The Heritage and History of the Southern Islands of Singapore

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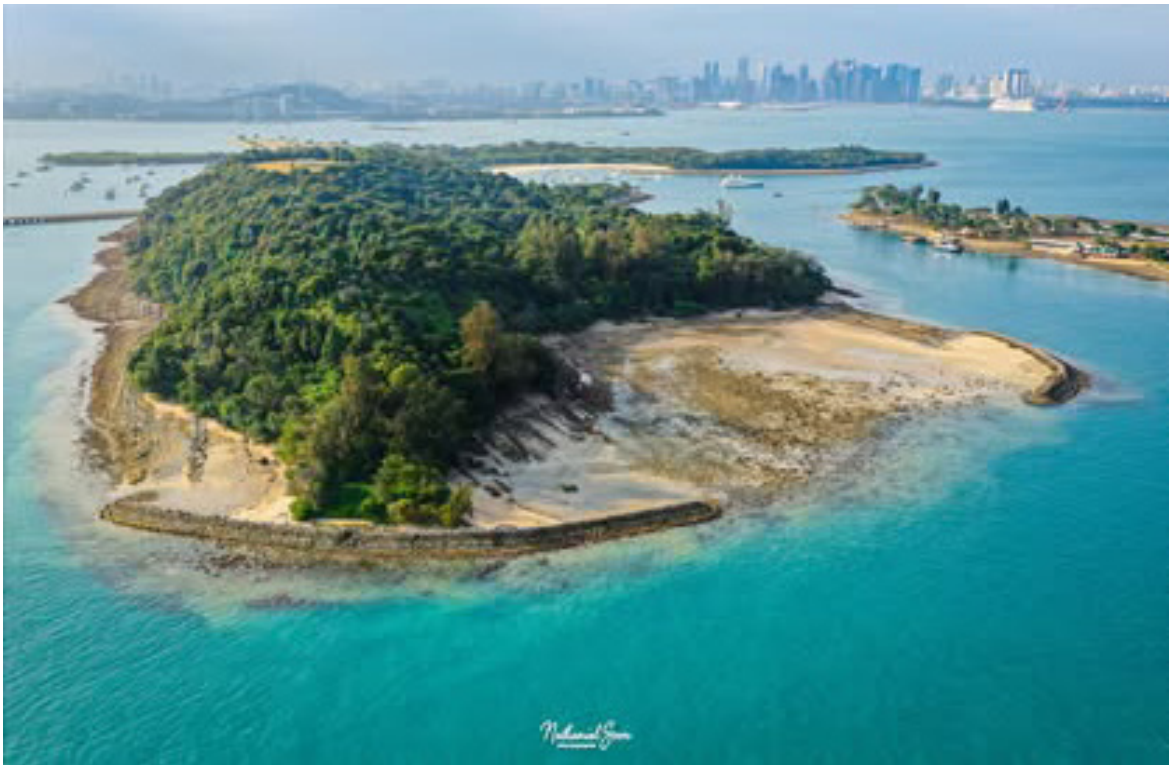
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ABSTRACT. Singapore is often thought of as an island nation in the popular imagination, but its history as a nation of many islands has often been neglected. Many of the Southern Islands, though small, have played an outsized role in Singapore's history and culture. For instance, Sir Stamford Raffles first anchored off the shores of St John's and Lazarus Islands before making his way to Pulau Ujong ('mainland' Singapore). Many of the offshore islands were also home to *Orang Suku Laut* (or 'sea peoples', those whose lives and livelihoods centred around the waters rather than on land), Malays, Chinese and Eurasian people before they were resettled on the main island. This chapter explores the history, etymology, and cultural inventory of 27 of the islands located to the south of Singapore, some of which were part of the Southern Islands Biodiversity Survey.

Keywords. Southern Islands, heritage, culture.

Introduction



The Southern Islands are an archipelago just offshore of "mainland" Singapore, with diverse histories, uses, and names from different languages including Malay, English, and Hokkien. From foreground to background: Pulau Sakijang Pelepah (Lazarus Island), Pulau Tembakul (Kusu Island), Pulau Seringat (joined to Lazarus Island by reclamation), Sentosa (formerly Pulau Blakang Mati), and Singapore Island (Pulau Ujong). Photo by Nathaniel Soon.

Apart from the Singapore main island (often called 'mainland' Singapore, and historically known as Pulau Ujong or 'island at the end [of the peninsula]'), and prominent islands such as Sentosa and Kusu to the south or Pulau Ubin and Pulau Tekong to the northeast, not many Singaporeans know much about, or are even aware of the fact that Singapore has many other offshore islands. Prior to colonial settlement, there were more than 80 islands, but counting how many there are today is tricky because coastline modification has led to conflicting definitions of what constitutes an "island". Assuming that an "island" is a landmass fully surrounded by water during high tides (bridges or causeways notwithstanding), we have slightly over 40 distinct islands today. Some have been lost to erosion. Others have been merged by land reclamation or joined by causeways and bridges, changes brought about by developments undergone in the service of the mainland urban core. Nevertheless, with a tiny land area of approximately 734 km^2 (Department of Statistics, 2023) spread across tens of islands, Singapore can rightly claim to be a nation of islands. While 88% of the land area is concentrated on the main island Singapore, the other islands comprise about 12% (86.9 km^2) of land.

As of 2023, it can be said that 30 discrete islands are found off the southern coast of Singapore, but the full picture is complicated for the reasons mentioned above. For instance, this figure excludes two former islands which have eroded away into patch reefs but are still officially termed *Pulau* (Pulau Berkas and Pulau Renggis), several artificial islands enclosed within the hydrologically isolated Sentosa Cove, and the artificial barrier islands off the beaches of Sentosa. In addition, there is a patch reef that was formerly an island in historical records but eroded over about 50 years from 1797 to 1848, namely Terumbu Pandan (Cyrene Reef). Even of the remaining 30, nomenclature and delineations are often messy. Pulau Hantu Besar and Pulau Hantu Kechil are joined together at low tide and hence often referred to as a single island "Pulau Hantu". Pulau Anak Bukom is similarly connected to the merged island of Pulau Bukom Kechil/Pulau Busing/Pulau Ular when the tide is low. The reclaimed islands of Pulau Seringat Kechil and Kias Island are joined by bridge/causeway to the much larger merged island of Pulau Sakiajng Pelepah (Lazarus Island)/Pulau Seringat, and hence are often lumped as a single "Lazarus Island".

Today, these 30 islands are grouped under the Boon Lay, Bukit Merah, Jurong East, Southern Islands, Tuas, and Western Islands Planning Areas designated by the Urban Redevelopment Authority (URA, 2021). However, the term 'Southern Islands' has historically been used to refer to islands beyond the recently defined Southern Islands Planning Area (e.g., Southern Islands Celebration Committee, 1966), such as Pulau Sakeng and Pulau Senang. For simplicity, the definition adopted for the purposes of the Southern Islands Biodiversity Survey therefore includes all 30 of these islands in Singapore's south.

Despite their small size relative to the main island, the Southern Islands have had an outsized role to play in Singapore's history. Since antiquity, the maritime trade routes between India and China would have had to pass by Singapore, and the Southern Islands were often used as important navigational markers. A 1595 account by Dutch traveler Jan Hyughen van Linschoten records the following route (Gibson-Hill, 1954). Entering from the west, trade ships would sail through the strait of Selat Sembilan between P. Ujong (mainland Singapore) and the Ayer Chawan archipelago (today's Jurong Island), before passing Terumbu Pandan (Cyrene Reef; previously an island named "Pulo Pandan"). Finally, aiming for the famous Batu Berlayar (Longyamen 龙牙门 in Chinese) rock formation, they would have had to brave the treacherous strait between P. Blakang Mati (Sentosa) and the mainland (the so-called

Old Strait of Singapore that is known today as Keppel Harbour), which was studded with numerous islands and their fringing reefs. Local pilots from the resident Orang Suku Laut community were often employed to help navigate these tricky waters. In later years, a new sailing route took ships further south, between P. Blakang Mati and the islands of P. Sekijang Bendera (St. John's Island) and P. Sekijang Pelepah (Lazarus Island).



Figure 1. The Old Strait of Singapore, today known as Keppel Harbour. From left: P. Ujong (mainland Singapore), P. Keppel (formerly P. Hantu), P. Brani, P. Selegu (now merged with Sentosa), Sentosa (formerly P. Blakang Mati) Photo by Jonathan Tan.

We provide some basic information about the islands in the south, particularly their tangible and intangible cultural salience. We highlight the islands that were surveyed as part of the Southern Islands Biodiversity Survey (SIBS) (Tan et al., 2025). For each island we provide the name and alternative names, historical context, etymology, and information on cultural significance. The information includes results from an earlier (as well as on-going) studies by Muzaini et al. (2019) focused on St John's Island, Lazarus Island, Pulau Seringat and the islands making up Jurong Island today. Kwa & Borschung (2018), Miksic (2018) and Trocki (2007) have presented information about pre-colonial Singapore including navigation and history relevant to the southern islands. The colonial period has been reviewed by Makepeace et al. (1991), Straits Times (1936) and Wurtzburg (1954). Savage & Yeoh (2003) have compiled information about place names, including on some of the islands. Material relevant to island living, resettlement and development since 1980 is included by Chew (1980), Connolly & Muzaini (2022), Wee and Benjamin (undated), MND (2017) and many others. It is hoped that readers will learn about these islands as more than just bastions of our natural heritage but also as nodes from which to discern the diminishing cultural heritage of our offshore islands and Singapore's history more generally.

History and Heritage

Settlements and way of life

Singapore once had approximately 46 islands south of the mainland (NUS, 2002). These islands were home to numerous fishing villages, including settlements of the Orang Suku Laut (of many different tribes), Malay, Chinese and other communities. Residents of the islands engaged primarily in small-scale fishing, with limited land-based agriculture (e.g., coconut, pineapples) so that on the hillier islands steep ground was left largely uncultivated and the settlements themselves were limited to the coastal fringe. Historically there would have been free movement not only between the islands, and between islands and mainland Singapore, but also between the islands currently belonging to Singapore and those currently belonging to Indonesia and Malaysia. Freedom of movement would have become increasingly regulated through development of the nation-states, and the elaboration of laws and administration related to border controls.

While limited timber for construction of housing and jetties was probably sourced from dryland forest on the hiller islands and from fringing mangroves, most daily necessities (including all rice) would have been sourced from the mainland through trade or barter. None of the islands has reliably permanent surface freshwater, so most water for bathing and consumption would have come from wells set back from the high tide line. In fact, the availability of fresh water would influence which islands later became inhabited.

As the waters around the islands became increasingly busy with international shipping during the 19th and 20th centuries, some islanders would have expanded their ferrying services from island to island by acting as bumboats for passengers and crew and small-scale cargo moving between large ships and mainland Singapore. Children obtained pocket money by diving for coins thrown by passengers from arriving ships. On some of the islands (e.g. Lazarus Island), tourism would also a source of revenue as islanders sold various trinkets and jewelry made from sea-shells, or sold food to pilgrims visiting Pulau Kusu (see below). Various activities of this sort were documented in photographs by Polunin (2023) from the mid 20th century, with many more of Polunin's photographs and films stored in the Singapore National Library collections. Additional uses of specific islands are documented below.

