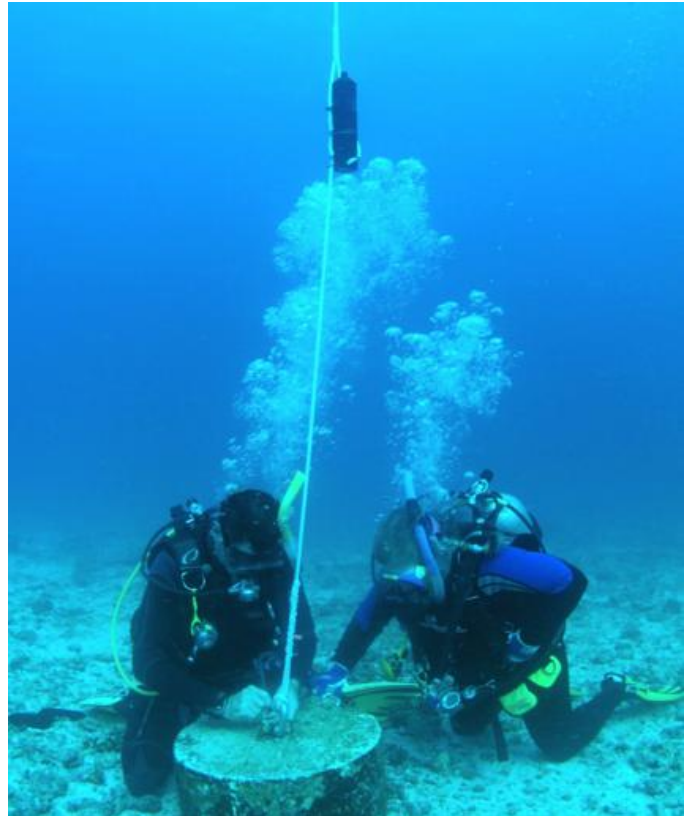


AATAMS Report for Project Manta

Project objectives: To determine large and small-scale habitat usage of the manta ray *Manta alfredi* on the east coast of Australia.

Hypothesis: A) On a small scale, *Manta alfredi* is preferentially utilizing identified bommies for either feeding or cleaning behaviours. B) On a large scale, *Manta alfredi* is undergoing a seasonal migration which takes the animals from Lady Elliot Island to North Stradbroke Island and back.

Report: Five acoustic receivers (Model: Vemco VR2W) have been deployed at Lady Elliot Island in accordance with the conditions contained within Marine Parks Permit G09/29853.1 during the week of March 29 to April 5. Prior to deployment the receivers were coated with a red antifouling paint.



These receivers are located at the following positions and are temporarily secured to the seabed, away from any coral structures, using an anchored float design as recommended by the VEMCO manual.

Lighthouse Bommie (west): 24 06.839 S; 152 42.509 E, depth 15m, sandy bottom

Severance (west of the island): 24 06.621 S; 152 42.588 E, depth 21m, sandy bottom

Spider ledge (north): 24 06.301 S; 152 42.903 E, depth 17m, sandy bottom

Tubes (east): 24 07.056 S; 152 43.332 E, depth 26m, sandy bottom

Sunset drift (south west): 24 06.948 S; 152 42.527 E, depth 15m, sandy bottom

In addition to the placement of receivers twelve manta rays were tagged (9/06/09 to 17/06/09) underwater at Lady Elliot Reef, without restraint – using a hand spear on snorkel. Each manta ray received a single acoustic tag, either a Vemco V16P-6H (pressure tag, six animals), or a V16-6H tag that was attached to the dorsal side of the animal in a posterior-lateral position. All tags were painted in red antifoul paint and were R64K-coded tags that emit a pulse-train to uniquely identify the tag at a frequency 69 kHz. All tags were deployed successfully. Two of the tagged manta rays were sighted in the vicinity of the tagging event

on subsequent days. All tagged animals were subsequently detected with the deployed VR2W's at Lady Elliot Island.

The acoustic receivers are to be checked on a routine basis by dive staff at Lady Elliot Resort, with data down-load occurring on the week of Nov 6 to Nov 14. Download data is attached to this report. During that download – several tag numbers that were not associated from our project were identified. These numbers were forwarded onto Andrew Boomer for notification.

A further five receivers (1 x AATAMS; 4 x UQ Project Manta) have been deployed in the vicinity of Point Lookout (North Stradbroke Island) during the months of Nov to Jan. Weather conditions, strong currents, permits and heavy boating traffic created difficulties in deploying these particular stations. To date they have not yet been down loaded.



Kathy Townsend represented Project Manta at the November 2009 AATAMS workshop. The knowledge gained from this was put into practice at the first downloading session at Lady Elliot Island later that month. Many inconsistencies were detected in the data, including a diurnal pattern that may be more associated with ambient noise within the reef environment, than it is associated with the behaviour of the manta rays. A constant pinger tag has now been ordered from VEMCO to test the VR2W's receiving capabilities in a noisy coral reef environment. Without these verification tests, the data that has been collected to date from the VR2W's is not scientifically sound.

The tagging details are provided below along with an image of one of the tagged rays above.

| Tag | # | ID code | Sex [Name] | Tagging site | Resighted |
|---------|---------|---------|-------------------|---------------------------------|-----------|
| V16P-6H | 1064943 | 14676 | Female [Ellana] | 09/06/09 LEI; Sunset Drift | Yes |
| V16P-6H | 1064946 | 14679 | Female [Pokey] | 09/06/09 LEI; Sunset Drift | No |
| V16-6H | 1064940 | 54724 | Male [Nalcon] | 10/06/09 LEI; Lighthouse Bommie | No |
| V16-6H | 1064936 | 54720 | Female [Gisela]* | 10/06/09 LEI; Lighthouse Bommie | No |
| V16-6H | 1064937 | 54721 | Female [Turtle] | 12/06/09 LEI; Lighthouse Bommie | No |
| V16P-6H | 1064942 | 14675 | Male [Evadne] | 12/06/09 LEI; Lighthouse Bommie | No |
| V16-6H | 1064938 | 54722 | Female [Lily] | 12/06/09 LEI; Lighthouse Bommie | No |
| V16P-6H | 1064944 | 14677 | Female [Rusty] | 13/06/09 LEI; Lighthouse Bommie | No |
| V16P-6H | 1064947 | 14680 | Female [Naia]* | 13/06/09 LEI; Lighthouse Bommie | No |
| V16P-6H | 1064945 | 14678 | Male [Nalago] | 13/06/09 LEI; Lighthouse Bommie | No |
| V16-6H | 1064939 | 54723 | Female [Vesta] | 17/06/09 LEI; Lighthouse Bommie | Yes |
| V16-6H | 1064941 | 54725 | Male [Chad V III] | 17/06/09 LEI; Lighthouse Bommie | No |

*= pregnant when tagged

The equipment borrowed from the AATAMS pool is vitally important for the successful completion of two PhD projects based upon the biology and movements of manta rays along the east coast of Australia. Many unforeseen delays have occurred during this project, including delays in obtaining GBRMPA permits and ethics approval. Additionally, bad weather and funding complications has caused unforeseen delays to both deployment and retrieval of listening stations. Currently, Project Manta is one of the few projects within the AATAMS network based in Queensland. The receivers based at Lady Elliot Island have picked up animals from projects based from southern Australia. As one of the few listening arrays based around the southern end of the Great Barrier Reef, it is perfectly located to pick up those species that move between temperate and tropical waters. It is for these reasons that we request an extension until the end of 2010.

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