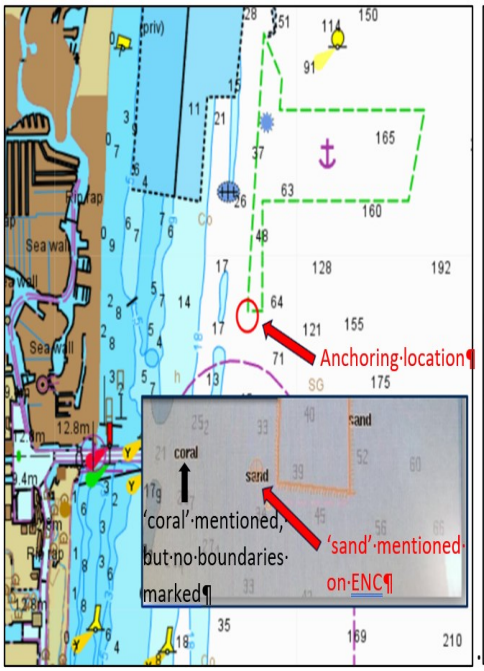
Damage to coral reefs caused by anchoring outside designated anchorage

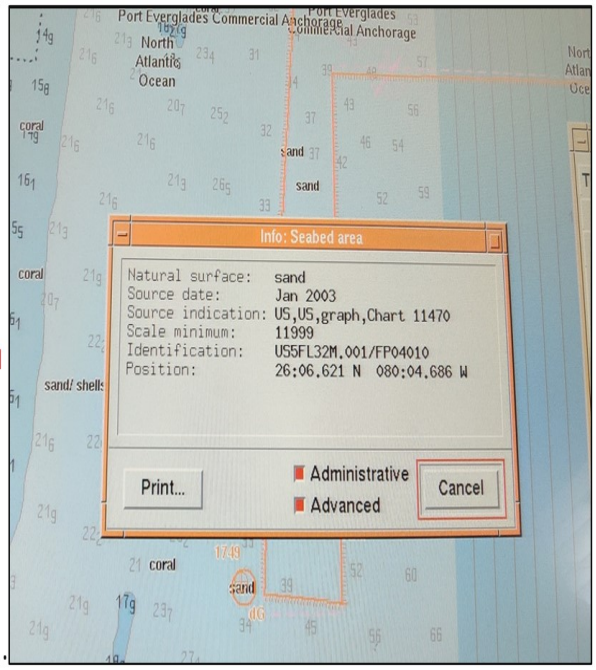
Vessels should not anchor outside designated anchorage areas in regions where coral reefs are known to exist to avoid damaging them and being exposed to fines by authorities.

Published 10 July 2023

Case study: A congested anchorage

A vessel arriving at Port Everglades intended to anchor in the designated anchorage, but upon noticing that that there were many vessels already anchored there, the Master decided to anchor just outside the southern boundary of the anchorage so as to maintain a safe distance from other vessels. The seabed was shown to be 'sandy' on the electronic charts which were being used by the vessel *(see images below)* . There was another marking on the chart showing 'coral reefs' but that was some distance away from the intended anchoring location. The Master informed the pilot station of the anchoring position and then anchored the vessel.





Local law on anchoring outside designated anchorages

Since 2008, there is a provision in the US Coastal Law (navigational regulations 33 CFR § 110.186 published in Chapter 2 of the U.S Coast Pilot for this area), that commercial vessels in the Atlantic Ocean in the vicinity of Port Everglades shall only anchor within the marked anchorage areas, except in cases of emergency or with prior approval from relevant authorities. If the regulations are not complied with, the vessel and/or the owners can face a claim for damage to the reef and a separate civil penalty.

Investigation by local authorities

The Florida Department of Environmental Protection Coral Reef Conservation Program's (FDEP CRCP) Reef Injury Prevention and Response Program technician (RIPR) observed online that the vessel had anchored outside of the designated commercial anchorage and potentially on coral reef habitat. The RIPR technician obtained the vessel's AIS track information to ascertain the vessel's path, exact anchoring location and the swinging pattern. An in-water investigation was carried out to check for any potential damage to coral reef resources.

RIPR program divers visually confirmed damage to the reefs at the expected anchoring location and documented it with digital photos taken during the dives. After examining all vessels and associated position tracks, the vessel in question was found to be the only vessel to anchor in the incident location during the relevant period.