In the 1970s, the government started to resettle islanders to mainland Singapore in order to repurpose the islands for various national needs (Wee & Benjamin, 2015; IslandNation, 2019). In 2015, it was estimated that fewer than ten people lived on the southern islands of St John's and Kusu, although many of them were moved to the mainland following the discovery of asbestos on the roofs of many of the structures on St John's Island in 2015. Sentosa, however, owing to its position as a major tourism hub by then, and connected to the mainland by a road bridge and cable car, with hotels and private condominiums, had a resident population of 1470 individuals (Department of Statistics, 2015).

In addition to vacating the islands, various reclamation projects occurred to increase the amount of land available for development. Reclamation works have been done by various agencies including Jurong Town Corporation and the Port of Singapore Authority (Yong et al., 1991). Thirteen islands were reclaimed to form what is now Jurong Island. Islands such as those around Selat Sembilan and Pulau Damar have been mostly converted to industrial areas, with little to no wild spaces left. Islands such as Pulau Senang, Pulau Sudong and Pulau Pawai were designated as a live firing area to practise military tactics under the Ministry of Defence (WildSingapore, 2015). Pulau Semakau was completely merged with its neighbouring

island of Pulau Sakeng to form the nation's first ash landfill, under the jurisdiction of the National Environment Agency (NEA, 2021). Lazarus Island was combined or connected with St John's Island, Pulau Seringat and Kias, originally intended for use as an offshore upscale resort under the Sentosa Development Corporation although this did not materialise in the end, ending up with more modest developments as can be seen today (Miharja et al., 2014; see below). Of the islands remaining today, we physically visited 17 islands (a few the product of these multiple island mergers) and one patch reef, but have also made notes based on literature and our observations outside of the survey period.

Current and Future Plans

Based on the 2019 Urban Redevelopment Authority Masterplan (URA, 2021), most of the islands are classified as a mixture of reserved sites, open spaces and sport and recreation areas. Aside from this status, the Sisters' Islands Marine Park was designated a Public Park, encompassing 0.4km^2 of reef around Sister's Island, and the western parts of St John's Island and Pulau Tekukor (MPA, 2017). In recent years, Lazarus Island has also seen new developments to facilitate more recreational uses, in the form of a man-made beach, accommodation options as well as opportunities for myriad sea sports activities. Other recent developments in the southern islands include the completion of Phase II of the Semakau Landfill, providing 0.0167 km^3 or 16.7 million m^3 of capacity (NEA, 2015), and plans for the Greater Southern Waterfront to involve Pulau Brani and Sentosa (URA, 2023). It was also announced in 2024 that a new marine park would be designated that encompasses the southern part of Lazarus Island and the northern reefs of Kusu Island (MND, 2024).

ISLAND DESCRIPTIONS

Pulau Subar Laut and Pulau Subar Darat (Sisters' Islands)

Context

See Cornelius (2016) and Straits Times (1996, 2002, 2015a). Of the two islands, the larger one, Pulau Subar Laut (Big Sister's Island), is further from the mainland, hence the name 'laut' which means 'sea' in Malay. The smaller one, Pulau Subar Darat (Small Sister's Island), is closer to the mainland, hence the name 'darat' meaning 'land' in Malay. Comprising two hills bearing coastal forest and fringed by rocky shores and coral reefs, the islands are separated by a deep, narrow channel, which experiences strong tidal currents with the rising and falling tide. As far as historical documents show, these two islands were never inhabited. A Muslim tombstone is present on the hill of Pulau Subar Darat, but the identity of the buried person is unknown.

In the 1970s, the islands were enlarged through reclamation and then managed by the Sentosa Development Corporation for recreational use. Recreational swimming lagoons were created that have since become colonised by an intertidal coral reef community.

In 2014, the Sisters' Islands became part of the 40 ha Sisters' Islands Marine Park managed by the National Parks Board (NParks), which also includes the western reefs of Pulau Tekukor and St John's Island. Big Sister's Island remained open to the public for recreational use such as intertidal walks and swimming, and NParks created an underwater dive trail. Small Sister's Island was closed to the public and used for research and conservation activities, such as Singapore's first sea turtle hatchery.

Following redevelopment works, Big Sister's Island was reopened to the public in 2024, with new features such as a coastal forest trail, hilltop deck, and floating boardwalk. One of the recreational lagoons was converted to a tidal pool to facilitate habitat restoration.



Figure 2. Sisters' Islands viewed from the north-east, with Big Sister's Island (Pulau Subar Laut) to the left and Small Sister's Island (Pulau Subar Darat) to the right. Photo by Jonathan Tan.

Etymology

The meaning of the word '*subar'* is uncertain. Some sources state that it is a corruption of the word '*subur'*, meaning 'fertile' in Malay, which could be a reference to the flora and fauna on these two islands. There is also a Malay legend on how the two islands were formed, but with different variations on how the story transpired.

One account states that there were two sisters, Linah and Minah. When Linah caught the fancy of a pirate chief who wanted to marry her, she was forcibly separated from her sister. The day Linah was taken on the pirate's boat, Minah swam after her sister and drowned in the sea. Upon seeing this, Linah managed to free herself from her captors and jumped into the water to save her sister, but she too drowned. A huge storm then ensued till the next day, after which two islands appeared out of nowhere: the Sisters' Islands.

Another account mentions that the sisters drowned one day while one was helping the other. The gods saw this, were touched by their love for one another, and decided that the sisters should be memorialized as islands that are located close to each other. There are also Chinese and Tamil versions to the story, all of which revolve around the love that the sisters had for one another, followed by divine intervention to preserve the memory of the sisters' mutual sacrifice.

Cultural Inventory

Currently, the Sisters' Islands have various structures in place, primarily for the purposes of outreach, education, conservation, and research activities related to Singapore's native marine biodiversity.

No known communities were recorded living on the islands. From the 1970s to 2014, Big Sister's Island was used as a popular camping, diving and snorkeling site, with amenities like pavilions and barbeque pits. Since its designation as part of Sisters' Islands Marine Park, public activities with a greater focus on marine biodiversity have become more common, such as guided intertidal walks. In line with the conservation intent of the marine park, fishing, camping, and barbecues are no longer allowed, while recreational and research scuba diving are regulated through a permit system.

Pulau Tekukor (Pulau Penyabong; Pulau Botak)

Context

See Lim, J. (2014), Mindat (undated) and Wild Shores of Singapore (2010). Pulau Tekukor is a long narrow island measuring 600 m by 100 m. A forested ridge runs down the length of the island, which is fringed by coral reefs. Its eastern shore is covered in a mix of coastal beach and cliff forest, while the western shore was reclaimed during the colonial period for use in ammunition storage. In the 1980s, the island was used as a commercial explosives storage facility for the Port of Singapore Authority (PSA). These uses are now defunct.



Figure 3. NParks staff on Pulau Tekukor descending a rock formation after examining plants. Photo by Jonathan Tan.



Figure 4. Pulau Tekukor viewed from the northwest. Photo by Nathaniel Soon.



Figure 5. Intertidal rock formation at the northern tip of Pulau Tekukor. Photo by Jonathan Tan.



Figure 6. Red Feather Stars on a Barrel Sponge along the western reefs of Pulau Tekukor, part of the Sisters' Islands Marine Park. Photo by Nathaniel Soon.

In 2005, a proposal was made by animal welfare advocates to convert the island into a 'sanctuary' for long-tailed macaques (*Macaca fascicularis*). This never came to fruition.

In 2014, the western reefs of Pulau Tekukor were included within the Sisters' Island Marine Park, mentioned above.

Etymology

Pulau Tekukor is named after the sound made by the *tekukor* (Spotted-necked Dove). It was previously also known as Pulau Penyabong, derived from the Malay root word 'sabung' which means 'to fight'. A range of suggestions has been made about the origin of the older name (Lim, J., 2014). It could be a reference to the sport of cockfighting or to any historical conflict on the island or on the nearby waters: one source mentions that the island used to be a popular spot for pirates, or Malay and Bugis warriors, to have violent duels to the death. A tale recounts that, during one of these duels, a dying warrior placed a curse over the island which left its soil incapable of supporting any useful plant life or sources of freshwater. This led some to call the island Pulau Botak ('botak' meaning 'bald' in Malay). It is not known whether the island was ever truly devoid of vegetation; some say that the vegetation can only grow to a limited height as a result of the curse. The island's small area, narrow shape and steep sides naturally preclude freshwater sources and would likely stunt the vegetation.

The waterway to the south between P. Tekukor and Tanjung Hakim at the opposite point on St. John's Island is known as Selat Tanjong Hakim (*hakim* meaning 'to judge', *tanjong* meaning 'cape' or 'headland'; *selat* meaning 'straits').

Cultural Inventory

There are no structures on the eastern side of the island. Several structures are present on the western side (Figure 7). These include a jetty, although this has been closed due to weathering and safety issues, and five other manmade structures, four of which were for storage and one which may have been an office and generator room (Figure 8). These could be from when the Ammunition Dump was moved from P. Sekijang Pelepah (Lazarus Island) to P. Tekukor during the British colonial period. The structures were subsequently used as storage space for commercial explosives by the Port of Singapore Authority (PSA) in the 1980s (Figure 9). One of the buildings today even has an old generator and a Chinese shrine, probably set up by those working in the commercial explosives' storage space. There is a tower peeking out of the vegetation of Pulau Tekukor at its highest point, likely used as a triangulation station or a fixed survey station for mapping.



Figure 7. Some of the structures still standing at the eastern side of Pulau Tekukor.



Figure 8. What looks like the main building with offices and a generator room.



Figure 9. Interior of former explosives storage facility. Photo by Jonathan Tan.

Pulau Sakijang Bendera (St John's Island)

Context

See Muzaini et al. (2019), Azman (2015), Chan (2011), Ng (2018) and Straits Times (2018). St John's Island is one of the larger Southern Islands and serves various functions. The reefs on the western side of the island became part of Sisters' Islands Marine Park (SIMP) in 2014, while parts of the island are set aside by the Ministry of Defence for military use. There are also research facilities such as the St John's Island National Marine Laboratory, which conducts research on coastal and marine biodiversity and serves as a space for public outreach and education, the Marine Aquaculture Centre run by the Singapore Food Agency, and NParks' Marine Park Outreach and Education Centre. Other buildings are set aside for recreational purposes, such as chalets, which were under the purview of Sentosa Development Corporation (SDC) from the 1970s. Management of these chalets has been transferred to Singapore Land Authority since 2017.

Most of the island is covered in managed parkland vegetation, with some patches of secondary forest and two small mangrove clusters. Steep cliffs topped by coastal forest run along the western coast of the island, dropping to a rocky shore and coral reefs. The eastern coast has several artificial lagoons with sandy beaches, used for recreation, research, and military activities. A causeway built in the 1990s now connects it to nearby Lazarus Island.

In 1819, Raffles anchored off St John's Island before landing on Singapore proper. Previously uninhabited, the island was coopted in 1874 by the colonial British to become a Quarantine Station for those seeking to enter the mainland. The impetus was an outbreak of cholera on a ship from Fuzhou, China coming into Singapore in 1873, claiming 357 lives. This led to the building of dormitories and villas serving various functions to quarantine visitors and immigrants to the mainland (e.g., the Superintendent's Office, medical facilities, storage, watch tower, laundry rooms, post office, and disinfecting station). People who were quarantined included immigrants from China, India, Japan, and Europe, as well as Muslim pilgrims returning from the Hajj. By 1935, St John's Island had become the largest quarantine

station in the world, housing 5,000 to 6,000 people. This prevented major infections from entering Singapore. A daily siren would announce new arrivals coming onto the island via the jetty; these newcomers would then be sprayed with disinfectant in a large shed (now demolished). The original arrival jetty had no roof, and the roofed jetty seen today was built on the same site. There used to be a guard station at the island end of the jetty but this is no longer evident. The main source of water was from water supply boats, which used a separate jetty; this now lies abandoned. Natural materials such as coral rubble were used in the construction of the seawall along the eastern coast, still visible today. The quarantine station closed in 1976 due to the decline in mass immigration by ship and the rise of air travel.

