

Rose Atoll National Wildlife Refuge / Marine National Monument

March 21-23, 2016 & April 1-3, 2016 Trip Report, USFWS

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

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March 21-23, 2016

Brian Peck (USFWS-Pago Pago) joined scientists aboard the NOAA vessel Oscar Elton Sette for a life history assessment of deepwater bottomfish throughout various locations in American Samoa, including Rose Atoll. We arrived and remained offshore of Rose Atoll on the morning of March 21. I slept aboard the Sette and was dropped off by small boat at Rose Island on March 21 and 23 to conduct surveys.

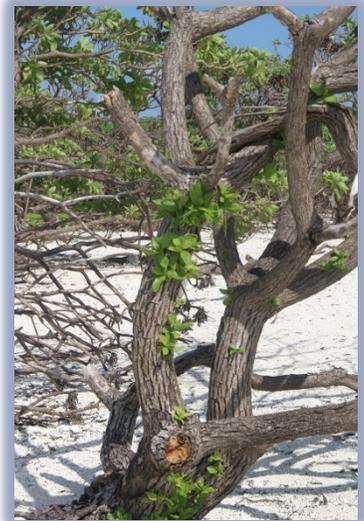


Cyclone Victor Recovery Assessment: Tropical Cyclone Victor passed within about 125 statute miles to the east of Rose Atoll on January 16 and 17 with winds at that time estimated to be 75 knots (Howard Diamond, World Data Center for Meteorology at NOAA, pers. comm. 2/8/16). The modeled storm waves were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

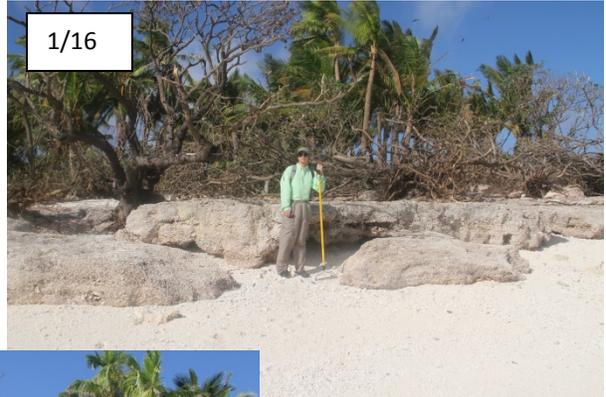
Most of the damaged *Tournefortia* shrubs along the south facing beachfront had new growth sprouting from broken limbs or trunks.



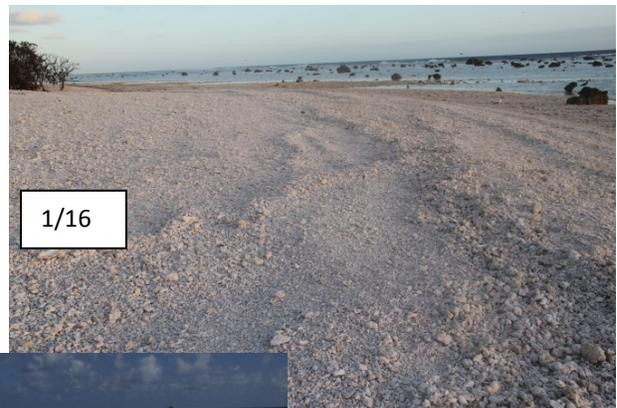
The beach along the south and southeast side are rebuilding with new coral rubble berms approximately 4 ft high located along the high tide mark.



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 of about 1-2 feet (4/16).



Beach continuing to rebuild with new coral rubble berm about 4 feet high.



Beach and Tournefortia erosion. Note angled large coral block on right/lower right side.

Green Sea Turtles: There were 2 fresh turtle tracks on Rose Island when I first arrived on March 21. I raked these clean. There were no new tracks on March 23.

There were no turtle tracks on Sand Island when I first arrived on March 21. I did not check Sand Island again for tracks.

Seabirds: I observed nesting brown boobies and tropicbirds upon first landing at the southwest corner of Rose Island on March 21. They were on eggs at the vegetation edge on the lithified coral ledge.

There were 100's, possibly 1,000's of sooty terns and dozens of brown noddies on eggs under the Tournefortia shrubs on the north end of Rose Island.

I did not conduct seabird transect counts as I was alone and would be returning in less than two weeks.



Marine Debris and Trespass: Typical quantities and types of marine debris were observed along the shoreline at Rose and Sand Island. This debris will be collected during the April visit.

A FAD related fishing net was observed in the area, along the south side. This was not collected and will require additional resources and calm conditions in order to remove safely.

Ten bullet casings were found at the same location as the previous casing on the south shore of Sand Island. A 2.5 x 2.5 inch triangular piece of what appears to be a china plate was found on the southeast corner of Rose Island, in an area that had been severely eroded during Cyclone Victor. The age and origination of this piece is unknown at this time.

