

Response to Physical Impacts on Coral Reefs in Puerto Rico and the USVI

2021 Report

Prepared by:
Sean Griffin and Michael Nemeth
NOAA Restoration Center

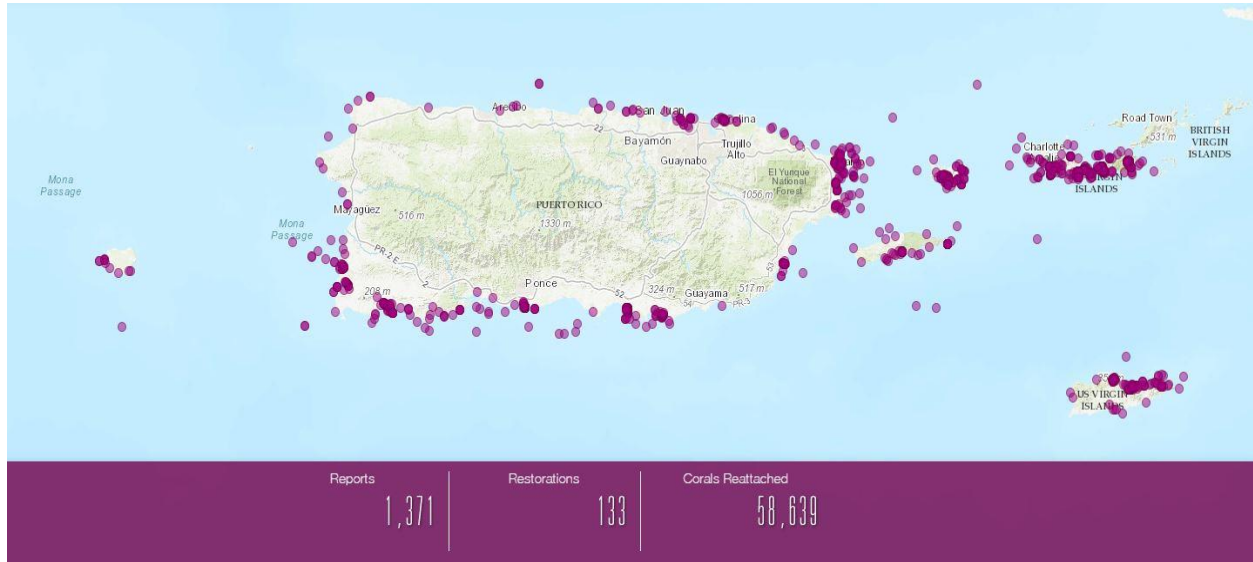


Figure 1: Map of Vessel Grounding Reports in Puerto Rico and the US Virgin Islands Between 2006 and February 2021. Source: [PR DNER's website](#)

Since 2006, NOAA's Restoration Center (RC) performed restoration at 142 sites in PR and the USVI and reattached over 60,000 corals (Table 1). In 2021, the RC received reports of 28 groundings in PR and the USVI. Emergency restoration conducted at three sites in 2021 saved approximately 2,360 corals. Damage at these sites were the result of a hurricane, derelict fishing gear and a derelict buoy.

Response to physical impacts is a Jurisdictional Priority in both PR/USVI, an identified capacity gap in both jurisdictions, and a priority element of the draft Acropora recovery plan. Puerto Rico and the USVI have acknowledged that because of internal limitations and the need for quick and flexible response that more robust action on the part of NOAA was necessary to help stem the unchecked and unnecessary coral losses that were occurring after physical impacts.

In 2009, an emergency response support contract with a local firm was set up. This in combination with the RC's on-the-ground presence in the region has enabled NOAA to address the numerous impacts that were occurring annually. The support contract provides NOAA, PR DNER, and USVI DPNR support to have a functional emergency restoration. A notification network along with a form to report grounding incidents has been set up with the US Coast Guard, salvors, and the local communities so that we are notified immediately of impacts. This notification system has allowed us to often get personnel onsite

while the vessel is still aground on the reef. In many of these cases, our team has been able to provide feedback to the salvors to minimize further impacts during vessel extractions, saving countless corals. On multiple occasions we have found that the salvors preferred extraction path would have resulted in significant additional damage and on more than one occasion prevented entire thickets of *Acropora spp.* from being destroyed.

Funding for this work provided by NOAA’s Restoration Center, the Coral Reef Conservation Program, Protected Resources Division, Assessment and Restoration Division and the South East Regional Office. In addition to physical impact response, the support contract that has been set up has also served as a vehicle for funding additional restoration, research and monitoring activities in the region. Funds have been further leveraged by getting private parties and insurance companies to directly cover the cost of emergency restoration at multiple sites. This was only possible because we had the capability to do immediate post-grounding site assessment and an approved/permitted contractor. With all of the restoration work that has been done, there still is not enough funding to address all of the reported impacts.

Table 1: Summary of NOAA RC grounding response activities since 2009. * In 2014, an additional 8 Caribbean coral species were included as Threatened on the ESA list.

Year	Total # of Incidents Reported	On-Site Confirmation	Restoration Implemented	# Corals Reattached	% of Restored Sites with Acropora/ ESA Impacts *
2006	1		1	10,500	
2008	1		1	850	
2009	51	25%	7	9,074	43%
2010	32	47%	3	1,045	33%
2011	55	75%	7	915	57%
2012	36	50%	4	2,835	50%
2013	32	31%	3	214	100%
2014	42	48%	12	2,132	67%
2015	51	33%	3	1,919	100%
2016	57	46%	5	8,122	80%
2017	1,080	98%	44	10,552	100%
2018	35	37%	36	9,753	100%
2019	56	27%	2	140	100%
2020	23	13%	1	1,336	100%
2021	28	39%	3	2,360	100%
Total or Average Percent	1,580	44%	142	62,335	78%