During the 1940s in World War II, the island was used by the British as an internment centre for German, Italian, and Japanese soldiers and civilians.

The remaining structures were then used as a political detention centre in the 1950s during the Malayan Emergency; notable detainees included Mr. Devan Nair, later to become Singapore's third president, and Mr. Lim Chin Siong and Mr. Fong Swee Suan, founding members of the People's Action Party and subsequently the Barisan Sosialis. In 1975, the detention centre was home to refugees from the Vietnam War before they migrated onwards to other countries.

The island was also used as an Opium Treatment Centre and drug rehabilitation centre from 1955 to 1975. Residents were trained in various crafts such as carpentry and tailoring, so as to rejoin society as responsible citizens after release.

Most of the island's facilities were converted into campsites and holiday accommodation in 1975. Holiday dormitories for students were also built in the 1970s. Along with Pulau Sekijang Pelepah (Lazarus Island) and Pulau Seringat, it was planned to become recreational space for Singaporeans to replace the coastal recreation area along the East Coast that was lost in 1974 with the construction of Changi International Airport.

The development of the holiday chalets also saw the building of additional houses for the caretakers of the islands under the purview of Sentosa Development Corporation (SDC). SDC also repurposed some of the buildings used for the former Quarantine Station.

After Singapore's independence in 1965, the St John's Island English School, a mosque, and a surau were built to cater to those working on the island. Teachers' quarters were built for those who did not want to commute between the island and the mainland. This was a primary school, and some villagers from Lazarus Island also sent their children over to be educated in English.

In 1999, large holding areas and additional facilities were built as there were concerns of having to house refugees fleeing political unrest in Indonesia. These were ultimately not used. The island also became a centre for marine biological research due to the easy access to seawater for use in the laboratory facilities. In 2002, the Tropical Marine Science Institute opened a laboratory, which later became the St John's Island National Marine Laboratory. In 2003, the then Agri-Food and Veterinary Authority (now the Singapore Food Authority, SFA) opened the Maritime Aquaculture Centre.

The St John's Island Trail was created by NParks as part of the Sisters' Island Marine Park's outreach programmes, with thematic markers to explain the natural and human heritage of the island. Eleven Heritage Trees have been designated on St John's Island, including species such as Tembusu, Sea Fig, Common Pulai, Penaga Laut, Tempinis, Machang Pulasan, and Neem.

Etymology

The first known record of St John's Island is a map from 1604 by Portuguese-Eurasian explorer Eredia, where it was labelled "Pulo Siquijan", i.e. Pulau Sakijang; this name was later corrupted into "Sijang" and finally "St John's". 'Sakijang' is thought to be derived from the Malay word 'seekor' which roughly translates to 'one', and 'kijang' which means 'barking deer'. One account says that the name is a reference to barking deer that used to roam the island. Another account states that there were two barking deer on an island, but they were later separated, one of them on Lazarus Island (Pulau Sakijang Pelepah) and the other on St John's Island (Pulau Sakijang Bendera). There is no evidence of this apart from a newspaper clipping stating that the British introduced two bucks on the island in the 1900s, presumably as a reenactment for the names of the islands (which, as mentioned above, already bore such a name by 1604). The bucks were said to have become violent and had to be culled.

'Bendera' ('flag' in Malay) was most likely a reference to flagstaffs erected on the island. To advertise Singapore as a British free port, a flagstaff was needed to signal to passing ships in the Singapore Strait. This was originally placed on Kusu Island, but then moved to St John's Island from 1822 to 1833; hence the island became known as Pulau Sakijang Bendera. The flagstaff was later moved to Pulau Blakang Mati and eventually to Mount Faber. It is said that a flag was also used when the island was transformed into a Quarantine Station. A flag would be hoisted near the jetty to indicate how safe it was to be on the island. If a white flag was shown, the island was open for ships to approach, but a red flag either meant choppy waters or that there had been an outbreak of disease on the island and ships were advised to stay away until it was safe again for them to approach.

Cultural Inventory

There are still many structures on St John's Island that speak to its checkered past. The dormitories of the former Quarantine Station, political detention centre, then Opium Treatment Centre, along with a few of the colonial villas are still standing (Figure 10 and 11). They now serve as accommodation for those camping on the island, as well as for visitors seeking to stay the night. To fulfil this function, new dormitories were also set up to replace a few of the original ones that were torn down. Other structures torn down include parts of the medical facility of the Quarantine Station. The leftover rubble is still present in the forest, although one of the medical buildings still exists and forms a part of the Staff Quarters for the Marine Aquaculture Centre owned by the Singapore Food Agency.



Figure 10. Staff quarters at MAC – former medical facility for the Quarantine Station.



Figure 11. One of the colonial villas – previously used by the medical staff. It is now available for booking as a holiday chalet

Within the dormitory area, which is currently off limits to the public, there are still the original markers of '1955' and the Singapore crest put up when the Opium Treatment Centre was established (Figure 12). The former Superintendent's house still stands at one of the hight points and has been refurbished.



Figure 12. One of the dormitories on St John's Island with the Singapore crest in the foreground.

Near the main jetty, there stands a line of mass toilets (Figure 13). These were established in anticipation of a major exodus of Indonesians to Singapore following the 1998 post-Reformasi period although the exodus never happened, and the only time St John's Island was used as a refugee station was in the 1970s when some Vietnamese were seeking refuge from war.

Although the former storage area and the wooden disinfectant station have been torn down, the engine room, and a few colonial villas (such as the one used as a medical post) are still there. Near this are also some of the remaining quarters set up by SDC and formerly inhabited by former caretakers. A structure built by the British as part of the quarantine station, which later served as a provisions shop for islanders, is still standing. The last few caretakers left the island in 2018 when the island was to be refurbished after the discovery of asbestos in many of the standing structures. The affected buildings have been left roofless.



Figure 13. Mass toilets built for potential refugees in 1998.

Located deep in the island is an area not accessible to the public. The space holds a telecommunications station at the top of the hill known as Bukit Belanda (or Dutch Hill), a Christian grave (there used to be two but one collapsed during a landslide) and a structure known as the moon-gate presumably built by German internees during WWII (Ng, 2018) as the gateway to a recreational beach (Figure 14). There used to be a traditional Chinese styled pavilion as well, but this has been lost due to land reclamation. The moon-gate now lies within a restricted area and is not accessible to the public.



Figure 14. An abandoned Christian grave near Bukit Belanda (left) and what remains of the moongate (right).

A lagoon and beach area has been given over to NParks and the Friends of the Marine Park to be used for educational and research purposes since 2020. Named Bendera Bay in reference to the Malay name of the island, it is located close to the former English school and mosque which are still standing (Figure 15). Behind the mosque and on top of the hill are the Teachers' Quarters (Figure 16 and 17).



Figure 15. What remains of the former SJI English School.



Figure 16. The mosque at St John's Island.



Figure 17. Remains of the old Teachers' Quarters.

Pulau Sakijang Pelepah (Lazarus Island)

Context

See Straits Times (2015b) and Muzaini et al (2019). Lazarus Island is located close to St John's Island, to which it is now connected via a causeway. Dominated by a steep hill, it is fringed with coral reefs. Rocky shores and cliffs line the southwestern coast, while the eastern coast facing Kusu Island is a sandy shore. An artificial lagoon is located at the southeastern tip, where a natural stream flows into the sea.

When Raffles first arrived in Singapore, he anchored between St John's and Lazarus Islands where he met with local villagers. Given that St John's Island was uninhabited at the time due to the lack of viable water sources, in all likelihood the islanders he met (or at least encountered through his men) were from Lazarus Island. Through them, he obtained information on the political situation on mainland Singapore that helped him negotiate with the Temenggong on the mainland, a proxy to the Johore Sultanate at the time, to set up the British colonial settlement.

Until the early 20th century, Lazarus Island was often called "St John's Island East", as the two islands looked like a single island from afar.

It is not exactly known where the original residents of Lazarus were from, or when they arrived, but they were initially settled on nearby Pulau Seringat known then for its abundance of fish (see below). However, with the sea level rise submerging the island, it was no longer tenable to stay on Pulau Seringat and the village was moved to Lazarus Island. By the 1960s, Lazarus Island had two villages made up of about 40 stilt houses along the waterline on the north coast. These housed about 100 people, mostly Malay and Orang Suku Laut families with ties to the Riau Archipelago. A provision shop was run by a Chinese family. Freshwater was obtained from a stream and a well. Tourists often visited and bought souvenirs of coral

from the villagers. A popular activity was to toss coins into the sea as the tourist boats were leaving, which the village boys would then dive for. Villagers grew crops such as guava, banana, sugarcane, tapioca, breadfruit and coconut. They also used to salvage fruits thrown into the sea by pilgrims to nearby Kusu Island. During the major pilgrimage season on Kusu Island, islanders would also hawk food and supplies there as well. Each year the villagers took part in Pesta 5S, an annual festival in which residents of the five southern islands beginning with the letter "S" would compete in kolek/boat races, tug-of-war and football. The islands were Seking, Semakau, Sakijang (St John's and Lazarus Islands), Seraya, and Sudong.

Structures that helped serve the village community included Pulau Sekijang Pelepah Malay School, a community centre, a mosque, and a cemetery. There were separate cemetery grounds for those who died while at the Quarantine Station at St John's Island. An ammunition bunker for the British was built in the southeast.

The villages were vacated in the 1970s when the island was designated for recreation (Straits Times, 2006). Land was reclaimed in the 2000s to join Lazarus with Pulau Seringat Besar, Seringat Kecil and Kias to the north. A masonry wall was built round the whole northern sector, except for a natural mangrove inlet on the northeast, and infilled with sand. As a result, the originally low profiles of Pulau Seringat Besar, Seringat Kecil and Kias have been levelled to about 2 m above sea level, while the steep topography of Lazarus has been largely undisturbed. Parts of the west and south coast were also protected from erosion with masonry walls. Plans included constructing a hotel, golf course and other amenities, but eventually only the jetty and pavilions were built. Other plans were put on hold (Straits Times, 2007). Today, there is a large crescent-shaped manmade beach popularly called Eagle Bay, which is often visited by picnickers, boaters, and kayakers, and has overnight pavilions and a small shop.

In 2024, it was announced by NParks that the southern part of the island would be conserved as part of Singapore's second marine park, due to its coastal forest, rocky shores, and coral reefs. The island is currently maintained by Singapore Land Authority, which mows turf along the pedestrian paths and tarmac road, cuts back secondary vegetation and tree branches, and employs contracted vessels to remove floating litter that gathers within the more enclosed areas of the masonry retaining walls and along Eagle Bay.

Etymology

The island used to be known as Pulau Sakijang Pelepah, 'sekijang' referring to barking deer and 'pelepah' referring to palm fronds (see Pulau Sekijang Bendera above).

