

Rose Atoll National Wildlife Refuge / Marine National Monument

November 30 – December 6, 2016 Trip Report, USFWS

http://www.fws.gov/refuge/Rose_Atoll/

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Six participants travelled aboard the 39 ft chartered vessel Double Barrel and visited Rose Atoll from November 30 to December 6, 2016 under permit # 12514-2016-001: T. Todd Jones (NOAA Fisheries Science Center), Shawn Murakawa (NOAA Fisheries Science Center), Ricky Misa'alefua (NPS), Mua Utuga (NPS), Stephen Barclay (USFWS), and Brian Peck (USFWS). We camped on the south shore of Rose Island in an area of few nesting birds and recent turtle activity.



The focus of this trip was to attach satellite tags to nesting green sea turtles. Other objectives included seabird monitoring, marine debris removal, qualitative coral bleaching survey, beach profiles, and coconut control.

Green sea turtles: This is the sixth consecutive year that this work has been conducted in collaboration with the NOAA Science Center Marine Turtle Biology & Assessment Program, USFWS, NPS, and DMWR. A total of 36 individual turtles were encountered over six nights, and 17 of these were tagged with flipper and PIT tags. Eight satellite tags were attached to nesting turtles. Eggs were counted for 13 nests with 1,268 total eggs laid (average = 98 eggs). We deployed temperature loggers around the midpoint (at egg count 50) in 10 nests. These loggers will be retrieved during the March trip. Detailed information will be provided by NOAA in a future report.

A boat based survey was conducted for turtle presence within the lagoon. Several individuals were encountered, including a mating pair and one hawksbill.

Approximately six hatchlings were encountered trying to access the lagoon at various locations around Rose Island over the six nights. Crabs were eating three individuals, the rest made it to the water.

The following table shows the number of turtle tracks observed daily (from the previous night) at Rose and Sand Islands for each visit between October 2015 and December 2016.

Date	Rose Island # fresh tracks	Sand Island # fresh tracks
10/3/15	2 (Raked 8 clean)	0 (Raked 8 clean)
12/2/15	0 (Raked 19 clean)	Didn't check
12/3/15	1	0 (Raked 7 clean)
12/4/15	1	0
12/5/15	2	0
12/6/15	5	0
12/7/15	2	1
12/8/15	4	1
1/26/16	0 (Raked 18 clean)	0
1/27/16	2	0
1/28/16	2	0
3/21/16	0 (Raked 2 clean)	0
3/22/16	0	Didn't check
3/23/16	0	Didn't check
4/1/16	0	Didn't check
4/2/16	0	Didn't check
4/3/16	0	0
8/30/16	1 (Raked 5 clean)	Didn't check
9/1/16	1	Didn't check
9/2/16	1	Didn't check
11/30/16	3	0
12/1/16	6	1
12/2/16	6	7
12/3/16	6	1
12/4/16	9	1
12/5/16	23	1

Cyclone Victor Recovery Assessment: Tropical Cyclone Victor passed within about 125 statute miles to the east of Rose Atoll on January 16 and 17, 2016 with winds at that time estimated to be 75 knots (Howard Diamond, World Data Center for Meteorology at NOAA, pers. comm. 2/8/16). The modeled storm waves were estimated at 30 ft.

Most of the damaged *Tournefortia* shrubs along the south facing beachfront continued to have new growth sprouting from broken limbs or trunks. There were also new starts less than a foot tall growing in the coral rubble beach front.

We conducted one beach profile to quantitatively measure the changes in the beach at the BLAST survey marker along the south shore of Rose Island. Comparison profiles will be presented in future reports.

Pre and Post Cyclone Victor Photos:



Note initial beach erosion with newly exposed lithified coral ledge and uprooted and damaged *Tournefortia* (1/16). New coral rubble deposition up to 2 feet (4/16), eroded again (9/16 and 12/16).



Beach on southeast corner of Rose Island continuing to rebuild with new coral rubble berm about 4 feet high.



Beach and Tournefortia erosion with subsequent minor deposition and erosion.
Note angled large coral block on right/lower right side.

Seabird Surveys: We conducted a seabird survey (modified Minimum Incubation Count) on all transects on December 2 and 4. General observations included: numerous fully and partially fledged Sooty Terns, moderate White Terns on eggs or with chicks, few Black Noddy, Brown Noddy, Red Footed Booby, Masked Booby, Frigatebirds, and Red Tailed Tropicbirds on nests or with chicks. Data will be downloaded from the Trimble unit and analyzed.



