

Hi everyone,

On July 7th, a 165 foot boat anchored on the reef at Muskmelon Bay, near Crab Cove, in 25 feet of water. It just happened to be Marine Science Month and the boat just happened to be anchored on one of our study sites where we have monitored the coral reef community for the past 12 years. The boat came into Muskmelon Bay in the afternoon and left the next morning. We have a photo of the boat at anchor just before it left. That day we searched and easily found the area where the boat laid its three anchors. The damage, caused mostly by the anchor chains was striking and covered an area of about 2,700 square meters.

Since then we mapped the area of damage, photographed damaged corals, and counted and calculated the proportion of broken corals to unharmed corals inside and outside the damaged area. I met with the captain of the boat and then with the owner and have now prepared a report of the event which I hope will serve as a wake-up call to BVI government representatives who are currently encouraging mega-yacht visitation without considering where the yachts will set their anchors. All of this is articulated in more detail in the attached article and I have also attached a couple of photos. More photos of the damage can be viewed at

<http://www.irf.org/guanareefdamage.html>.

Hope all is well with you.

Love, Lianna

Large Boat Damages Coral Reef in BVI Fisheries Protected Area

Massive damage was inflicted upon one of the BVI's most beautiful coral reefs in a quiet incident last month. Sadly such incidents will continue to occur with even greater cumulative impact as the BVI invites mega-yachts to our waters.

On July 7th the Holo Kai, a ship of 165 feet in length, sailed into Muskmelon Bay on Guana Island, where it dropped two very large bow anchors in a small patch of sand, then backed up as it layed out 150 feet of heavy chain across the coral reef and finally placed a third, stern anchor with heavy chain lying across a deeper part of the coral reef.

Muskmelon Bay, because of its healthy coral reef and abundant fish populations, is a recently-declared Fishing Priority Area, a popular dive site, and, as a result of the new Fisheries Regulations, a site where any anchoring is illegal. Smaller boats anchoring and causing damage in Muskmelon Bay and other protected marine areas mostly go unreported, but marine scientists on Guana observed the Holo Kai's position the morning after it anchored in Muskmelon Bay and reported the event to the Conservation and Fisheries Department. These scientists had surveyed coral reefs in this same area only two days earlier and knew that the ship was positioned over a healthy and diverse community of large corals. In fact, the coral reef at this site has been monitored annually since 1992, providing abundant evidence for its long-term vitality. This pre-existing information on the state of the reef provided a rare opportunity to precisely determine the destructive effects of anchoring.

Though the ship departed early on the morning of July 8th, the marine scientists had located its position in the water and found a correspondingly large area of severely damaged coral reef. Brain corals the size of large boulders were severely scraped; medium-sized and smaller coral heads were broken or completely overturned; sea fans and soft corals were flattened. The most visually dramatic damage was evident in broken columns of pillar coral that stood three feet high the day before. Photographs of this damage can be viewed on the internet at <http://www.irf.org/guanareefdamage.html>.

The area of continuous damage caused by the Holo Kai anchors measured 30,000 square feet, more than 2/3 of an acre. Broken corals and sea fans covered roughly one-third of the bottom within this area. Virtually all of the large coral colonies were overturned or broken and are now dying. The incidence of damaged corals inside this area was more than ten times that recorded in nearby areas, where some coral damage may be due to the anchors and chains of charter yachts, representing another point of concern. The potential for recovery from such damage is low because corals grow extremely slowly (most grow less than 1/2 inch per year).

Several countries have begun to fine boats for causing damage to reefs. The Belize government, for example, charged a fine of \$75,000 for each of two incidents of anchor damage in 1997, one caused by a 282-foot sailing ship and the other by a 185-foot schooner. The Windspirit paid \$350,000 to the US government in a court settlement after it dragged anchor in 1988 across a reef in the Virgin Islands National Park, St. John. Fourteen years later, biologists from the VI National Park found no sign of corals recovering or re-growing in the damaged area..

The damage at Muskmelon Bay occurred despite the fact that the captain of the Holo Kai thought that he had taken all precautions to avoid environmental damage--checked the charts for any indication of a no-anchoring zone or protected area (these are not currently indicated on any BVI charts); used sonar to determine the nature of the bottom, which showed up as "rock" (much of the hard ground in BVI waters is the living "rock" produced by corals, but he and many other visiting captains are not aware of this); placed his two bow anchors in sand (but did not concern himself with the heavy chain between the anchors and his ship). The mission of the Holo Kai in the BVI was one of conservation and research, and the captain was very concerned about the damage he had caused when notified.