It is not clear how the name Lazarus came about. While some say that this was a biblical reference, the most reliable account states that Lazarus came from the word 'lazaretto' or 'lazarette' which, in Italian, means a place where contagious diseases amongst maritime travelers were isolated and contained. This could be due to its proximity to St John's Island, or its use as a recovery space for patients afflicted by beri-beri from 1899.

Cultural inventory

Nothing remains today of the two villages and other amenities that used to exist. There is a new jetty, Eagle Bay beach, pavilions, rest stops and toilets. An array of concrete paths takes one around the island towards the conjoined sector that was once Pulau Seringat, with a stone bridge to Pulau Seringat Kecil and a causeway to Pulau Kias. A tarmac road for access by large maintenance vehicles follows approximately the same route, from St. John's across the causeway.

On the southeast corner of Lazarus, accessible only during low tide, are remains of the ammunition bunkers built by the British colonial forces (Figure 18). An aircraft navigational beacon is positioned at the highest point of the island, within a cleared, turfed area (Figure 19).



Figure 18. One of the former ammunition bunkers on Lazarus Island.



Figure 19. Navigational radar station atop the highest point on Lazarus Island.

Standing on a hill slope facing Kusu Island is the grave of Ng Chai Hoong (黄彩雲), a caretaker of the temple on Kusu who passed away in 1950 at the age of 100 (Remember Singapore, 2014) (Figure 20). It is probable that the grave was placed here due to the taboo of having burial sites on the pilgrimage destination of Kusu Island itself. Up till at least the 2010s, the grave continued to receive visitors. A few other grave markers have also been found nearby. More research is needed to know more about the history of these grave markers.

Recently, there have been many new developments on the island to make it more attractive for visitors which had begun to frequent the island, particularly since the pandemic. There is now a new *Tiny Homes* initiative on the island for visitors to spend a night or two on the island, glamping options, a convenience store as well as provisions for cycling and sea-sports activities. These new developments are kept 'light' so as to ensure that the rusticity and sustainability of the island is maintained.



Figure 20. The grave of Ng Chai Hoong 黃彩雲 found on the hillside of Lazarus Island.

Pulau Seringat (Pulau Renget).

Context

Pulau Seringat originally comprised a large patch reef with two outcrops that were frequently inundated at high tide, called Pulau Renget and Pulau Renget Kechil. It is thought to be the first location inhabited by settlers from the Riau Islands, due to the abundance of fish. Old maps show the area had a few houses on stilts established by the fishing folk at the time. Due to erosion, the villagers were forced to relocate and that was when they moved across the channel to Pulau Sekijang Pelepah (Lazarus Island; see above).

The island was enlarged through reclamation in the 1970s, and subsequently joined to Lazarus Island through further reclamation in the early 2000s as described above. The small patch reef to the west, now Kias Island, was also reclaimed and joined to Seringat by a causeway.

Etymology

The name 'Seringat' is said to come from the Malay word 'ringgit' which means money. This could be in reference to money accrued by the early settlers from their daily catch.

Cultural inventory:

Nothing remains of the former village. There is no clear boundary between what was Lazarus and the newly conjoined Pulau Seringat, in the area that now has pavilions, public toilets, and overnight accommodation pods. Pulau Seringat Kecil is clearly demarcated by the stone bridge but is not normally accessed by visitors. Kias is demarcated by the causeway with

tarmac road (Figure 21). The island was planned to be developed for housing and recreational developments, but no construction has occurred as of 2023. Since reclamation, Pulau Seringat has developed secondary forest dominated by *Terminalia catappa* and a few other tree species, Pulau Seringat Kecil has become overgrown mostly by *Leucaena*, and Kias has developed a short open sward of grasses and herbs over a sandy substrate. On Kias is a utilities building.



Figure 21. The Causeway joining Kias Island to Pulau Seringat (in the distance). Photo by Hamzah Muzaini.



Figure 22. Reclaimed seagrass lagoon in the north of Pulau Seringat. Photo by Jonathan Tan.

Pulau Biola (Violin Island; Rabbit Island)

Context

Pulau Biola is a small island, of about 0.4 ha, located at the southernmost point of Singapore's southern waters. It is known for its rich biodiversity of corals and marine life. It is surrounded by reefs and sandflats and does not have a jetty. Pulau Biola was regarded as an important navigational feature prior to Singapore's colonization by the British in 1819, having been marked in a 1755 navigational map by Jacques-Nicolas Bellin, a French royal cartographer. Pulau Satumu is visible from one side of the island.



Figure 23. Pulau Biola. Photo by Geoffrey Davison.



Figure 24. View of the reef flat of Pulau Biola. Photo by Jonathan Tan.



Figure 25. Fluted Giant Clam (Tridacna squamosa) on the reef flat of Pulau Biola. Photo by Jonathan Tan.

Etymology

The name of the island, 'Biola', means 'violin' in Malay. This could be in reference to the shape of the island during low tide when seen from above. Jacques-Nicolas Bellin depicted the island's violin shape on his 1755 map, with two pegs protruding out of one end and a rounded soundboard on the other. The name Rabbit Island is said to have been given to the island by early English navigators; it could be that the two pegs said to look like that of the violin were also discerned by some to be a pair of 'bunny ears'.

Cultural Inventory

The island was earmarked as part of the Southern Islands Live Firing Area in 1982, due to its proximity to Pulau Pawai and other islands in the Live Firing Area managed by the Ministry of Defence. This might explain the structures currently on the island, particularly en route to the highest point of the island where a brick structure can be found (Figure 26, 27 and 28)



Figure 26. Some of the structures observed on Pulau Biola with steps to the top of the hill. Photos by Hamzah Muzaini.



Figure 27. A vessel for composting or perhaps for storing water. Photo by Hamzah Muzaini.



Figure 28. Structures at the highest point which would have served as a sentry point or a toilet. Photo by Hamzah Muzaini.

There are what look like flagstaffs on the island, presumably intended for raising a flag whenever there was live firing training (Figure 29). The vegetation has been burnt repeatedly, presumably during exercises. Loss of vegetation has exacerbated erosion at the narrow point at the centre of the island. Unexploded ordinance was also found on the island which would have been washed ashore from the nearby firing islands.



Figure 29. Remnants of flagstaffs on the island. Photo by Hamzah Muzaini.



Figure 30. A ceramic shard from a bit pot found on the island. It is not clear if the shard was discarded there or brought in by the currents. Photo by Hamzah Muzaini.

Pulau Salu

Context

Pulau Salu is close to Pulau Sudong, which is another of the Live Firing Islands managed by the Ministry of Defence. It is surrounded with coral reefs and does not have a jetty. The island is not known to have ever been inhabited, although there are glass and ceramic shards that may have been washed up by currents (Figure 32). Rubber trees were found on the island during the survey, but it is unclear if they originate from deliberate planting or accidental dispersal.



Figure 31. Views of Pulau Salu from the sea and from its reef flat at low tide. Photos by Jonathan Tan and Hamzah Muzaini.



Figure 32. Left: Part of the intertidal environment of the island (during low tide). Right: A piece of a ceramic plate found on the island, probably washed ashore. Photos by Hamzah Muzaini.

Etymology

The exact meaning of the name is not known although it could be a corruption of the Malay word, 'salur', 'saluran', or 'salor, meaning a watercourse or a channel.

Pulau Semakau (including Pulau Sakeng/Siking/Seking)

Context

See Chia & Aziz (2019), Straits Times (1991). Pulau Semakau is Singapore's first and only offshore landfill and an area for environmental conservation (Ng, 2009). The island today was formed out of the merger of two distinct islands, Pulau Semakau and Pulau Sakeng. Both islands were formerly inhabited by predominantly Malay and Orang Suku Laut communities living by the shore, typical of many such island populations. They were served by their respective provision shops.

The earliest report of inhabitants was made in 1844 when there was a pirate attack on the villages, but archaeological surveys suggest the island may have been inhabited much earlier than that. By 1982, there were still over 500 people, mainly Orang Selat, a community of *Orang Suku Laut*, living on Pulau Sakeng, divided into four different villages, Kampong Tengah, Kampong Berkat, Tanjong China and Sebelah Sebong. Kampong Tengah ('tengah' meaning 'in the middle') was the largest. Kampong Berkat, another village, means 'blessed headland' in Malay. Tanjong China was so named because of the small Chinese village located on the southwestern end of the island which would explain the several Chinese graves found there. One of the Chinese families owned the provision shop. Sebelah Sebong village had the most mangroves around the island. In addition to a provision shop, there was also a police post, a post office, a Malay primary school, a football field, a medical centre, a community centre, a Muslim cemetery and a Chinese cemetery.

Pulau Sakeng also welcomed many former islanders who were displaced when Pulau Bukom was transformed into an island for offshore oil refineries. Many of the residents of Pulau Sakeng also worked on Pulau Bukom. The population on Pulau Sakeng dwindled to about 200 by 1993, as many of the islanders were enticed to move to the mainland for easier access to amenities. The island did not have a fresh water supply.

Previously, there was a 200 m jetty that was constructed as coral reefs around the island made it difficult for boats to berth closer to the island. Access to the mainland was by motorboat to Pulau Bukom, followed by a ferry to Clifford Pier.

In addition to working on Pulau Bukom, the residents of Pulau Semakau and Pulau Sakeng made a living as fishermen or boat builders. Village life on Pulau Semakau ended when most of the islanders moved to the mainland in 1977. Some of them moved to Pulau Sakeng although Pulau Sakeng residents were displaced in 1994 when the decision was made to merge the island with Pulau Semakau to become a landfill. The landfill commenced operations in the late 1990s.

To protect the ecosystems and rich biodiversity in and around the island, various safeguards were introduced to prevent pollution from leaching from the landfill into the surrounding sea. These measures helped to protect precious habitats like seagrass beds, mangroves and coral reefs along Semakau's western shores. To replace 13 hectares of mangroves destroyed during the construction of the landfill, the National Environment Agency replanted 400,000 mangrove saplings on specially made mud beds. 700 colonies of corals were also harvested and transplanted to Sisters' Island before land reclamation works, and fish in the area were caught and released into the open sea. Today, Pulau Semakau attracts interest groups seeking to do surveys and research, although access to the island is not allowed without valid permits. On the northeast side are landing facilities, warehoused incineration and compressing facilities, and offices. The majority of what used to be Pulau Sakeng, the eastern side of Pulau Semakau and the reclaimed area between them is occupied by a series of lined leach-proofed cells within a coastal bund, leaving mangroves in a northern and a southern cleft between the two former islands, and semi-natural vegetation on the sloping western part of Pulau Semakau.

Etymology

The name 'Semakau' is likely a reference to the abundant mangroves ('bakau' in Malay, referring to *Rhizophora* spp.) there.

The name Pulau Sakeng may have been a corruption of the reputed founder of the island, a lady by the name of Kelengking. (This is itself the Malay name of the Oriental Pied Hornbill, hinting that there might be lost mythical parts of a longer story.) She was said to be a pirate descended from a long bloodline of other pirates. There used to be a keramat or Malay shrine on the island erected in memory of her.

Cultural Inventory

The development of the landfill means that there is not much of historical and cultural value left on Pulau Semakau and Pulau Sakeng. The huge roofed warehouse for the collection of waste is conspicuous and can be seen from several of the other islands. However, along the natural coastline are remnants of the stilts, stakes and pilings that formerly supported the jetty and houses on Pulau Semakau (Figure 33).