In addition, the following shorebirds and other birds were observed: reef heron (including two young on nests), wandering tattler, pacific golden plover, ruddy turnstone, Grey Backed Terns (on Sand Island), and one long billed cuckoo.



Coral Bleaching: We conducted several snorkel surveys of the shallow reef to the south of Rose Island throughout the trip. Scattered and minimal bleaching was present, appearing to be in the very early stages. Several of the corals in this area were partially dead and algae covered, mainly on their tops, most likely caused by last year's minor bleaching event.

Pisonia Restoration Project: We investigated the scale infestations on some of the remaining Pisonia trees on island. The lower leaves and branches were moderately infested; however the middle to upper leaves had few to no scales present. We discovered a new Pisonia tree growing approximately 30 ft to the north of the southernmost tree. It was growing in the inundation debris line left from Cyclone Victor in January 2016, likely a broken limb starting to regrow. It was approximately 10 ft tall.



Marine Debris: Typical quantities (5 bags) and types of marine debris were collected along the shoreline at Rose and Sand Islands. We recorded the types of debris using the DMWR data collection sheet. The following table shows the number by type of debris collected.

Type	Rose	Sand	Total for this Trip	Cumulative Total (9/16 – 12/16; 2 trips)
Plastic bottles	21	35	56	90
Plastic food containers	0	0	0	2
Plastic pieces	15	27	42	66
Cigarette lighter	1	0	1	3
Foam pieces	3	3	6	12
Glass bottles	8	1	9	13
Metal cans	1	0	1	1
Metal debris	0	1	1	1
Fishing buoys	4	3	7	8
Fishing line	0	0	0	0
Fishing net	2	0	2	2
Fishing rope	0	0	0	3
Fishing lures & hooks	0	2	2	2
Flip flops	7	6	13	20
Toothbrush	0	1	1	1
Fluorescent light bulb	1	1	2	3
Hard hat	1	0	1	1
Total	64	80	144	228



Trespass and Game Camera: I downloaded the game camera that is set up on the west shore of Rose Island. On September 22 at 1:37 pm, one woman and one man were photographed walking the beach, going south. They did not notice the camera, stopped to take off shoes, and walked past. No vessel was photographed.

I downloaded the game camera that was set up on a juvenile tropicbird in September. Photographs show the juvenile on the nest from 9/2 through 9/12, when it departs and does not return. There were no photographs of adults feeding the juvenile. There were numerous photos of other species (reef heron, brown noddy, black noddy, and ruddy turnstone) walking past the nest and/or interacting with the tropicbird. I relocated this camera to the southwest corner of Rose Island to try and capture the suspected mooring location of yachts that are trespassing. It was extremely hot with internal camera temperatures reading 101 F, and the camera was intermittently working.

Coconut Control: On December 4 and 5 we used machetes to control 719 small, 4 medium, and 2 large coconut palms. I applied Roundup to the cut marks in the two large coconut palms. We left several patches around nesting tropicbirds. The one large coconut palm that had been treated with Roundup in September was dead and all fronds had fallen off, only the trunk remains standing.



The following table shows the number of coconut trees controlled at Rose Island for each visit between October 2015 and December 2016. Small < 10 ft, Medium 10- 25 ft, Large > 25 ft

Month	Year	# of small coconut trees controlled	# of medium coconut trees controlled	# of large coconut trees controlled
October	2015	~500	0	0
December	2015	712	7	0
January	2016	0	0	0
March	2016	0	0	0
April	2016	366	0	0
September	2016	52	0	1
December	2016	719	4	2
Total		2,349	11	3

Miscellaneous:

- 1) We inspected the Jin Shiang Fa shipwreck site by snorkel survey. There were three main scars that each had iron debris in the bottom. The reef in these scars appeared freshly scraped clean, with little new coral or crustose coralline algae growth. Patchy cyanobacteria was present but not dense throughout this area.
- 2) On December 10, back in Pago Pago, I coordinated and T. Todd Jones presented preliminary results of turtle tracking to date to approximately 20 people.
- 3) T. Todd Jones will be adding me to his turtle permits in order to allow me to conduct tagging on my future trips. He left a kit of tagging supplies. If trip logistics allow, I will be flipper and PIT tagging turtles, counting eggs, retrieving temperature loggers, and taking carapace measurements.

Trip report by Brian Peck, USFWS Rose Atoll NWR & MNM Manager 1-17-17. Photos by Brian Peck, USFWS.

