

DRAFT

**Rose Atoll Sea Turtle Observations  
September 4 – 10, 2010**



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## SUMMARY

Overnight monitoring activities including hourly beach walks, flipper tagging, and collection of tissue samples for genetics were conducted to monitor turtle nesting at Rose Island from September 4 – 10, 2010. Genetic samples were taken from a total of five (5) green turtles and were all subsequently flipper tagged. Locations of all fresh and old visible tracks were recorded using a Garmin GPS 60csx. A total of 215 old pits and 97 new pits were recorded on Rose Island and 6 new pits on Sand Island.

## METHODS

**PM Beach Walk Surveys:** conducted by 1-2 individuals walking the beach every hour and a half. Location of the tracks, entry and exit, and the number of pits were recorded using a Garmin GPS 60csx.

**Flipper tagging:** All live, previously untagged turtles will be tagged on both right and left front flippers with self-piercing, self-locking titanium tags (40 x 11 x 10 mm) made by Stockbrands Co., Mt. Hawthorn, Australia and provided to DMWR by the Secretariat of the South Pacific Regional Environment Programme (SPREP). Tags and applicator were disinfected with 70% Isopropyl alcohol swabs prior to tagging. The application site was also disinfected with 70% Isopropyl alcohol prior to tagging. Tags were applied using stainless steel tag applicators (Stockbrands Co., Mt. Hawthorn, Australia). The tag application site was located proximal of and adjacent to the proximal-most large scale on the posterior edge of the front flipper. Tags on recaptured animals will be inspected for any signs of infection or tissue damage that may be alleviated through tag removal/replacement; missing tags will be replaced.

**Tissue Sampling:** Sterile forceps and razor blade were used to cut away an area ca. 3 mm<sup>2</sup> and 1 mm thick from the surface layer of skin proximal to the first large scale on the dorsal side of the front flipper or sample was collected using a sterile razor blade and tweezers to cut away the small piece of tissue (ca. 2 mm<sup>3</sup>) displaced by the flipper tag at the tag's locking site on the ventral surface of one front flipper. Samples were placed in a screw-top vial of saturated sodium chloride solution, sealed with parafilm.

Data collection for all turtles include species, sex (if known), curved carapace length (CCL), curved carapace width (CCW), general condition based on external examination, activity at the time turtle was found.

Nesting Beach Mapping: GIS data for the high tide line and vegetation line were recorded by walking and collecting locations averagedpoints at approximately 20 meter intervals using a Garmin GPS 60csx

## RESULTS

A total of 5 nesting green turtles were recorded during the survey period, all were flipper tagged and tissue samples taken for genetics (see Table 1). All tissue samples have been submitted to Dr. Peter Dutton at the NOAA-NMFS/SWFSC LaJolla Laboratory for analysis.

# DRAFT

**Table 1. Flipper Tagging and Genetic Sampling Data.**

Species Code	Tissue Sample ID	Date	Location	Flipper Tag (R/L)	CCL (cm)	CCW (cm)	Notes
CM	ASG-100	5-Sept 10	Rose Island	R20711/R20708	93.0	80.0	FOUND ON THE BEACH, FLIPPER TAGGED AFTER NESTING
CM	ASG-101	6-Sept 10	Rose Island	R20714/R20715	99.3	86.6	FOUND ON THE BEACH DIGGING A PIT
CM	ASG-102	7-Sept 10	Rose Island	R20718/R20719	107.0	98.0	FOUND UNDER THE VEGETATION DIGGING A PIT
CM	ASG-103	8-Sept 10	Rose Island	R20721/R20725	105.6	96.4	FOUND CRAWLING UNDER THE VEGETATION
CM	ASG-104	9-Sept 10	Rose Island	R20727/R20728	91.0	81.5	FOUND DIGGING IN THE CORAL RUBBLE

**Table 2. GIS Data: Tracks and Pit Locations.**

Waypoint	LAT	LONG	Date/Time	Direction of Crawl	Notes	Notes
R10T001	-14.5486	-168.145	04-SEP-10 8:21:21PM	up		1-3 days old
R10T002	-14.5487	-168.145	04-SEP-10 8:28:52PM	down		1-3 days old, connectd to R10T003
R10T003u	-14.5487	-168.145	04-SEP-10 8:36:38PM	up		1-3 days old
R10T004	-14.5487	-168.145	04-SEP-10 8:42:38PM	down		1 week old
R10T005	-14.5487	-168.145	04-SEP-10 8:46:49PM	up		1-3 days old
R10T006	-14.5487	-168.145	04-SEP-10 8:50:58PM	up		1 week old
R10T007	-14.5484	-168.144	04-SEP-10 9:06:41PM	up		1 week old
R10T008	-14.5481	-168.144	04-SEP-10 9:12:31PM	up	2M to the right, tracks going down	1 week old
R10T009	-14.5478	-168.144	04-SEP-10 9:18:33PM	down	3M to the right going up (R10T010)	1 week old
R10T010	-14.5478	-168.144	04-SEP-10 9:23:19PM	up		1 week old
R10T010-013	-14.5463	-168.144	10-SEP-10 8:19:13PM		egg chamber, did not	