Figure 33. Remnants on the island from the time when there was a village on Pulau Semakau. Photos by Hamzah Muzaini.

Pulau Jong (Junk Island)

Context

This is a small conical island, with a land area of about 0.6 ha, situated north of Pulau Sebarok and the former Pulau Sakeng. There is a huge reef surrounding the island that is visited by citizen scientists and researchers documenting the intertidal zone. As there is no jetty on the island, and the reef obstructs boats from berthing on shore, the island is only accessible through amphibious landing.



Figure 34. View of Pulau Jong from the sea. Photo by Jonathan Tan.



Figure 35. View from the peak of Pulau Jong. Photo by Jonathan Tan.



Figure 36. Reefscape of Pulau Jong. Photo by Nathaniel Soon.

Etymology

The name is a reference to the Malay *jong* (or *djong*, *jung*) which is an ancient sailing ship in the region used largely by Javanese and Malay sailors. The name 'junk' which refers to Chinese sailing vessels is a corruption of the same word. One story recounts that a long time ago, there was a Chinese junk that was attacked by pirates. As the pirates were boarding the junk, the captain of the junk let up such a loud shout that the sea spirits turned the whole junk into an island. The name alludes to the island's steep sides resembling a vessel.

Cultural Inventory

Pulau Jong was never inhabited, likely due to its small size, very steep cliffs and lack of freshwater wells. There are no traces of habitation on the island. Porcelain shards recovered from the island could have been washed ashore by the currents (Figure 37). Today, the island is a designated site for recreational diving due to its coral reefs.



Figure 37. Some of the ceramic shards found on Pulau Jong. Photo by Hamzah Muzaini.

Sentosa (Pulau Blakang Mati/Blacan Mati/Burne Beard Island/Pulau Niry/Nirifa/ Pulau Panjang

Context

Sentosa (formerly Pulau Blakang Mati) is a 500 ha island situated just south of the Central Business District of Singapore. It has a rich history that spans centuries. Before the arrival of the British in the 1800s, the island was originally inhabited by a community of Bugis, Chinese and Malays. One early account from 1613 made reference to a group of people known as the 'Salettes' who made their homes on roofed boats (or *perahu*). These were most probably referring to the Orang Selat (or Straits people), an Orang Suku Laut community. Old maps also show how there used to be many different kampungs or villages on this vast island inhabited by the different communities (which included Kampong Serapong Kecil, Kampong Serapong Besar, Kampong Ayer Bendera and Kampong Blakang Mati). While many of them were fishermen, there were also huge fruit plantations recorded on the island such as those for pineapples, coconuts, guava, durians and chempedak (jackfruits).

Parts of the island were later developed into a military installation under British rule, converted into a prisoner-of-war camp during the Japanese Occupation, and finally redeveloped into a tourist destination (Ho & Chua, 2015). It is currently an island resort, with attractions such as Universal Studios Singapore, S.E.A. Aquarium, a casino, as well as hotels and luxury residences.

Cloaked in coastal forest, mangroves, and coral reefs and originally inhabited by fishing villages, Pulau Blakang Mati underwent numerous changes over its long history. As early as 1827, the island was recognized for its strategic location to protect shipping lanes. In the 1880s, three artillery forts were constructed – Forts Serapong, Connaught and Siloso, as well as Mount Imbiah Battery. At that time the island was strategic because of foreign shipping passing Singapore for example to Vladivostok, at a time when Britain and Russia vied for control in Asia. The island was significantly fortified by the 1930s where it served as a base for Royal Artillery units for Singapore.

During the Second World War, the British expected the Japanese to invade Singapore from the south. As such, most of the British forces and guns were retained on Pulau Blakang Mati (and Labrador Battery on the mainland, as 'twin fortresses') in anticipation of an invasion. However, during the Battle of Singapore in February 1942, Singapore fell to the Japanese when they mounted an attack from the north. Thereafter, one of the beaches of Blakang Mati was used to execute many Chinese people in a nationwide operation called Operation Sook Ching. The island was subsequently used as a prisoner of war camp for 400 Allied soldiers from Great Britain and Australia.

After World War II, the island became a base for the Singapore Regiment of the Royal Artillery (SRRA) where local enlistees would come for the basic military training. The SRRA was disbanded a decade later and the area was used to house Gurkha infantry units. Fort Siloso and Fort Serapong were converted into churches, while Fort Connaught remained unused.

In 1963, the Malaysia Agreement laid out the terms and conditions for the formation of the Federation of Malaysia. This included a clause which stated that all areas under the British War Department would be transferred to Singapore, including Pulau Blakang Mati. Thereafter, the Gurkha units were withdrawn from Singapore upon independence, and the Singapore Volunteer Naval Force was established on the island.

Plans were made to develop Pulau Blakang Mati, with proposals to make it a port and industrial complex, an island resort with a casino or a military installation. However, a $1.2

million study conducted by a Canadian-Singaporean group of experts found that while the island had suitably deep waters for berthing ships, the surrounding sea lanes would get too congested for this plan to work. Minister E.W. Barker and economic advisor Albert Winsemius encouraged Lee Kuan Yew to use the island for tourism, and plans were finally set in motion to turn the island into a holiday destination in 1971 (Ho & Chua, 2015). The island has been managed by the Sentosa Development Corporation since 1972.

Extensive reclamation for recreational beaches, Serapong Golf Course, and the luxury residential estate of Sentosa Cove, has drastically altered the coasts of Sentosa. A large reef to the southeast, Buran Darat, was also merged with Sentosa through reclamation. Today, the last natural shoreline is at Tanjong Rimau (Tiger Cape in Malay, also formerly known as Sarang Rimau, or Tiger's Den) on the northwestern tip of the island (Figure 38). Coral reefs and rocky shore fringe cliffs covered in coastal forest, while the remnants of Fort Siloso dominate the hilltop and are open as a tourist attraction. Natural intertidal and subtidal reefs also continue to fringe the island even along its reclaimed shorelines, such as at Serapong Golf Course.



Figure 38. The coastal cliffs, rocky shore, and intertidal reef of Tanjong Rimau/Fort Siloso. Photo by Jonathan Tan.

Etymology

Renamed in 1969 through a naming competition, which sought to help rebrand the island into a holiday destination, Sentosa means "tranquility" in Malay. The island was previously named Blakang Mati which literally means "behind death" in Malay. Sometimes it is translated into "death from behind". There are various accounts of the origin of the more ominous, original name for the island.

One account states that the name is a reference to the island's past of rampant murder and piracy. The Orang Suku Laut who inhabited the island were said to ambush trade vessels from behind when they sailed into the Singapore Straits. Another account mentions that the island is a paradise for warrior spirits who were entombed in the neighboring Pulau Brani. Yet another account attributes the name to a mysterious disease that struck the islanders,

which was named Blakang Mati Fever in the 1840s. Before the outbreak of the disease, 60 islanders lived on the island, but the island was reduced to just two Bugis families afterwards. Blakang Mati Fever is now believed to be malaria.

A completely different possibility is that the old names of Pulau Blakang Mati and Pulau Air Brani simply referred to the state of the tidal currents between these islands and the mainland: 'air mati' (dead water or still water), and 'air brani' ('brave', turbulent or rushing water). Such names would have been coined readily by fishing communities or navigators. Then stories such as piracy, executions or disease could be seen as retrospective inventions based on too literal interpretation of the words *mati* and *brani*.

Cultural inventory:

Sentosa now houses numerous amenities and tourist attractions, some of which commemorate its past as a British army bunker such as Fort Siloso, while others are for recreation. There are many hotels and high-end residences, as well as a marina for yachts at Sentosa Cove. Universal Studios Singapore, S.E.A. Aquarium and Resorts World Casino also operate on the island and draw visitors from around the world. Some of the beaches of Sentosa are lined with beachfront restaurants and recreational facilities like the AJ Hackett bungee jump, Skyline Luge and SkyHelix, to name a few. There is also a fire station in the event of fire.

Former military buildings dating back to the colonial period also remain standing at Fort Serapong and Berhala Reping (Figure 39 and 40). The latter was a small outcrop once connected to Pulau Blakang Mati by a concrete jetty, and now joined to the renamed Sentosa by reclamation as part of Serapong Golf Course. Other former colonial buildings have also been converted into hotels and museums.



Figure 39. Former military buildings at Fort Serapong. Photos by Jonathan Tan (top) and Shaun Choo (bottom)



Figure 40. Former military structures at Berhala Reping, dating to before reclamation joined it with Sentosa. Photos by Jonathan Tan.

Pulau Brani (Pulau Ayer Brani, Pulo Brani, San chu-shek tui-min (Hokkien for 'opposite the new tin smelting')

Context

See Abdul Halim et al. (2016). Situated in the narrow strait between Sentosa and Singapore main island, Pulau Brani was previously inhabited by the Orang Suku Laut. There were three villages, namely Kampong Selat Sengkir, Kampong Kopit and Kampong Telok Saga. It also had a brick kiln, a coal depot, a tin smelting plant (established by the Straits Trading Company in 1890 to process tin ores mined in mainland Malaya; this provided employment to many people who were then living on the island), and a ship repair dock. The kampongs were vacated in the 1960s, as the villagers were shifted to mainland Singapore (SG101, 2024).

The British set up Pulau Brani as a naval base, and subsequently it was taken over by the Republic of Singapore Navy. Today, it is a shipping container terminal, and the Singapore Coast Guard has a training facility located on the southern end of the island, which opened in 2006 (Cornelius-Takahama, 2018). There are plans to incorporate the island into the Great Southern Waterfront Bay Area, which will see Pulau Brani and its surroundings transform into coastal parks and residences.

Etymology

Pulau Brani means "isle of the brave" in Malay, but as mentioned above the fuller name Pulau Ayer Brani might well refer to rough or rushing water.

Cultural inventory

Pulau Brani is linked to the mainland by a bridge, which allows passage of heavy vehicles to facilitate the transport of containers. The Brani Container Terminal occupies the northern end of Pulau Brani, and is one of the four container terminals in Singapore (Tanjong Pagar, Brani, Keppel Distripark and Jurong Island Terminal). The four subports have a total of 52 berths. In 2021, the multiport terminal handled 1.31 million tons of cargo and 851,0000 vehicles.

Following the different transformations of the island, nothing remains of the kampongs (or villages) that used to be on the island. The residents have resettled onto the mainland although many of them still reminisce about their times on the island (see Abdul Halim et al 2016).

Pulau Keppel (Keppel Bay Marina, formerly Pulau Hantu)

Context

Pulau Keppel became prosperous due to the economic activities of the neighboring Keppel Harbour. A small island with a hill situated in between Pulau Ujong (mainland Singapore) and Pulau Blakang Mati, the island was used for ship building and ship repair by Keppel Shipyard until 2000. The island has since undergone extensive changes and is now a waterfront luxury development including high end restaurants and a marina for yachts.

Etymology

Formerly called Pulau Hantu, the island was renamed Keppel Island when the company that owned the island sought to change its name. The workers on the island also found the name "Pulau Hantu" or "ghost island" disagreeable. The Singapore government approved renaming the island in 1983, as there was another island in Singapore waters which shared its old name Pulau Hantu (see below).

