of battery Nassau may have ended up here due to wrecking events, but this could not be confirmed. It was expected that many more remains were to be found along the northern shores of the island. The reason for the relative lack of shipwreck sites around the island in general can be attributed to several factors. First, the

25 Evidence of a ship replacing lost anchors with those of a different country of manufacture is found in a letter from the captain of the *Princes Royal Frederique Sophie Wilhelmine* to his superiors. In it, he mentions that another ship lost two of its anchors, and that he will try to get a new one at Martinique or Antigua. It is unlikely that there was a supply of Dutch anchors on those islands, so the replacement anchor was almost certainly of French or English manufacture.

ever-changing sea floor can obscure shipwreck sites. During certain times of the year, large amounts of sand are moved from the beaches and shallow water to deeper waters, and vice versa. This sand can be several meters thick, and can easily bury archaeological sites. The absence of shipwreck remains on the sea floor does therefore not necessarily mean that they are not present. Second, after a wrecking event, many parts of a vessel were usually salvaged. As many ships calling at St. Eustatius required repairs performed by shipyards on the island, items such as masts, spars, rigging, metal fittings, anchors, and cables were very useful. Particularly those ships that wrecked close to shore in shallow waters would have been stripped of many of its constituent parts. Third, ships crashing into shore may have drifted to deeper water, where they eventually foundered. It is not unlikely that shipwreck remains may be located at greater depths that could not be investigated.

The study of shipwrecks on St. Eustatius has thus far not provided any indications of the types of ships that were wrecked or even attempted to determine what types of vessels were coming to the island. More research, in the form of large-scale excavations, needs to be conducted to determine which ship types made their way into the archaeological record. Nevertheless, as documentary evidence about ship types abounds, some general observations about ship types on Statia's roadstead can be made. Many different types of ships frequented the island. The Bermuda sloop was a type of ship regularly found on the roadstead. Bermuda sloops were one-masted, fore-and-aft rigged vessels which, as their name suggests, were developed and built in Bermuda from the seventeenth century onwards. They are frequently depicted on eighteenth-century drawings of the road. These fast, lightweight ships were relatively easy to maneuver upwind, and were mostly used in the inter-island trade or *kleine vaart* and as privateering vessels. Trading activities of Bermudian sloops were characterized by opportunistic voyages within a very irregular pattern. In one journey, they could sail to several different North American and Caribbean ports to buy and sell whatever goods local market conditions dictated. The type of ship frequently used by the Dutch to transport enslaved Africans to St. Eustatius was the snow, a fast, two-masted ship that was employed in both navy and merchant service from the seventeenth century onwards. Interestingly, frigates – fast-sailing and relatively small warships – often called at St. Eustatius with a cargo of enslaved Africans as well. In eighteenth-century ship logs, frequent mention is also made of large ships calling at Statia, such as the barque and the barquentine. Dutch men-of-war also visited St. Eustatius, such as the *Maarssen,* the *Princes Royal Frederique Sophie Wilhelmine*, and the *Mars*. French and British men-of-war did so too, particularly in times of war and when the island was about to change hands once again.

Despite the shortcomings outlined above, the research into shipwrecks and the road has provided many useful insights into maritime activities around St. Eustatius and the potential for future research. First, as most ships probably wrecked against the island's rocky shorelines and shattered to pieces, the greatest potential for shipwreck research lies in those ships that foundered on the roadstead. These vessels and their cargoes still form coherent sites. Some shipwrecks even contain wooden remains. Second, their cargoes provides unique insights into goods traded on the island. For example, blue beads were shipped to St. Eustatius in large quantities, probably by the tens of thousands. While the exact role(s) these enigmatic objects played in Statian society are not very well understood, it is clear that they were very prominent given the large numbers of

beads found at the wreck site associated with them and on virtually all terrestrial sites investigated on Statia thus far. Third, the anchor survey combined with documentary information has enabled the creation of an accurate map of the roadstead that for the first time depicts where thousands of sailors lived their lives. This map can form the basis for an underwater predictive model that will be a first step in the management of Statia's underwater cultural heritage. The survey information can be used to determine areas with low, medium, and high expectancy for archaeological remains, which will be an important tool in managing archaeological sites and even the underwater archaeological landscape as a whole. Its use can be expanded beyond the waters of St. Eustatius, as it can be utilized to predict the locations of archaeological sites and artifacts on other islands as well. Last, this research has provided a new methodology for analyzing historical anchorage areas. Only by studying archaeological remains in conjunction with the documentary record, the natural landscape, and geomorphological processes can the size, location, and extent of a roadstead be fully investigated.