# DRAFT

					lay eggs in this one	
R10T011	-14.5477	-168.144	04-SEP-10 9:27:31PM	down		3 weeks old
R10T012	-14.5477	-168.143	04-SEP-10 9:31:00PM	up		3 weeks old
R10T013	-14.5476	-168.143	04-SEP-10 9:36:01PM	up		> 3 weeks old
R10T014	-14.5471	-168.143	04-SEP-10 9:42:38PM	down		2-3weeks old
R10T015	-14.547	-168.143	04-SEP-10 9:47:46PM	up		2-3weeks old
R10T016	-14.547	-168.143	04-SEP-10 9:52:18PM	up		barely visible, >3 weeks old
R10T017	-14.5469	-168.143	04-SEP-10 9:56:22PM	down	2M to the left, barely visible tracks, can't tell direction of crawl, 3M to the right very old tracks, 6M to the right old tracks	2-3weeks old
R10T018	-14.5456	-168.145	04-SEP-10 10:06:40PM	down		1 week old
R10T019	-14.5455	-168.145	04-SEP-10 10:11:08PM	up	5M to the right, 1-2weeks old going up	1 week old
R10T020	-14.5455	-168.145	04-SEP-10 10:14:51PM		can't tell direction of crawl	2-3weeks old, barely visible
R10T021	-14.5477	-168.146	04-SEP-10 10:26:26PM	up		1-3 days old
R10T022	-14.5478	-168.146	04-SEP-10 10:29:46PM	up	1M to the right, going down	1 week old
R10T023	-14.5456	-168.145	06-SEP-10 4:34:15PM	up		fresh, missed the turtle the night before
R10T024	-14.5456	-168.145	06-SEP-10 4:39:38PM	down		fresh, missed the turtle the night before
R10T025	-14.5458	-168.145	06-SEP-10 4:46:09PM	down		1 week old, missed during the first day
R10T026	-14.5464	-168.145	06-SEP-10 7:59:58PM	up		fresh

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R10T027	-14.5463	-168.145	06-SEP-10 8:06:37PM	down		fresh
R10TR-014	-14.5457	-168.144	10-SEP-10 8:52:03PM	down		fresh, missed the turtle (came up and down right away)
R10TR05-001	-14.5484	-168.144	05-SEP-10 12:28:30AM	up		fresh
R10TR05-002	-14.5484	-168.144	05-SEP-10 1:36:04AM	down		fresh
R10TR06-005	-14.547	-168.143	06-SEP-10 9:28:08PM	up	5M to the left, tracks going down	fresh
R10TR07-007	-14.5486	-168.145	09-SEP-10 6:24:05AM	up		fresh
R10TR07-008	-14.5486	-168.145	09-SEP-10 6:15:47AM	down		fresh
R10TR07-009	-14.5478	-168.144	08-SEP-10 7:51:30PM	up		fresh
R10TR07-010	-14.5473	-168.143	08-SEP-10 9:44:25PM	down		fresh
R10TR09-012	-14.5457	-168.144	11-SEP-10 9:10:46AM	up		fresh
R10TR09-11	-14.546	-168.144	11-SEP-10 9:06:05AM	up		fresh
R10TR10-015	-14.5456	-168.145	11-SEP-10 9:16:39AM	up		fresh
R10TR10-016	-14.5456	-168.145	11-SEP-10 9:20:38AM	down	2M to the left tracks going up	fresh
SA10P001	-14.5365	-168.151	10-SEP-10 3:42:03PM		2 pits 1M apart, pt taken in between of the 2 pits	> 1 week
SA10P002	-14.5364	-168.151	10-SEP-10 3:45:39PM		1 pit	> 1 week
SA10P003	-14.5365	-168.151	10-SEP-10 3:55:48PM		1 pit	> 1 week
SA10P004	-14.5366	-168.151	10-SEP-10 3:59:04PM		1 pit	> 1 week
SA10P005	-14.5366	-168.151	10-SEP-10 4:02:14PM		1 pit	> 1 week
SA10T001	-14.5365	-168.151	10-SEP-10 3:38:43PM	down		barely visible tracks (due to rain and wind) more than a week old, but can still tell direction of crawl
SA10T002	-14.5367	-168.151	10-SEP-10 4:08:13PM	up		barely visible tracks (due to rain and wind) more than a week old, but can still tell direction of crawl