Cultural inventory

Keppel Island is connected to the Singapore mainland by a suspension bridge called Keppel Bay Bridge. The island houses restaurants and a marina, as well as a designated fishing area and scenic viewpoints which overlook parts of the bay area such as Labrador Nature Reserve and the northern coast of Sentosa.

Pulau Renggis (Pulau Renggit), Pulau Selegu & Sarong Island (Pulau Berdaun)

Context

Three small islands are or were located between Singapore mainland and Pulau Blakang Mati (now Sentosa). Pulau Renggis has eroded into a patch reef over the years, while Pulau Selugu and Sarong Island have been merged with the northern coast of Sentosa through land reclamation. Pulau Selegu and Sarong Island were initially confused with one another, possibly due to their proximity, but historical maps show that they are distinct islands (Lim, 2022). Sarong Island was joined to Sentosa by tidal flats and a footbridge, with a three-bedroom bungalow at the top of a hill called the "White House" built by Frank B. Sewell, Senior Superintendent of Surveys of the Straits Settlements from 1927 to 1932. This was later purchased by socialite Christina Lee, who lived there before opening it as a luxury restaurant from 1967 to 1968. The island was acquired by the government in 1971. Pulau Selugu and Sarong Island were then merged with Sentosa by reclamation in 1978–1980.



Figure 41. Aerial image of Pulau Blakang Mati from the 1960s, as viewed from the west. Also visible, in order from foreground to background: Pulau Renggis, Pulau Selegu, Sarong Island, Pulau Brani, and Berhala Reping. Image from Sentosa Development Corporation.

Etymology

Like 'Seringat' above, the name Renggis might be derived from *ringgit*, the Malay word for money. The meaning of the name Selegu is unknown. Sarong Island was so named because socialite Christina Lee set it up as Singapore's first island getaway and recreational establishment in the 1950s. Initially wanting to call the island Pulau Chantek (or beautiful island), Lee's husband Christopher Stone proposed that it be called Sarong Island as the word *sarong* is recognizable to Westerners and easy to remember (Lim, 2022).

Cultural inventory

The former island, Pulau Renggis, has eroded and is now underwater, with no known items of human heritage value. The other two islands, Pulau Selegu and Sarong Island are now part of Sentosa. One of the pylons of the cable car route between Mt Faber and Sentosa now stands on the former Pulau Selugu, which is still covered in coastal forest.

Pulau Hantu (Pulau Hantu Besar/Pulau Hantu Kechil)

Context

Pulau Hantu is a single reef formation with two prominent islets, Pulau Hantu Besar and Pulau Hantu Kechil. It was enlarged through reclamation in 1974–1975 and is currently managed by the Singapore Land Authority (SLA) as a recreational area for day trips, snorkeling, scuba diving and other leisure activities. It is popular for muck diving as the small marine fauna is quite diverse and species rich.



Figure 42. Pulau Hantu viewed from the north. Photo courtesy of Nathaniel Soon.



Figure 43. Magnificent Carpet Anemone (Heteractis magnifica) and stranded Clown Anemonefish in the intertidal lagoon of Pulau Hantu. Photo courtesy of Nathaniel Soon.

Etymology

'Hantu' in Malay means 'ghost'. Two warriors were said to have engaged in a bloody battle with one another at sea, and when they died their bodies were transformed into the two islands. The larger warrior turned into Pulau Hantu Besar (big Pulau Hantu) and the smaller warrior turned into Pulau Hantu Kechil (small ghost island). Their spirits are said to still wander the islands to this day. Another account states that the island is "ghost like" because it would disappear during very high tides.

Cultural inventory

Pulau Hantu has a jetty and a small park with some signage for educating the public on safety and conservation. The waters around the island are a muck diving site. Despite the low visibility of the dive site, divers enjoy observing and photographing rich marine biodiversity in the area, such as colourful nudibranchs, echinoderms and corals.

Pulau Tembakul (Kusu Island/Pulau Tambakul/Governor's Island/Goa Island/Peak Island)

Context

See Peh (2019). Kusu Island is an 8.5 ha island resort situated 5.6 km south of Singapore mainland and just off the coast of Lazarus Island. There is a Chinese temple and three Malay shrines (or keramat) on the island which attract thousands of pilgrims every year during the ninth lunar month, sometime between September and October (Lu, 2012). Kusu means "turtle island" (龟屿) in the Hokkien dialect (prounounced guī yǔ in Mandarin Chinese).

The original Kusu Island on which the keramat were built was 1.2 ha. However, landfill and reclamation work in 1975 extended the island to a nearby coral outcrop where the

Chinese temple was located, expanding it into an 8.5 ha recreational island. During colonial times, the island was planned to be the burial grounds for people who died during their quarantine in St John's Island Island (Cornelius-Takahama, 2018). However, due to strong protests from prominent Chinese leaders at the time, who thought this to be in bad taste given Kusu Island's function as a pilgrimage site, the burial grounds were eventually located on the nearby Lazarus Island. Following the resettlement of the islanders on Lazarus Island, all burial grounds were exhumed and reburied on the mainland as mass graves.

According to signage outside the Chinese temple, the temple was built in 1923 from donations from an affluent businessman Chia Cheng Ho to honor the deity Tua Pek Kong, or the Nanyang Chinese God of Prosperity. Pilgrims and devotees can also pray and give offerings to Guan Yin, the Buddhist Goddess of Mercy. However, the original temple likely predates this, as a stele recording its renovation dates back to 1909 (Chia, 2009).

Etymology

Kusu Island has undergone several name changes. The earliest mention of Kusu was by Dom Jose De Silva in the early 17th century, where the Spanish Governor of the Philippines ran aground on Kusu reef in 1616. Thereafter, it went by the name of Governor's Island. It was renamed "Goa Island" by hydrographer James Horsburgh from the British East India Company in 1806. The island became a reference point for ships entering Singapore, and a signal station was built in 1822.

Several local legends recount that Kusu Island was once a giant turtle that, upon seeing the plight of sailors during a storm, transformed into an island to save them. The sailors came back to the island the following year to give offerings to the turtle island in thanksgiving. The island has become sacred ever since and became a site for annual religious pilgrimages. Other accounts tell a story of a deep friendship between a Malay man and a Chinese man who were caught in waves while on a fishing boat but were saved by a giant turtle who transformed into an island. The shape of the original island, comprising one forested low hill and a rocky outcrop, may have inspired this legend. The Malay name, Pulau Tembakul, means Mudskipper Island; it is not known if this was due to the presence of these fish, or perhaps the physical resemblance of the island to a mudskipper.

The theme of friendship between a Malay and Chinese man recurs in other stories of Kusu Island. When a ship grounded on the surrounding reef, two survivors swam to the island, one Malay and one Chinese, and survived on brambles and wild shoots. Their friendship lasted until they died.

170 years ago, two holy men, Dato Syed Abdul Rahman, an Arab, and Yam, a Chinese, were fasting and meditating on their pilgrimage to Kusu Island. Yam suddenly fell sick, and Syed prayed for him. A boat with food and water berthed on the island suddenly and with the fresh provisions, Yam regained his strength and recovered. The two holy men continued to visit the island to offer their thanks, and when they died, they were buried side by side on the island. The Chinese temple and Malay shrines were erected in their honor (Cornelius-Takahama, 2018). In 2022, a fire consumed the Malay shrines on the island although these have since been reinstated.

Cultural inventory

Pulau Tembakul is an important pilgrimage site for Chinese and Malay devotees. Every year, many religious believers visit the site to pray and pay homage at the temple and shrines.

During the ninth lunar month, around September to November, the island will have an open air hawker centre, which serves hawker fare to the island's visitors. There are also park facilities and beaches lining the coast of the island, which visitors can enjoy year-round, including benches, shelters, and a toilet.

In 2024, it was announced by the National Parks Board that the northeastern reefs of Kusu Island will become part of Singapore's second marine park.



Figure 44. The Tua Pek Kong temple on Kusu Island. Photo by Singapore Land Authority (SLA).



Figure 45. The original Keramat on the hill of Kusu Island, prior to the fire of 2022. Photo by Singapore Land Authority (SLA).

Pulau Satumu (Raffles' Lighthouse/Coney Island/Pulau Setamu, Setumu or Situmbu)

Context

Located 23 km southwest of Singapore, Pulau Satumu is the southernmost island of Singapore. Only Raffles Lighthouse staff and visitors with permission can access the site. Initially, the island was thought to be too small for the construction of a lighthouse, however, the position was optimal for the lighthouse and the foundation stone was laid on 24 May 1854. The light was installed in 1855. Today it is managed by the Maritime and Port Authority.

In 1977, about one hectare of land was reclaimed to provide recreational space for the island personnel. A lagoon was also constructed with shower and toilet facilities (Cornelius-Takahama, 2014).

Etymology

Formerly known as Coney Island, Pulau Satumu means 'one tree island' in Malay. The island name is possibly derived from 'satu' which means one, and 'tumu' which is a large mangrove tree that was found on the island (likely *Bruguiera gymnorhiza*).

Cultural inventory

The Raffles Lighthouse is still operating at Pulau Satumu and welcomes registered visitors to tour their facilities every second and fourth Saturday of the month. The National Parks Board conducts annual surveys here of mass coral spawning, with the help of volunteers and researchers, as its coral reefs are considered to be one of the richest in Singapore.



Figure 46. Raffles Lighthouse on Pulau Satumu. The intertidal lagoon and fringing coral reefs are rich in marine life. Photo by Maritime Port Authority (MPA).

Terumbu Pandan (Pulo Pandan/Cyrene Shoal/Cyrene Reef)

Context

Now a patch reef exposed only at low tide, Terumbu Pandan was formerly a vegetated low-lying island (Pulo Pandan). It was recorded in the 16th century as a critical navigational landmark marking the exit of the Selat Sembilan (the straits south of the Ayer Chawan archipelago, now Jurong Island) and the beginning of the Old Strait of Singapore (Keppel Harbour). In 1797 only one tree remained and by 1848, there was no more vegetation left on the island. However, it was recognised in the 1890s as having a high abundance of brightly coloured corals and shellfish, and as late as the 1960s, it was described as having "emerald waters" and "deep chasms which in good visibility could rival the view of the Grand Canyon"!

While the island eroded over the years and has become an intertidal reef flat, due to the wealth of marine life Ria Tan, a veteran conservationist, nicknamed it "the Chek Jawa of the South". Marine biologists have recorded 37 genera of hard corals and seven species of seagrass at this site, and there is an abundance of knobbly sea stars (*Protoreaster nodosus*) (Figure 47), and occasionally dugong feeding trails (Ng, 2017). This is despite it being located within the "industrial triangle" of Jurong Island, Pulau Bukom, and Pasir Panjang Container Terminal and surrounded by some of the busiest shipping channels in the world.





Figure 47. The seagrass meadows and Knobbly Sea Stars (*Protoreaster nodosu*s) of Cyrene Reef exposed at low tide. In the distance are the container terminals of Pasir Panjang (top) and the petrochemical refineries of Jurong Island (bottom). Photos by Jonathan Tan.

Etymology

'Terumbu' means an intertidal reef in Malay. Seashore pandan (*Pandanus tectorius*), a native plant which is found on sandy shores, may have been the origin of the reef's namesake. The name of the reef could also be linked to its location south of the Sungei Pandan river mouth on mainland Singapore. The name "Cyrene's Reef" first appeared in 1830 in a map by Captain Daniel Ross (Ng, 2017), but it is unknown why this name was given.