Reef damage

The FDEP CRCP defines injury to coral reefs by four classes based on the expected recovery times of organisms and the increasing severity of injury. These are:

• *Class 1*
injuries are the least severe with the shortest expected natural recovery time, including damage in the form of displaced sand and rubble.

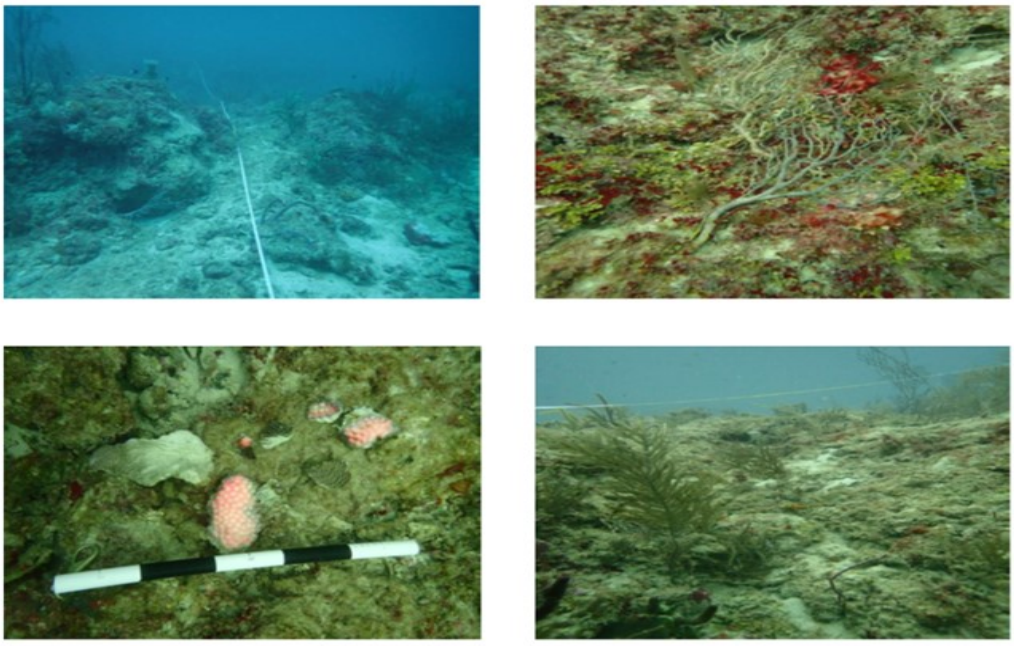
• *Class 2*
injuries are mildly severe and include damage in the form of scraped organisms or substrate, and sheared organisms.

• *Class 3*
injuries are moderately severe and include damage in the form of dislodged organisms, transferred bottom paint, and scarred substrate.

• *Class 4*
injuries are the most severe with the longest expected natural recovery time, including damage in the form of fractured stony corals, fractured hard substrate, and burial of reef resources.

The damage observed at the site appeared to be consistent with a large-scale swing of anchor chain across the reef. Florida Department of Environmental Protection's conclusion was that the vessel had caused irreparable harm to the coral reefs with Class 2, 3 and 4 injury types. As a result, the owners were facing a heavy compensatory damage claim and a financial penalty.

Due to the nature of the injury, it was not expected that any coral remediary measures would significantly minimize the loss of ecological services provided by the injured organisms. Therefore, in this particular case, the FDEP CRCP did not require primary restoration of the incident site.



10 square meters of coral reef were damaged adjacent to the AIS tracks of the vessel. (Picture source: FDEP CRCP investigation report).

Recommendations

Considering the severity and possible consequences of the allegation, Gard recommends:

• Never drop anchor out of anchorage areas, especially if close to natural habitats such as coral reefs/marine reserves etc. Particular attention to be given especially in the USA (California and Florida) and Australia.

• If anchorage area is full or there is not enough safe distance to drop anchor, strongly recommend Master consider drifting option rather than any other risk. Mariners should always request port control to advise the vessel of an alternative anchoring location. It is advisable to always check the seabed at the anchoring location and in its vicinity.

• Owners and managers should also make sure that their safety management procedures on voyage planning and anchoring include guidance on the above.

The anchor and anchoring mechanisms and procedures are crucial elements in securing safe operation of the ship. Our anchor awareness campaign is free to download and share. The campaign identifies the most frequent technical and operational issues involved in incidents with anchors and anchoring operations.