4.3 The resource component

The resource component involves the resources necessary to sustain an insular population. It includes foodstuffs grown and collected locally and a variety of imported products that could not be acquired on the island itself. This component played a key role in Statia's economic development. It will be argued that without a well-developed resource component, the island could not have become such an important player in the Atlantic and Caribbean trading networks. At the height of its prosperity in the late eighteenth century, there were almost 9,000 mouths to feed, not including the thousands of sailors that were present on the island at any given time. Ensuring an adequate supply of food, water, and other necessities of life on a small island was a constant challenge, but one that needed to be overcome for Statia's community to exist and have a chance of succeeding on the world stage.

4.3.1 Water supply

Compared to neighboring islands such as St. Kitts, a large part of St. Eustatius is very dry. During hurricane season, however, there is generally much more rainfall than during the first eight months of the year. The long dry season coupled with a lack of running water meant that maintaining an adequate water supply was not as easy for people on St. Eustatius as it was for those on nearby islands like St. Kitts. On Statia, water was obtained in three ways: collecting rain water in cisterns, obtaining ground water from wells, and importing water from other islands.

There are countless cisterns spread across the island. As Upper Town was the main residential area, most cisterns are found here, but a significant area of Lower Town was dedicated to the collection and storage of rain water as well. During a survey in Lower Town, the author recorded a total of seventeen cisterns, but there are undoubtedly more to be found beneath the eroded sediment from the cliffs. The large number of cisterns and three wells in Lower Town indicates that maintaining an adequate water supply was a very important aspect of life in this part of the island. Not only did the local population collect water for themselves, they also supplied tens of thousands of sailors calling at St. Eustatius each year. On a dry island like Statia, ensuring that every

drop of rain was collected was thus very important and much-needed warehouse space in Lower Town was reserved for cisterns and wells.

Urban areas were not the only places where large numbers of cisterns were built; many are found in the countryside as well. Most estates had several cisterns of varying sizes. During a survey conducted by the author on Steward Plantation, three differently-sized cisterns were found within 150 meters of each other (Stelten 2012). One of these contained a drinking trough for animals. Most cisterns on the island were fed by rainwater collected on the roofs of nearby buildings. However, one cistern at Steward Plantation was not located beside a roofed structure but was instead fed by a plastered catchment basin at ground level. While some cisterns could only hold a few thousand liters of water, one cistern found by the author near Benners Plantation could hold a staggering 29,000 liters.

A total of twenty historic wells dot the Statian landscape, but because these have never been dated, it is unknown if these were all in use simultaneously. Many are located on larger estates such as Golden Rock, Concordia, English Quarter, and Fair Play. Because of their large size, these plantations employed more people than their smaller counterparts. A larger employee base meant more mouths to feed, requiring more land dedicated to provisioning grounds and more water for irrigation. Besides people and crops, animals that were used in the sugar production process – for example those used to power the mills that crushed the cane – also needed water. The presence of animal troughs around many wells on Statia indicates that they were important in providing water to cattle and other farm animals.

Only two short accounts provide historical data on the quality of ground water. One is from Daniel Rolander, a Swede who visited the island in 1756 and commented on the water from one of the wells:

> "Its water was cold, potable and without salt. Many ships put in at the island for its sake. We also bought its water, although I do not remember what was paid for a barrel of the water. Clearly the island made a good amount of money from this well." (Dobreff et al. 2008:343)

The other account dates to 1819 and was written by Governor Johannes de Veer, who states that the water from the wells was mostly brackish (De Hullu 1913:431). It was consumed by cattle and sometimes by enslaved people as well. He does not mention free people using water from the wells. Recent studies into ground water geochemistry of St. Eustatius has indicated that the water from several wells in the interior of the island is composed of rain water that has filtered into the volcano's superstructure (Roobol & Smith 2004:257). Several other wells, such as those at Crook's Castle and Lynch, are located less than 50 meters from the sea. These most likely produced brackish water of inferior quality.