Cultural inventory

There is a large metal beacon at the eastern edge of the reef, testifying to its continued importance as a navigational feature. Artisanal fishermen using traditional bubu fish traps continue to visit the area.

Ayer Chawan Archipelago (Jurong Island, previously a cluster of approximately ten islands including Pulau Pesek, Pulau Pesek Kechil, Pulau Ayer Chawan, Pulau Sakra, Pulau Ayer Merbau, Pulau Meskol, Pulau Merlimau, Pulau Seraya, Pulau Mesemut Laut and Pulau Mesemut Darat)

Context

Formerly a cluster of islands which acted as a maze of hideouts for marauding pirates, Jurong Island is an amalgamation of many islands that was transformed over the years through land reclamation and island mergers. Since the 1970s, the petrochemical industrial boom saw an increase in demand for industrial space in land scarce Singapore. However, because of space

and safety constraints, coupling land reclamation and construction of these petrochemical facilities on offshore islands was decided by the then government officials and advisers (Lim, 2016).

Most of the now former islands (such as Pulau Seraya, Pulau Pesek, Pulau Bakau, Pulau Sakra, Pulau Ayer Chawan and Pulau Merlimau) were previously inhabited by *Orang Suku Laut* as well as Malay and Chinese communities, their main livelihoods being that of fishing and boat building. Like many of the other islands, each island had houses built on stilts along the coasts, some with their own respective schools, community centres, mosques and burial grounds. The villagers of Pulau Seraya used to participate in the Pesta 5S along with villagers from Pulau Sekjiang (St John's and Lazarus), Sakeng, and Semakau. These island communities were resettled onto the mainland when the decision was made to develop and merge the islands into one.

Around 1970, three of the southwestern offshore islands already housed oil refineries, Esso on Pulau Ayer Chawan, Singapore Refining Company on Pulau Merlimau and Mobil Oil on Pulau Pesek. These refineries placed Singapore as one of the top three oil refining centres in the world. To stay at the cutting edge of the business, Singapore planned to expand its industrial and oil refining capabilities with the construction of Jurong Island. In 1991, the Jurong Town Corporation (JTC) was chosen to oversee the construction and reclamation of Jurong Island (Lim, 2016).

The land reclamation project saw the merger of ten islands, including Pulau Pesek, Pulau Pesek Kechil, Pulau Ayer Chawan, Pulau Sakra, Pulau Ayer Merbau, Pulau Meskol, Pulau Merlimau, Pulau Seraya, Pulau Mesemut Laut and Pulau Mesemut Darat. Jurong Island today has been segregated into nine districts each bearing the name of the island it used to be, except for Pulau Meskol, a name which has unfortunately been lost with the creation of Jurong Island (Lim, 2016).

In response to the September 11 terror attacks, Jurong Island was designated as a protected place in October 2001. Only staff and visitors with permits can enter the island, and all photography and videography in and around the island premises are expressly forbidden. Visitors caught photographing or filming the area will have their visitation permits revoked (Lim, 2016).

Etymology

While the origins of the names of some of these islands remain obscure, a few speculations may be put forward. Seraya, a name for various dipterocarp trees, suggests that the island may have once supported a dipterocarp species. The only one now known from an undisclosed location in the southern islands is *Dipterocarpus chartaceus*, a species known to prefer coastal habitats.

The name Ayer Chawan refers literally to a water cup ('ayer' refers to water which could also be a reference to the presence of natural wells on the island, one of the reasons why the island was inhabited in the first place).

Merlimau is the Malay name of a plant, the false lime *Gelonium* spp. 'Limau' means lime in Malay although the prefix 'mer' suggests that its fruits are similar to but not identical to lime.

Ayer Merbau refers to the Malay name of a tree, *Intsia* sp. Pulau Sakra may be named after the presence of monkeys (or 'kera' in Malay) on the island. The name Pesek is derived from 'mengesek biola' (or 'to play the violin'). 'Pesek' is also a Bugis word referring to coins with a hole in the middle.

Meskol is derived from the Malay word 'miskol' (of *Orang Suku Laut* origin) referring to a large water vessel made from a coconut shell with a narrow orifice.

The islands had distinct identities with names referring back to various origins (Malay, Bugis, *Orang Suku Laut*) before they were all merged into one to become Jurong Island. 'Jurong' itself refers to the district of the southwestern mainland Singapore, largely industrialized. The name Jurong may be derived from the Malay words *jerung* which means shark, *jurang* which means gorge, or *senjuru* which means a corner of land. Such interpretations have little relevance to the original archipelago since the name was merely transposed from the mainland locality (Lim, 2016).

Cultural inventory

There are two fire stations, a café, and a restaurant on Jurong Island, as well as several dormitories available for workers who do not commute between island and mainland. The Jurong Island Highway connects the island to the mainland. Jurong Island houses more than a hundred companies which utilize the petrochemical refinery infrastructure installed on the island.

Pulau Bukom (Pulau Bukom, Pulau Bukom Kechil, Pulau Ular, Pulau Busing)

Context

Formerly a cluster of four islands, Pulau Bukom, like Jurong Island, was reclaimed into a single large island as the growth and demands of the petrochemical industry required more space for their facilities. Its history, however, goes further back, having previously been the home of native Malay inhabitants who chose to live on the island due to the availability of freshwater. In 1891, Singapore was selected by British merchants as a base for storage of kerosene sourced from Russia. When the then government rejected the application for kerosene to be stored on the mainland, Bukom was deemed an appropriate alternative as it had a harbour of suitable depth and its proximity to the mainland facilitated local distribution of kerosene (Cornelius-Takahama & Loo, 2016).

After purchasing the land, the merchant and agency house Syme & Co. began construction of the tank depot, alongside complementing facilities such as a wharf, pipelines to transfer oil from the ship to the storage tank, and lighters. The tank had a capacity of 4,500 tons. In September 1892, the first shipment of kerosene arrived on the *S. S. Murex* (Cornelius-Takahama & Loo, 2016).

As the business grew, the merchants formed a separate company called Shell Transport and Trading in 1897. The company eventually merged with the Royal Dutch Petroleum Company in 1907, forming the world's major energy business today, known as Royal Dutch Shell. Pulau Bukom, under the purview of Shell, continued to develop over the years through land reclamation works. By 1942, the island housed 60 storage tanks and five wharves (Cornelius-Takahama & Loo, 2016).

Prior to the Japanese Occupation (1942–1945), the British torched all the fuel in Bukom to ensure their enemies could not use their supplies. The island was subsequently used as a prisoner-of-war camp for about 300 Australian and New Zealand soldiers, who were tasked with salvaging the wreckage. It was not until 1950 that Shell employees returned to repair the damage and set up the oil storage facilities for operations (Cornelius-Takahama & Loo, 2016).

In 1961, Shell built Singapore's first oil refinery on Pulau Bukom. Over the years,

another four oil refineries were constructed, alongside other facilities that assisted in the manufacture of petroleum gas, lubricants and hydrocarbon solvents.

Over the course of these developments and reclamation of the islands, the islanders were resettled. Some chose to move to the mainland or to the nearby Pulau Sakeng (see above). There were also those who chose to stay on the island itself, along with other Shell employees and their families. By the 1960s, there were as many as 5,000 residents on the island. However, as the oil refineries and manufacturing facilities expanded, the Shell employees and other islanders eventually had to resettle on the mainland to make space for more construction (Cornelius-Takahama & Loo, 2016).

A small islet, Pulau Anak Bukom, is joined to the southeastern corner of Pulau Bukom by an intertidal flat. A small cluster of mangroves is present that is inhabited by a heronry of grey herons, and it is fringed by coral reefs.



Figure 48. View of Pulau Bukom, now a site for petrochemical refineries. Photos by Lua Hock Keong.

Etymology

The island's name may have been a reference to the Malay name for a seashell called *rangkek bukom*. It could also have derived from the word 'hukum' (or to judge) as it is believed by some that there used to be trials conducted on the island.

Cultural inventory

Pulau Bukom houses the Shell oil refinery, storage tanks for natural gas, a mosque, a Hindu temple, and offices. Previously there were residential spaces at Bukom, equipped with amenities and recreational facilities such as a swimming pool. However, the Bukom residents eventually relocated to the main island, and workers would make a daily commute from the main island to the Bukom refinery by ferry. In 2024, it was announced that Shell would be selling the complex to a joint venture of Indonesian chemicals firm PT Chandra Asri and global trading house Glencore, bringing its more than 100-year history on the island to a close.

Pulau Sebarok

Context

Situated to the east of Pulau Semakau and southeast of Pulau Bukom, Pulau Sebarok is another offshore island that was transformed into an oil storage facility in the 1930s (Tan, 2018). It was impacted by an oil spill in 1975 when a Japanese super tanker, *Showa Maru*, collided with the island and spilled 3,300 tons of crude oil into the surrounding seas (Kiong & Saparudin, 2021). The island and its oil storage facility is currently run by Singapore Petroleum Company. Rich coral reefs with high coral cover continue to fringe the island despite its industrial use.

Etymology

The meaning of the name *Sebarok* is not known. However, *baroh* in Malay means lowlands (Low, 2005).

Cultural inventory

There are roads and berths to facilitate transport of oil and its related products and maintenance of facilities throughout the island.

Pulau Senang (Barn Island)

Context

Located 24 km from the mainland, Pulau Senang is an 82 ha island with substantial mangroves and coral reefs, and a part of the military live firing zone. Between the 1830s and 1850s, there were plans to construct a lighthouse on either Pulau Senang or Pulau Satumu. Pulau Satumu was deemed the better site, and Raffles Lighthouse stands there today (Lim, 2018).

According to maps from 1939, there was a village, Kampong Manlang, on the northern coast. During the Second World War, Pulau Senang was used as a hard labor camp. Hundreds of Javanese were forced to farm the island, and many died from malnutrition and overwork. Human remains were found buried beneath the beaches, and the dark history of the island deterred people from settling on Pulau Senang. The island was also associated with a Malay folk legend, which recounted that there was once a Malay settlement on Pulau Senang. An old man came to the settlement begging for water, but as the village was experiencing a drought, they refused to provide any assistance. The old man then cursed the islanders and left. The island was believed to be cursed thereafter, and any who tried to live on Pulau Senang would either fall terribly ill or die (Lim, 2018).

In 1948, there were records of a Eurasian family settling on the island. This was Adolf Monteiro, a former keeper of the Raffles lighthouse who did not want to move back to the mainland following the end of his work tenure. He and his family built a house on stilts and survived on rearing livestock, selling copra and fishing. Some Chinese men also came to live on the island three years later. However, in 1960, as Changi Prison was overcrowded, the government made plans to convert Pulau Senang into a penal settlement to resolve the issue. Thus, the residents of Senang relocated to Pulau Pawai or the mainland (Lim, 2018).

In early days, the penal settlement was hailed as a resounding success. The superintendent and his officers ran the island penal settlement with the goal of rehabilitating the detainees to become "useful members" of society. Inmates were tasked with the construction of the island's basic amenities such as dormitories, a hospital, recreational grounds, and offices. The detainees also grew vegetables and reared livestock. They were allowed to go back to the mainland once a month to visit their relatives. By 1962, about 200 detainees had done

well enough to return to society (Lim, 2018).