In the case of the Holo Kai, a simple indication of the location of Fisheries Priority Areas and Marine Protected Areas on charts or other documents given to captains when they check in at Customs would have prevented this particular tragic incident. But, at present there is no organized effort to disseminate such information effectively. Furthermore, there are many sensitive reef and seagrass areas in the BVI that are not afforded special protective designations. Large boat anchors can destroy these areas in a few hours.

We are therefore faced with an impending tragedy as the BVI makes plans to accommodate mega-yachts. Mega-yachts are too large to use the existing moorings system, which accommodates boats up to 60 feet in length. The incident of the Holo Kai should be taken as an urgent warning that the BVI must find the means to control boat anchoring and limit anchoring to large sandy areas where the potential damage to our marine resources is low. Healthy coral reefs, such as Muskmelon Bay, are too valuable to the BVI to allow their destruction by uncontrolled visitation.





Coral Damages Inflicted by Yachts Anchoring on Corals at Guana Island, British Virgin Islands

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The damage from large ships can be orders of magnitude worse than that from small boats -- sometimes the actual framework of the reef is smashed--something that will never recover. Smaller boat anchors and chains can overturn corals but generally don't destroy thousands of years of reef accretion, as seen in the pictures below.



*Private research vessel **Holo Kai**, anchoring in the midst of the mixed reef in Muskmelon Bay, Guana Island, British Virgin Islands.*

This is a prohibited anchorage, based on regulations promulgated by the BVI Department of Conservation and Fisheries in 2003.



*Pillar corals and miscellaneous soft corals toppled by one of three anchor chains used by the **Holo Kai**.*



Sea fans and other soft corals uprooted by Holo Kai anchor chain.



Hard corals scraped by anchor chain.



More hard corals scraped by anchor chain.



Hard and soft corals flattened by anchor chain.



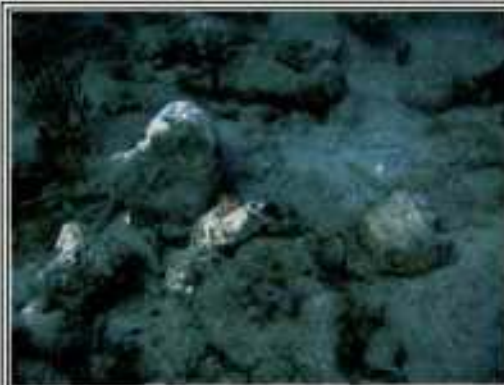
Hard and soft corals flattened by anchor chain.



Hard and soft corals flattened by anchor chain.



Photos that were taken on Aug 7 in Muskmelon Bay. It was along the perimeter of the sand channel/patch so maybe smaller yachts dragged anchor into the reef or their chains dragged.



Smaller yacht anchors have also inflicted a lot of cumulative damage to corals in Muskmelon Bay, on Guana Island, in the British Virgin Islands.



Observers are unable to explain why the area has become a popular anchorage.



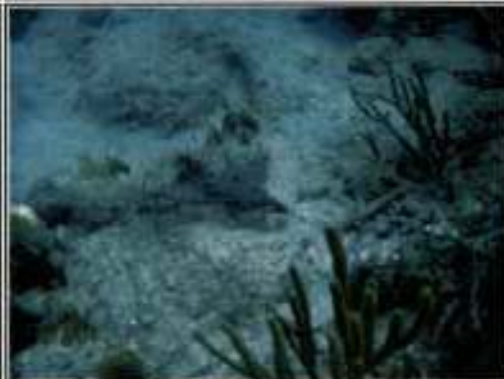
Anchor damage.



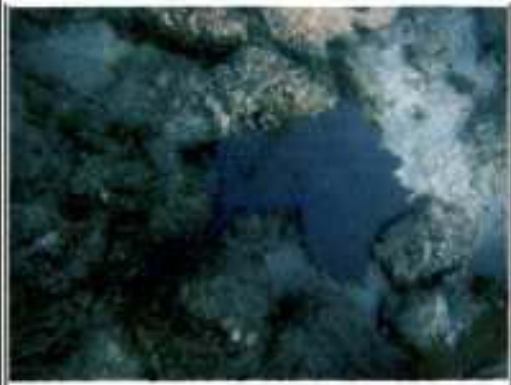
More anchor damage.



Soft corals scraped by anchor chain.



Hard and soft corals flattened by anchor chain.



Large purple sea fan flattened by anchor chain.