During the dry season, water was sometimes imported from St. Kitts, where several streams ensured a more reliable source of water (Teenstra 1837:323). Many ships on the road sent smaller vessels to St. Kitts to get water as well. There were exceptions, such as the frigate *Middelburgs Welvaren* and the *Maarssen* (NL-MdbZA_20_787, folio 61-63; NA 1.01.47.17 – 48, folio 63-81). The *Maarssen*'s captain was concerned about pirates and privateers sailing between Statia and St. Kitts who might capture his vessel

while getting water. Despite the fact that it was the end of hurricane season and there was plenty of water on the island, at six reales per hogshead, water was nonetheless very expensive on Statia. Because of the aforementioned security concerns, Statian water was the preferred choice for the *Maarssen*. The *Princes Royal Frederique Sophie Wilhelmine* got most of her water from Old Road in St. Kitts, but also took in water from a well, presumably on St. Eustatius (NA 1.01.46 – 2417, folio 135-169).

4.3.2 Provisioning grounds

The importance of provisioning grounds for the economic success of St. Eustatius cannot be overstated. Even though enslaved laborers were provided with rations by their masters, these were often supplemented by food grown, collected, or caught by themselves. Enslaved laborers cultivated a variety of fruits, vegetables and root crops in provisioning grounds near their living quarters. A 1701 proclamation stated that all plantations had to be prepared for planting sugar cane, cassava, potatoes, and other fruits within three years to avoid confiscation (Schiltkamp & Smidt 1979:279). Besides enslaved people, poor whites and free people of color were also producing their own food. In town there were small gardens behind people's houses, where food was grown on a very small scale for private consumption or to be sold in the streets or at the market, which was located at the site of present-day Wilhelmina Park.

The total land area in possession of planters in the 1830s was 1059 hectares, of which 332 hectares was dedicated to sugar cane and 61 hectares to provisioning grounds. Based on cartographic evidence, Gilmore calculated that on average, 22 percent of each plantation on St. Eustatius was dedicated to provisioning grounds in 1781 (Gilmore 2004:169). This is slightly higher than in the 1830s, which is to be expected given that, during this time, there were far fewer mouths to feed than half a century earlier.

Figure 4.19 The only known historic drawing of a Statian sugar plantation and provisioning grounds, dating to 1761. In the foregrounds coconut trees, pineapples, and root crops are depicted. Source: Nederlands Scheepvaartmuseum Amsterdam, no. A.1710 (03).

Eighteenth- and nineteenth-century visitors commented on the vast quantities of yams produced on the island, which had a reputation for being the best in the West Indies (Teenstra 1837:350). Statian pineapples were also regarded as the best in the Caribbean. Other crops that were grown included sweet potato, maize, cassava, and various herbs and vegetables (Teenstra 1837:350).[26] Fruit trees that are common on the island today are tamarind, coconut, guava, mango, breadfruit and orange. Some, if not all of these were certainly exploited by enslaved people as well. Zimmerman noted that lemon, orange, coconut, and banana trees were found around people's houses to provide shade (NA 3.01.26 – 161).

In 2012 and 2013, the author excavated a slave quarters on Schotsenhoek plantation. The results of this investigation provide some insight into enslaved peoples' subsistence strategies. A grinding stone found in a feature that marked a corner post of one of the huts indicates that enslaved people were most likely preparing their own food in this settlement (Stelten 2015:298). The grinding stone could have been used in the processing of cassava or maize. Provisions grown by the enslaved people were probably located immediately north of the settlement, marked by a row of posts indicating a fence that may have been used to protect the crops from being eaten by roaming animals.