On 12 July 1963, the penal settlement was burned to the ground when a group of inmates started a violent revolt, killing the superintendent and two attendants. 18 men were convicted of murder and hanged. Subsequently, the Pulau Senang penal settlement was closed (Lim, 2018). In 1968, jurisdiction of Pulau Senang was handed from the Singapore Prisons Department to the Ministry of Interior and Defence (Lim, 2018). Since 1984, it has been used by the Singapore Armed Forces for live firing exercises.

Etymology

Pulau Senang means "isle of ease" in Malay, but it was also referred to as Barn Island during the 19th century by European explorers. The Malay name for the island has become more commonly used after the 1920s.

Cultural inventory

Pulau Senang is now part of a military training area. Along with Pulau Salu, Pulau Pawai, Pulau Berkas, Pulau Biola and the western part of Pulau Sudong, Pulau Senang forms the New Southern Islands Live Firing Area used by the Singapore military. Access to the islands and the surrounding intertidal and marine areas are prohibited.

Pulau Pawai (Alligator Island)

Context

Pulau Pawai is located southwest of the Singapore mainland, north of Pulau Senang, and is considered to have some of Singapore's best coral reefs. It has a 44 m summit, which made it conspicuous to sailors, has substantial mangroves, and is fringed by coral reefs. The island's land area is about 112 ha, a large portion of which is mangrove. Pulau Pawai was inhabited by a Malay village based on records in 1898 by the then governor of the Straits Settlement. Most of the islanders were fishermen. In 1925, there was an attempt to set up a poultry farm on the island (Cornelius-Takahama, 2018). A 1939 map shows a village called Kampong Sebelah Barat.

Pulau Pawai, the Southern Islands and surrounding reefs are recognized for their rich marine biodiversity. In 1934, Raffles Museum curator N. Smedley spent four days collecting specimens from the reefs there. In 1989, Chia Lin Sien from the National University of Singapore proposed that Pulau Pawai, along with Pulau Senang, Pulau Sudong and Pulau Semakau should be set aside as a marine park for environmental and biodiversity conservation. The calls to conserve these coral reefs culminated into the 2009 Singapore Blue Plan, which was the most comprehensive marine conservation proposal at that time (Cornelius-Takahama, 2018).

Between the 1960s and 1980s, Pulau Pawai was a popular spot for scuba diving, skin diving, underwater spearfishing, and other water sports. However, in 1971, the New Southern Islands Live Firing Range was announced, and Pulau Pawai was gazetted for military use (Cornelius-Takahama, 2018).

Etymology

The word *pawai* literally translates to a cortege, procession or parade for the raja (Low, 2005). The other name 'Alligator' could have been a reference to the shape of the island.

Cultural inventory

Currently part of the Southern Islands Live Firing Range, there are military installations on the island and access to the public is restricted. Boats will patrol the surrounding area to ensure that there are no trespassers.

Pulau Sudong

Context

Situated to the southwest of Singapore and fringed by surrounding reefs such as Terumbu Salu and Terumbu Bemban, Pulau Sudong is a 208.5 ha island and a part of the Southern Islands Live Firing Range. The island was formerly inhabited by a community of Malays and four Chinese families, who lived in houses on stilts (Chew 1982). The islanders made a living by fishing and collecting corals and weeds from the sea, which they sold to businesses in Singapore. A government malaria research station was also set up here in the late 1940s. There were about 393 residents on Pulau Sudong in 1960 who lived off fishing and foraging (Cornelius-Takahama, 2016). However, attracted to prospects of a steady income, many islanders were drawn to work at the oil refineries at Pulau Bukom in the 1970s.

The islanders used to participate in the annual Pesta 5S, which rotated annually around the five islands. The last such event was held in 1975 on Pulau Sudong (Cornelius-Takahama, 2016).

In 1976, the island was slated for development into a recreational area, with plans to reclaim land on the island and pass it to Sentosa Development Corporation. The land reclamation was approved, but instead of recreation Pulau Sudong was allocated to the Ministry of Defence (Cornelius-Takahama, 2016) and a military aircraft runway was built. As a result, the islanders were resettled on the mainland although a tiny piece of land was awarded to them at West Coast Park so that they could continue with their boat building activities. In 2024, it was announced by the Housing and Development Board that further reclamation would be done to upgrade the runway and improve flight safety.

Etymology

The word sudong is related to *tudong*, which in Malay means "something used as a cover" and commonly refers to the headscarf used by Malay-Muslim women. The name could be derived from the shape of the island and its surrounding reef (Cornelius-Takahama, 2016).

Cultural inventory

There is a landing strip on the island to serve military aircraft, as well as two piers, Pulau Sudong Pier and Old Pulau Sudong Pier. Pulau Sudong is part of the Southern Islands Live Firing Area and access to the island is prohibited to the public.

Sultan Shoal (Terumbu Karimum or Trumbu Carimon)

Context

Sultan Shoal is situated to the southwest of Singapore, currently sandwiched between reclaimed industrial land in Tuas and the western coast of Jurong Island. The Sultan Shoal lighthouse was constructed in 1895 to replace an existing beacon which was placed over a 0.6-hectare island shoal that frequently made the news for ships that ran aground on it. The lighthouse helped to mark the western entry point into the Singapore Strait (Lim, 2021). There is also a swimming lagoon on the island for personnel.

Due to the extensive tracts of reclaimed land around the Sultan Shoal lighthouse, the lighthouse no longer serves the port as it used to. In 2014, the National Heritage Board opened the lighthouse to the public for the first time and organized tours of the lighthouse as part of Singapore's HeritageFest (Wong, 2014).

Etymology

The shoal was named Sultan Shoal because of the name of the ship that ran aground upon it in 1789 (Ng, 2017). The old name Terumbu Karimun refers to it lying in the general direction of Pulau Karimun, a much larger island within Indonesian waters.

Cultural inventory

The Sultan Shoal Lighthouse is a 21m tall masonry tower, with both Victorian and Oriental architectural elements. It is white with a red roof, which resembles colonial bungalows. The lighthouse is equipped with transmitters that are detectable by ships, and a solar powered LED lantern (MPA, 2021).



Figure 49. Sultan Shoal. Photo by Jerome Lim.

Discussion

Even as many of them are no longer accessible to the public or have been merged together into one, the offshore islands – those located to the south of Singapore as well as those in the northeast although these have not been covered by this review – that render Singapore as more than just an island nation, but a nation of islands, hold very rich cultural and natural histories, geographies and biodiversities that should not be forgotten.

The names of most islands have uncertain origins (Haughton, 1889; Low, 2005). Many of the islands also have more than one name, depending on who you ask. Many past names might have been lost without ever being recorded while others may have been elided over time due to land reclamation and mergers with other islands. This is an inevitable consequence of a mixed and mobile ethnic community, the corruption in the pronunciation of names, misunderstanding of which island was being referred to, and the transient lifespan of both published and unpublished names. For example, Alligator, Barn and Coney Islands (respectively P. Pawai, P. Senang and P. Satumu) had names that might simply have been bestowed by a transient English-speaking visitor on the principle of A, B, C; those names were hardly used and quickly disappeared although many former islanders today still refer to other islands by their original names (e.g. Pulau Sekijang Bendera rather than St John's Island). Explanations of names such as P. Bukom, P. Seringat and P. Subur are tentative and pronunciations might have changed. Two islands had the name P. Hantu, so one was recently renamed. That example, and the names of Pulau Renggis (Renggit) and Pulau Seringat, suggest the possibility of past accidental confusion between islands. The name Pulau Jong refers to that island's high-sided boat-like profile, and the story of it being the remains of a ship turned to stone is common to many similarly shaped hills (mostly limestone karst hills) throughout Southeast Asia. Stories about the origin of the names P. Brani and P. Blakang Mati have been retrofitted and probably overlook a much simpler navigational reason for the two names. Yet, unpacking these names also reflect how there used to be different communities living on the islands (e.g. Malays, Chinese, Bugis, *Orang Suku Laut*, etc.). They also provide valuable clues as to what these islands may have looked like before they were transformed due to the many exigencies of the nation-state.

As the offshore islands were vacated over the years, there is also the danger that Singaporeans forget the many of them held communities with their own distinct lives, livelihoods, and worldviews (Chew 1982). More at risk of being forgotten would be communities whose lives did not centre on land but the waters that surround the offshore islands (such as the *Orang Suku Laut*). In addition to being connected to the mainland, many also had networks that extended beyond the national borders of current Singapore or even that of British colonial Malaya. This is a pertinent reminder of how the history of Singapore actually goes further back than the 1819 we frequently hear being referenced in previous iterations of the Singapore Story. The public not being able to visit these islands (due to their contemporary uses as live firing areas, conservation, or as part of the petrochemical industry, etc.) also add to this amnesia held by contemporary Singaporeans – 'out of sight, out of mind'. Fortunately, many of these communities still keep in contact with one another, occasionally meeting up to not only maintain ties but also to reminisce about their island pasts, passing the memories down to the younger generations (see Muzaini et al. 2019). Through the efforts of NParks and groups such as the Friends of the Marine Park, much has also been done to ensure the dissemination today, via their tours and guides, not only of the natural heritage of these islands but also their cultural significance.

The current vegetation of the southern islands has been influenced by past use, and past use has been influenced by topography. An example is Pulau Jong, lacking any convenient landing points, and with sides too steep to be climbed without equipment. As a result, human activity has hardly affected the vegetation at all. A contrary example is P. Seringat, recently subjected to reclamation, extinguishing all prior native vegetation. The area reclaimed to form Pulau Jurong, Bukom and Sebarok, previously 13 islands, has been

so heavily industrialized that natural vegetation (as well as any cultural remnants) was wiped almost clean. A different history has affected Pulau Sakeng and Pulau Semakau, as new but transient habitats were created by ponds and ashfill, former mangrove was lost, but new areas of mangrove were planted, while the rising ground on the western side of P. Semakau still has disturbed vegetation with several plant species of conservation importance.

Inevitably the remaining vegetation has affected the fauna that is able to survive, as detailed in other papers in this volume. Key factors are the height and complexity of dryland forest, the extent of mangroves, and the creation of open and grassy habitat. There is almost no trace of primary terrestrial rainforest anywhere on the southern islands. As a result, the only elements of forest fauna are those that are able to tolerate disturbed secondary forest, or those that are able to recolonise isolated forest patches from sources elsewhere.

At various times, islands have eroded down to subsurface reefs. The history of Terumbu Pandan (Cyrene Reef, formerly Pulau Pandan) has been recorded (see above) and so has the more recent erosion of Pulau Berkas. The geological material of the islands is mostly soft and erodible (Chua & Ikhsan, 2025), and erosion can be seen in action on Pulau Biola – perhaps the next to go? Pulau Tekukor is a narrow island with active erosion on its west coast, suggesting that it too might be lost one day. From this perspective, one can hypothesize that some reefs might once have been unrecorded (but not unnamed) islands before written records and maps became common. The three reefs at Terumbu Pempang are likely candidates.

The history of the Southern islands therefore is also one of settlement by different ethnic communities at successive times, followed by displacement to the mainland either because of environmental problems (erosion, water supply) or because of job opportunities on the mainland, or because of land requirements for industry, defence, and recreation. It is a history of what we have lost along the way of becoming the success story that Singapore is today, as much as it is a reminder of what we can still do today to ensure we maintain whatever (of nature, of culture) that we have left.

ACKNOWLEDGEMENTS. A full list of those acknowledged for supporting and taking part in the Southern Islands Biodiversity Survey is given by Tan et al. (2025).

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