A World War II era bomb was located during a spearfishing survey on the forereef near the southeast corner of Rose Atoll. It is approximately 4 ft long and is in 25 ft of water. LT Eric Bokhoven, US Navy, states in an email dated April 14, 2016 “After doing research, we believe the ordnance is an anti-submarine hedgehog weapon. If it is a hedgehog anti-submarine weapon, the worst case is there is a contact fuze in the front which means if it were to be sufficiently moved or disturbed, it could still function detonating 30-35 lbs of explosives. In the highly unlikely chance that it detonated by itself, a swimmer would need to be approximately 220 yds away if swimming on the surface and 1,000 yds away if at 25' to avoid any injury.”



No sign of recent trespass was detected.

Jin Shiang Fa Shipwreck: The shipwreck site was observed during a snorkel survey on March 23. 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.

Game Camera: I checked the game camera that had been installed in January and downloaded the SD card. There were no photos and it appeared that the unit wasn't working properly. I will bring a replacement unit when I return in April.

NOAA Surveys: NOAA life history program deployed two small boats each day and conducted bottomfish fishing surveys around Rose Atoll. NOAA will provide detailed reports. General observations were that the ridges extending off each corner of the atoll dropped off quickly, limiting the available fishing area in the target depth range of 800-1,200 ft. Also, there were numerous shark encounters approaching the reef edge.

A spearfish crew also obtained fish samples along the outer reef edge.

Miscellaneous Observations:

- 1) Two turtles, most likely green, were observed during a snorkel survey along the south west outer reef edge.

April 1-3, 2016

Three participants travelled aboard the 39 ft chartered vessel Double Barrel and visited Rose Atoll from April 1-3, 2016: Kevin Foerster (USFWS-Portland), Matt Brown (USFWS-Honolulu), and Brian Peck (USFWS-Pago Pago). The purpose of this trip was to conduct baseline monitoring, control coconuts, and remove marine debris. We slept on Rose Island, along the vegetation edge on the south shore. This campsite is approximately 500' east of the previous campsite that was eroded away by Cyclone Victor.



Seabird Transects: We conducted a seabird survey (Minimum Incubation Count) on three transects (4, 7, 10) across the north, middle, and south portions of Rose Island on April 2. There were numerous Red Footed Boobies, Sooty Terns, and several Brown Boobies, Masked Boobies, Brown Noddies, and Red-tailed Tropicbirds on nests. Most nesting birds appeared to be on eggs.



We observed several patches of a low growing forb that were picked clean, most likely by birds as nest building material.

Marine Debris and Trespass: Four garbage bags of trash and four fishing floats were collected over the course of the trip. A piece of fishing net 30 ft by 5 ft (FAD purse seine type) and associated debris (metal, PVC pipe, rubber stripping) was removed from the area north of Sand Island.

We found one bullet casing in the same location on the south end of Sand Island.

No sign of recent trespass was detected.



Coconut Control: On April 2 we used machetes to control 366 small coconut trees. We left several patches around nesting tropicbirds.

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

Date	# 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
Total	1,578	7	0

Green Sea Turtles: There were no fresh turtle tracks on Rose Island when we first arrived on April 1. There were no new tracks on April 2 or 3. There were no turtle tracks on Sand Island when checked on April 3.

We surveyed the inside of the lagoon for turtles on April 3. We observed one small turtle, most likely a hawksbill at a pinnacle in the southern portion of the lagoon.