Not all locally-produced food, however, was grown on provisioning grounds or near the house. Teenstra described the lush vegetation he encountered on his hike into the Quill's crater: "Everywhere one can see banana trees, nice cacao and coffee beans, soursop, and many others" (Teenstra 1837:336). Four decades earlier, Zimmerman visited the crater and noted seeing grapes, large water melons, papaya, oranges, coconuts, lemons, figs, and many other fruits unknown to him. It seems that the crater housed an abundance of food, so it is likely that people frequently hiked up and in the mountain to collect it.

The large variety of crops grown in provisioning grounds and available in nature ensured a healthy diet among the island's population which increased life expectancy and productivity among the enslaved work force. This made the difficult lives that many enslaved laborers led a little more bearable. Osteological research at Galways Plantation on Montserrat, where extensive provisioning grounds were also present, has indicated that slaves there did not suffer the nutritional stress that has been shown for enslaved people in Caribbean environments where gardening was restricted due to climatic conditions or repressive plantation management (Pulsipher 1990:27).

4.3.3 Fishing

Besides provisioning grounds, enslaved people supplemented their diets – and the diets of others – by fishing. They used canoes for this purpose, which were beached at Lower Town. Stealing fish from other people's pots was a common practice among

26 Growing up on a farm in the Netherlands, and eventually buying one himself, Teenstra might have been particularly interested in Statia's agriculture; in his work this topic is described in detail. Early on in his career, Teenstra traveled to South Africa and Java, and worked as a superintendent for construction projects in Surinam. In these locations, he experienced the horrors of slavery and developed a strong aversion against it which he voiced publicly. This might have biased his writings. Nevertheless, the view that emerges from his work is that there was plenty of food available on St. Eustatius, even for the enslaved population.

Figure 4.20 A 265 kg leatherback turtle that was caught at Zeelandia in 1932 when she came up to the beach to lay eggs. She was brought into town by donkey cart and butchered a few days later. Source: SECAR collection.

enslaved people (Schiltkamp & Smidt 1979:340). Turtle was heavily exploited by enslaved people on St. Eustatius and even exported throughout the colonial period (Gilmore 2004:170). One bay on the east coast of the island was, and still is called Turtle Bay, hinting at the significance of this resource. This bay exhibits a wide beach, which is used by turtles to lay eggs. Coming up to the beach at night, they would have been easy prey and once caught, provided ample food.[27] Zimmerman remarked on the excellent quality of fish, and turtle in particular. While turtle meat was consumed by enslaved people on St. Eustatius and throughout the Caribbean, visitors to the island consumed turtle as well; ship doctor Joannes Veltkamp reports having eaten it in 1761 (Baars 2014).

In the nineteenth century, fishing on Statia was practiced on a smaller scale than it was on other islands. According to Teenstra, a lot of fish were poisoned, which resulted in many deaths. Therefore, most fish was imported from elsewhere (Teenstra 1837:359). Teenstra was most likely referring to ciguatera poisoning, which still occurs in predatory fish around St. Eustatius, Saba (including the Saba Bank) and St. Kitts such as barracuda (*Sphyraena barracuda*), grouper (*Mycteroperca spp*) and red snapper (*Lutjanus campechanus*). Cornelius de Jong, who mentioned that sailors spent large amounts of time on fishing, reported a case of ciguatera poisoning after eating two freshly caught fish. Within three hours after consumption, the crew became extremely sick and it took over a week for them to recover (De Jong 1807:174).

A six centimeter long fish hook, found in a ditch in the northwestern part of the Schotsenhoek slave quarters excavation, provides archaeological evidence of fishing by the enslaved population at Schotsenhoek (Stelten 2015:298). They most likely fished

27 Leatherback turtles that nest on this beach can weigh up to 500 kg.

for pelagic species such as tuna (*Thunnus spp*) and wahoo (*Acanthocybium solandri*) that are not affected by ciguatera poisoning. An ordinance from 1783 specifies the prices of certain types of fish that were caught and sold locally, including scad (*Selar crumenophthalmus*) and jacks (*Caranx latus* & *Caranx ruber*) (Schiltkamp & Smidt 1979:320). Herbivorous reef fish such as parrot fish (*Sparisoma viride*) were also part of the local diet; parrot fish bones were found in excavations on Pleasures Estate by Gilmore (Gilmore 2004:168). Many fragments of West Indian top shell (*Cittarium pica*) were also encountered in the Schotsenhoek excavation, indicating that this was an important part of the diet. Given the large numbers of queen conch (*Lobatus gigas*) present in the waters around the island, this resource was most likely exploited by enslaved people as well (Gilmore 2004:168). On many islands, conch shells were also used as musical instruments and means of communication, for example to produce a wakeup call before starting work.

