

F. Personal Reflection

From the fieldwork, I learned that ECP is important as it is a recreational center for events such as jogging, attracts more than 7 million people a year (Goh Timothy, 24/11/2019) and protects the inland from getting flooded as Singapore experiences rising sea levels (0.5m by 2050 (Cheryl Tan, 2022)) as most of Singapore is less than 15m above sea level. If Singapore is flooded, it will cause buildings inland to be relocated, and cause extensive damage to both the reputation of using Singapore as a headquarters due to the risk of flooding and the economy. ECP also contributes to 0.1% to 0.3% of annual GDP a year (Euston Quah, 1999).

The ECP is protected through various measures such as breakwaters, groynes, and seawalls. The breakwaters are seen to be effective to protect the coast, as seen in **Figure 5** (Images from Maxar Technologies in Google Earth), where sand of width 3 meters and length of 15 meters is observed to be formed behind the breakwaters. In **Figure 4**, groynes are observed to have sand deposited at its sides at the month of April. However, this is not a sustainable solution as breakwaters are very expensive (\$40,000 to \$100,000 each (WH Tutuarima, 2010)) and vandalism such as breaking the rocks will wear down the breakwaters along with erosion, causing it to be replaced. There are also large patches of vegetation on the beach, which is a soft engineering measure. This is sustainable as the vegetation helps to hold on to the sand, reducing erosion. Trees are observed to reduce erosion by wind. However, it is relatively hard to implement soft engineering measures as corals are near turbulent waters caused by ships which will cause corals to break and mangroves are unsightly, which will reduce the attractiveness of ECP over time to tourism. Hence, although breakwaters are not sustainable, the most viable solution is still to repair breakwaters to reduce erosion over time as Singapore has \$5 billion dollars allocated to coastal protection (Audrey Tan, 18/02/2020) which is enough to repair the breakwaters as soft measures apart from vegetation cannot be implemented.

In conclusion, there is no perfect coastal management features, and they must be used to supplement each other to ensure the value of east coast park overtime to maintain its value.

Sources:

1. Goh, T. (2019, November 23). New Park for cyclists opens at East Coast. The Straits Times. Retrieved April 7, 2022, from <https://web.archive.org/web/20191128091142/https://www.straitstimes.com/singapore/environment/new-park-for-cyclists-opens-at-east-coast>
2. Xi, T. F., & Yangchen, L. (2021, December 6). As sea levels rise, Singapore prepares to stem the Tide. The Straits Times. Retrieved April 7, 2022, from <https://www.straitstimes.com/singapore/as-sea-levels-rise-singapore-prepares-to-stem-the-tide>