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SA10T003	-14.5367	-168.151	10-SEP-10 4:12:02PM	up		barely visible tracks (due to rain and wind) more than a week old, but can still tell direction of crawl
SA10T004	-14.5372	-168.151	10-SEP-10 4:19:51PM	down		barely visible tracks (due to rain and wind) more than a week old, but can still tell direction of crawl
TURMIG	-14.5463	-168.144	8/31/2010 13:52			
TURTLE BONES	-14.5485	-168.145	09-SEP-10 12:50:50PM			
VL-1	-14.5481	-168.146	10-SEP-10 9:20:38AM		1 old pit	
VL-10	-14.5484	-168.144	10-SEP-10 9:57:07AM		old pits up to approx 40m inland	
VL-11	-14.5483	-168.144	10-SEP-10 10:01:08AM		old pits	
VL-12	-14.5482	-168.144	10-SEP-10 10:04:53AM		old pits	
VL-13	-14.5481	-168.144	10-SEP-10 10:08:18AM		1 new pit	
VL-14	-14.548	-168.144	10-SEP-10 10:12:46AM		old nests up to approx 20m inland	
VL-15	-14.5478	-168.144	10-SEP-10 10:16:58AM		6 old pits	
VL-16	-14.5477	-168.144	10-SEP-10 10:20:12AM		old pits	
VL-17	-14.5476	-168.143	10-SEP-10 10:27:27AM		old pits	
VL-18	-14.5474	-168.143	10-SEP-10 10:31:49AM		old pits	
VL-19	-14.5472	-168.143	10-SEP-10 10:35:55AM		9 new pits	
VL-2	-14.5483	-168.146	10-SEP-10 9:24:28AM		2 old pits	
VL-20	-14.5469	-168.143	10-SEP-10 10:40:15AM		9 new pits, Sooty Tern Area-counted visible pits from veg line	
VL-21	-14.5468	-168.144	10-SEP-10 10:43:39AM		Sooty Tern Area (STA)	

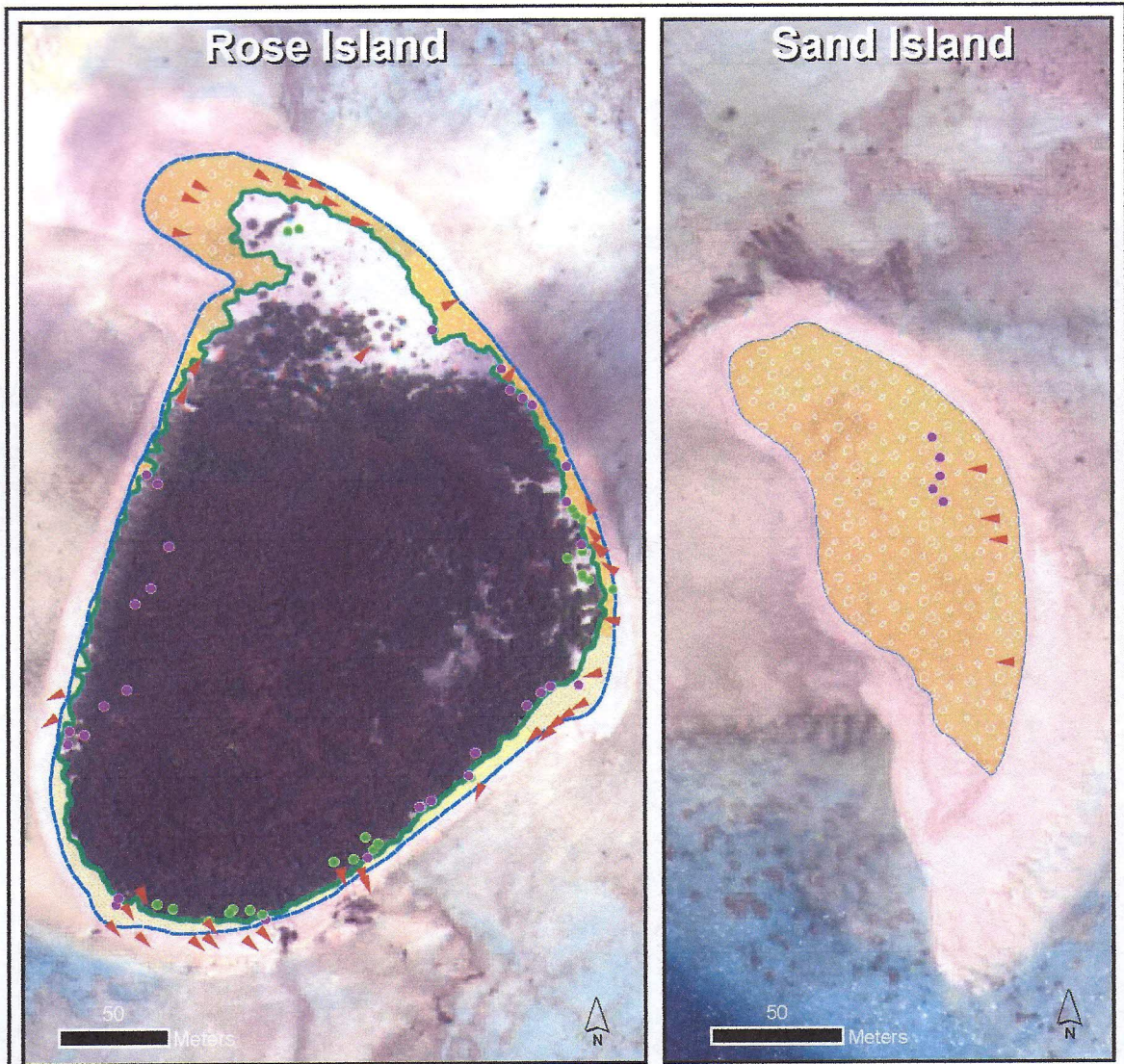
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VL-22	-14.5466	-168.144	10-SEP-10 10:46:59AM		2 old pits	
VL-23	-14.5465	-168.144	10-SEP-10 10:50:43AM		3 new pits	
VL-24	-14.5463	-168.144	10-SEP-10 10:54:56AM		old pits up to approx 30m inland	
VL-25	-14.5462	-168.144	10-SEP-10 10:59:12AM		veg widely spaced, could not count pits STA	
VL-27	-14.5461	-168.144	10-SEP-10 11:02:17AM		veg widely spaced, could not count pits STA	
VL-28	-14.546	-168.144	10-SEP-10 11:05:35AM		veg widely spaced, could not count pits STA, pits up to 70m inland	
VL-29	-14.5458	-168.144	10-SEP-10 11:09:19AM		veg widely spaced, could not count pits STA	
VL-3	-14.5484	-168.145	10-SEP-10 9:28:44AM		3 new pits	
VL-30	-14.5457	-168.145	10-SEP-10 11:15:44AM		6 new pits, veg widely spaced, could not count pits (inland) STA	
VL-31	-14.5456	-168.145	10-SEP-10 11:20:52AM		6 new pits, veg widely spaced, could not count pits (up to 80m inland) STA	
VL-32	-14.5458	-168.145	10-SEP-10 11:24:09AM		noddy area	
VL-33	-14.5462	-168.145	10-SEP-10 11:28:07AM		STA	
VL-34	-14.5464	-168.145	10-SEP-10 11:31:41AM		STA neara GIS marker	