4.3.4 Animal husbandry

St. Eustatius has housed farm animals ever since its first Dutch settlement. As was the case with every other food resource on the island, farm animals were used to feed the white elite and the hungry population of enslaved laborers. Cattle, poultry, and other animals were frequently stolen by enslaved people and sold to people of all classes, but some livestock was undoubtedly kept for their own consumption (Schiltkamp & Smidt 1979:339,439,442). Besides being used for meat, some cattle also produced milk which was used to make butter.

At the turn of the nineteenth century, pigs were roaming freely around the island, even in town. Eleven plantations had been converted into cattle ranches by the 1830s. Statians could choose from a variety of meats. Teenstra noted that the island housed 132 horses, 130 mules, 90 donkeys, 302 head of cattle, 91 calves, 570 sheep, 52 goats, and 55 pigs (Teenstra 1837:350). Chickens were not listed, but these were probably found all over the island. Numbers of livestock increased slowly during the nineteenth

Figure 4.21 Harvesting yams in the Statian countryside in 1928. Source: SECAR collection.

century. It is unknown how many farm animals were present on the island during the eighteenth century. Considering the much higher population numbers compared to the nineteenth century, one would expect more livestock to have been present in the preceding century. This might not have been the case, however, as meat was also imported and the plantations that were converted into cattle ranches in the nineteenth century were producing sugar in the 1700s (NA 4.MIKO 3.A.2.5.1. – 645). It is therefore unlikely that ships were supplied with large quantities of local meat at the height of the island's prosperity.

4.3.5 Imports

Travelers' accounts indicate that a wide variety of fruits, vegetables, root crops, meat, and fish was available on St. Eustatius (Teenstra 1837; NA 3.01.26 – 161). This was, however, not enough to feed the island's entire population and all sailors visiting the island each year. Zimmerman noted that food was imported from St. Maarten, St. Kitts, and Saba (NA 3.01.26 – 161). Eighteenth-century shipping records show large quantities of food being imported from all over the Atlantic World: corn, flour, rusk, and bread from Maryland and Philadelphia; butter from St. Kitts; herring from Nevis, Guadeloupe, Virginia, and New York; mackerel from Baltimore, Virginia, New York, and Martinique; potatoes from New Haven; peas from Virginia, beans from Grenada; bacon from St. Maarten, Philadelphia, and Baltimore; salt from Curaçao and St. Maarten; fish from St. Lucia, Martinique, Tobago, and Bedford; and meat from Trinidad and Guadeloupe (NA 1.05.01.02 – 1330, folio 2965-3771). It is not clear how much of this was consumed locally and how much was transshipped, but considering that Statia had a large population in the second half of eighteenth century, a significant percentage of all imports was probably consumed on the island.

Large quantities of flour were imported from North America. The bread that was made with it was considered by Zimmerman to be better than that in Europe. It was baked in stone ovens, of which 87 were recorded in Upper Town, Jeems, Golden Rock, and Concordia during a survey in the 1980s (Monteiro 1990). The two additional possible stone ovens found by the author in Lower Town may have been used to bake bread on the waterfront in order to facilitate quick delivery to merchants and sailors working in the area.

Despite the wealth and variety of food on the island during most periods, the Statian government dealt with intermittent periods of food scarcity by imposing bans on the export of food products. This happened at least three times, in 1793, 1799, and 1804. During another period of food scarcity in 1801, a tax was levied on the export of yams (Schiltkamp & Smidt 1979:384). Seven years later, the export of yams was allowed again, but strictly regulated. There were several reasons for the fluctuations in the island's food supply. First, periods of drought may have reduced the quantity and quality of locally-produced food. Second, fluctuations in the island's economy could have caused food imports to decline and food exports to increase. It is no coincidence that measures were taken to curb the export of yams in 1801, shortly after the island lost its significance in the regional and transatlantic trade networks.