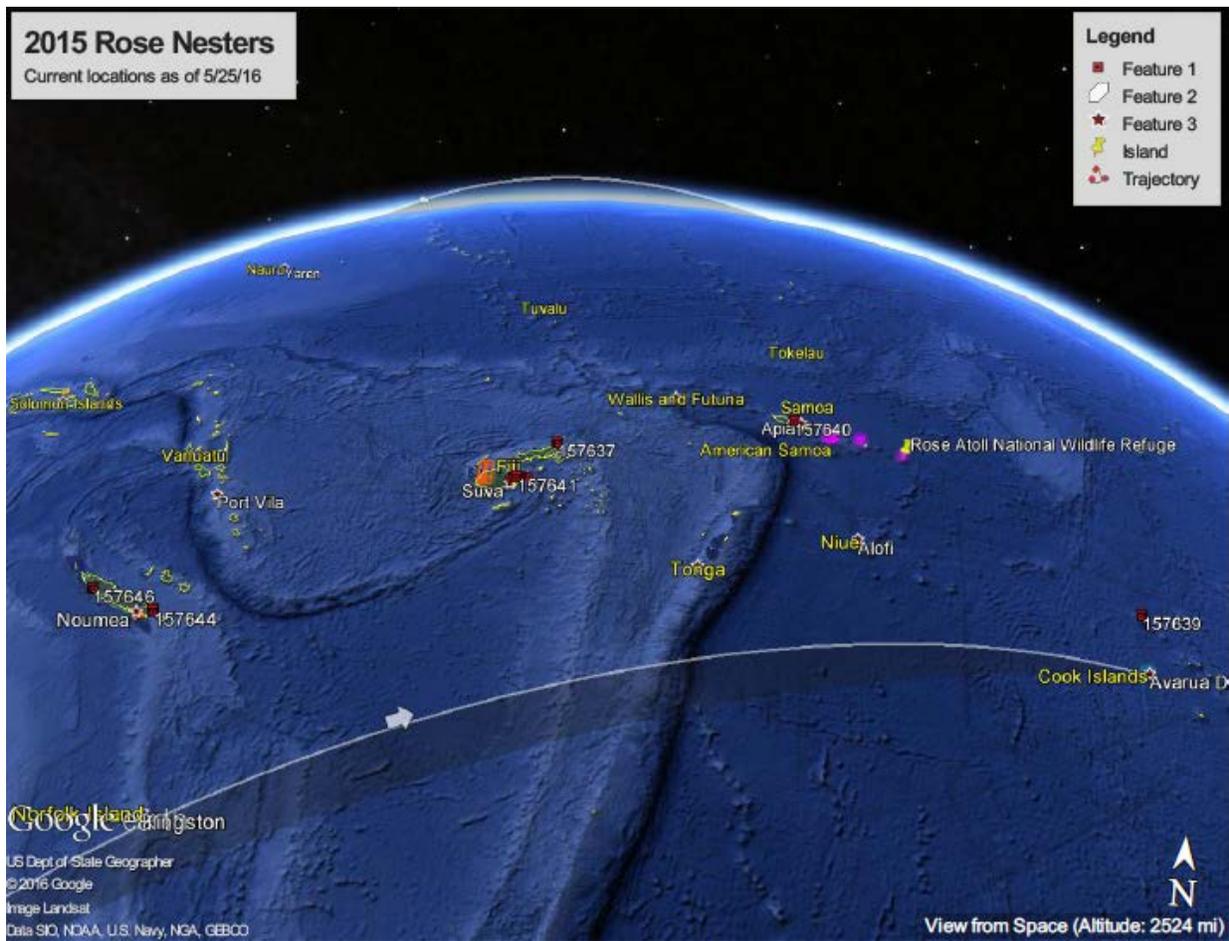
The following table shows the number of turtle tracks observed daily (from the previous night) at Rose and Sand Islands for each visit between October 2015 and April 2016.

Date	Rose Island # fresh tracks	Sand Island # fresh tracks
10/3/15	2 (Raked 8 clean)	Raked 8 clean
12/2/15	Raked 19 clean	Didn't check
12/3/15	1	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	Raked 18 clean	0
1/27/16	2	0
1/28/16	2	0
3/21/16	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

Shawn Murakawa, NOAA Science Center Marine Turtle Biology & Assessment Program, provided the following update on 5/25/16 regarding the turtles that were tagged during the December 2015 trip.

Everyone is happily residing at foraging grounds. Two transmitters 157638 and 157645 have stopped transmitting, but here are the specifics on the ones that are still transmitting:

- 157637 (B1) - last transmission is today and she is near Matuku, Fiji (she was near Nukusa, Fiji on 2/12/16)
- 157639 (F1) - last transmission is today and she is near Arutanga, French Polynesia (she was still near Rose on 2/12/16)
- 157640 (A2) - last transmission is 5/7/16 and she remained at Upolu, Samoa (since 2/12/16)
- 157641 (D1) - last transmission is today and she remained near Korovou, Fiji (since 2/12/16)
- 157644 (C1) - last transmission is today and she is near the southern tip of New Caledonia (she was near Kandavu, Fiji on 2/12/16)
- 157646 (D2) - last transmission was 5/18/16 and she is between Voh and Oundjo, New Caledonia (she was between northern and western divisions, Fiji on 2/12/16)



Coral Bleaching: We conducted a snorkel survey of the shallow reef to the south of Rose Island on April 2. Widespread but minimal bleaching was present, appearing to be in the late or recovery stages. Almost all of the coral heads in this area had corals that were partially bleached, but recovering; a decrease in overall bleaching from the last qualitative survey in January 2016.

Game Camera: I replaced the game camera and tested to make sure it was operating correctly. It is set to take three photos of the lagoon throughout the day and also to take motion triggered pictures.

Miscellaneous Observations:

- 1) Moderate rainfall on the night of April 1 until around 10:00 am on the 2nd, with occasional showers the remainder of the trip. We observed that the hermit crabs congregated at the base and on the trunks and limbs of *Tournefortia* shrubs during rainfall events. It may be that they drink freshwater that is collected in the deep grooves of the shrubs.
- 2) We walked out a short distance on the reef flat adjacent to the camp location at night. After turning our flashlights off, we observed bioluminescence that briefly flashed going over a small riffle.
- 3) We observed and filmed a large stingray that was foraging along the beach adjacent to camp. The video is posted at http://www.fws.gov/refuge/Rose_Atoll_Marine_National_Monument/multimedia/media_listing.html?type=videos&item=2147588958

Trip report by Brian Peck, USFWS Rose Atoll NWR & MNM Manager 6-14-16.

Photos by Brian Peck, except bomb by Brett Taylor (NOAA).