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VL-35	-14.5465	-168.145	10-SEP-10 11:34:46AM		3 new pits, 2 old pits	
VL-36	-14.5467	-168.145	10-SEP-10 11:38:13AM		4 old pits, 15m inland STA	
VL-37	-14.5469	-168.145	10-SEP-10 11:42:27AM		14 old pits, 1 new pit	
VL-38	-14.547	-168.145	10-SEP-10 11:46:45AM		18 old pits	
VL-39	-14.5473	-168.146	10-SEP-10 11:50:40AM		6 old pits	
VL-4	-14.5485	-168.145	10-SEP-10 9:32:38AM		3 new pits	
VL-40	-14.5475	-168.146	10-SEP-10 11:53:28AM		4 old pits	
VL-41	-14.5477	-168.146	10-SEP-10 11:56:38AM		9 old pits	
VL-42	-14.5478	-168.146	10-SEP-10 11:59:34AM		4 new pits	
VL-43	-14.548	-168.146	10-SEP-10 12:02:59PM		5 old pits	
VL-5	-14.5486	-168.145	10-SEP-10 9:38:44AM		old and new pits	
VL-6	-14.5486	-168.145	10-SEP-10 9:42:55AM		old and new pits	
VL-7	-14.5486	-168.145	10-SEP-10 9:45:47AM		old and new pits up to 30m inland	
VL-8	-14.5486	-168.145	10-SEP-10 9:50:33AM		old pits near Pisonia	
VL-9	-14.5485	-168.145	10-SEP-10 9:53:25AM		old pits	





### Rose Atoll Turtle Data 2010

#### Map Legend

- |                   |                           |
|-------------------|---------------------------|
| ▲ Turtle tracks   | <b>Beach composition</b>  |
| ● New turtle pit  | 60% coral rubble 40% sand |
| ● Old turtle pit  | 70% coral rubble 30% sand |
| — High tide line  | 90% coral rubble 10% sand |
| — Vegetation line | 95% coral rubble 5% sand  |

#### Rose Atoll