4.4 Conclusions

This chapter has provided a detailed insight into the economic components so central to Statia's success. While historical research has informed us about the nature, scale, and significance of the island's economy and trade networks (the *why*), this multidisciplinary approach adopted in this chapter has sought to outline *how* this was made possible by the Statian community locally.

The commercial component contains elements that the island historically is most famous for. Countless warehouses, shops, shipyards, and even a weighing house and slave depot facilitated commerce and attracted people from all over the world. While much of this history has been explored through documentary research, archaeological data has provided many new insights into specific uses of Lower Town, the island's commercial heart. Trading activities on St. Eustatius did not only involve legal commerce; a large part – if not the majority – of trade was conducted illegally. Sugar plantations on St. Eustatius were unlike those on other islands, in that the cultivation of sugar cane was not their primary purpose. They were mainly used to grow provisions to feed the island's increasing population and visitors, while at the same time being utilized to refine illegally-imported sugar from other islands.

The transport and communication component is perhaps the most extensive component of the maritime cultural landscape of St. Eustatius. By combining archaeological and historical data, it has been possible to produce a precise map of the historical anchorage zone or roadstead, which was found to be much larger than previously thought. Its large size was necessitated by the fact that hundreds of ships could be at anchor here simultaneously. While many ships visited without any problems, others had difficulty maneuvering in such a large anchorage and sometimes lost their anchors due to rocky sea floor topography. Anchors themselves are a reflection of the size and locations of historical anchorages, but due to several factors, their use in studying trading activities is problematic at best. They do indicate that ships not only anchored on the roadstead but also in remote bays such as Corre Corre Bay and Jenkins Bay, most likely to partake in smuggling activities.

Historical accounts of shipwrecks in St. Eustatius' surrounding waters abound, and to date, five shipwreck sites have been discovered. These provide some preliminary insights into the material reflection of maritime trading activities and the cargoes of these vessels. One shipwreck was even identified just by its cargo of blue beads and a historical account. Given the fact that many vessels were lost in hurricanes, many more shipwrecks are undoubtedly present around the island. Due to the constant movement of large amounts of sediment, some of these may be buried. To complicate matters even further, some wrecks may have foundered in deeper waters, making them hard to access.

The transport and communication component was not confined to the sea. On land, it consisted of piers, docks, roads, and paths. These two realms were connected by numerous canoes that facilitated the transport of people and goods between ships and shore. The transport and communication component was of paramount importance to people on the island. It provided the means by which social, economic, cultural, and political ties with other islands and regions were maintained.

A wide variety of food products were available to the Statian population through time. Much was grown and collected locally, but significant amounts of food were

imported as well. It is interesting to note that comparatively few fruits and vegetables were imported; the island must have produced (nearly) enough of these to sustain the population and supply ships on the road. Provisioning grounds therefore played an important role in providing both locals and sailors with much needed sustenance. While the island has always housed farm animals, these were never present in such great numbers as to supply all inhabitants and sailors with meat. Enslaved peoples' diets most likely consisted of very little meat, while the white elite consumed more of it. Based on the imports of food, it seems that Statians relied more heavily on fish, turtle, and shellfish than they did on meat. Root crops such as yams, potatoes, and cassava have always been staple foods, particularly for the enslaved population.

Statians have always had to be creative when it came to the water supply. Wells were dug across the island to ensure an adequate supply of water. Cisterns were constructed wherever people were living to collect as much rain water as possible. After extended periods of drought, water was sometimes even imported from St. Kitts. Ensuring an adequate supply of food and water was never easy on St. Eustatius, but Statians managed to overcome these challenges and thereby enabled the island's population to grow to a number twice that of today. In addition, they managed to supply thousands of sailors each year. Without a well-developed resource component and a transport component that facilitated the movement of food and water, the island could not have developed into such an important player in the Atlantic World trade network.