

## MOORING BUOYS PROJECT SUMMARY

### Summary

Over the last 4 years the number of large boat dive operators in Komodo has increased from 5 to up to 20 boats. The number of existing large boat moorings and small boat moorings is insufficient for the current and anticipated demand. The objective of this proposal is to identify up to 20 additional sites for large boat moorings ( up to 300GT or 40m) and 10 sites for small boat moorings ( 5 GT or 10m). This will reduce damage by anchors and chains to the reefs and improve boat and diving safety.

The estimated cost for the project is US\$64,000 using an environmentally friendly manta anchor system which has been effectively used in many marine parks world wide.

Fund raising, equipment purchase and installation is expected to be completed in 5 months, i.e. by August 2006.

### Project Description

Boat and dive operators in the Komodo National Park will be asked to identify 20 suitable sites to a maximum depth of 40m for big boat moorings and 10 shallow sites suitable for small boat moorings. Suitable sites will be either sandy or rubble areas. The list of selected sites will then be submitted to PT Putri Naga Komodo and the Head of the Komodo National Park for approval.

### Design and Deployment of Moorings

The project will utilize an embedded type anchor system known as the manta ray system. (These anchors are designed to be driven into the ground by a hydraulic jack hammer. The anchors are driven down to between 3-4 m depth and then are set in place using a load locker. This allows the mooring to be proof tested for a desired holding capacity. This will be a minimum of 5000kg given the anticipated ground conditions. Up to 3 anchors will be used to secure each large boat mooring. There are a number of advantages of using the manta anchor system. The high holding capacity of this anchor system allows for shorter moorings as the holding capacity is not a function of scope. Sufficient scope is only required to allow for storm surges and to keep the loads on deck hardware and ropes at a reasonable level. The shorter scope will increase the number of potentially suitable sites as less swing room is required. An intermediate buoy or use of a buoyant rope keeps the tackle off the bottom further limiting damage to seabed organisms and reducing abrasion of the tackle.

Prior to the installation, each proposed site will be inspected and probed and marked to ensure that the manta anchor can be drilled to sufficient depth. The manta anchors will have a fixed length of chain attached to them that is buried into the ground with the anchor. This will allow for easy inspection of the moorings subsequently to determine their condition.

The chains will be shackled to polypropylene rope and then to a large plastic float similar to the ones that have been successfully used to date.

## Project Costs

Project Budget - in U.S. Dollars	
1) 30 pcs buoy, ropes, chain, shackles, hose, manta anchors	\$18,000
2) Ship charter (cost price) 26 days @ \$1000/day	\$26,000
3) Installation equipment/installation/transportation	\$18,000
4) Source and purchase materials (travel and admin)	\$ 2,000
<b>Total</b>	<b>\$64,000</b>

## Benefits to Donors

The mooring buoy project will both help to protect the marine park wildlife and add to the safety of mooring within the park. However, it is anticipated that additional "benefits" will be required to encourage commercial park users to participate in the project and to maximise the long term publicity and awareness for the park generally.

It has been agreed that the project will have a dedicated web page and that this page will be linked to the [www.komodonationalpark.org](http://www.komodonationalpark.org) official web site. All donors of US\$1,000 or more will be named and a link to their web site provided.

It is anticipated that additional publicity in the form of articles in dive magazines and the press, plus documentary TV news footage on the project will further promote the park and commercial park users. The publicity gained from the Bali mooring buoy project clearly demonstrates the opportunity for positive publicity around this kind of project.

## Time Frame

Project Time Frame	
1) Source for funding	April/May/June 2006
2) Coordinate meetings with dive operators/community leaders	May 2006
3) Identification of sites and details	May/June 2006
4) Source materials	June 2006
<b>Commence installation (subject to funding)</b>	<b>July 2006</b>