



PROJECT PROPOSAL

WHALE SHARK WATCH – WESTERN INDIAN OCEAN.

PROJECT TITLE: To assess the abundance and seasonal distribution of Whale Sharks, of coast around Sodwana Bay (Hully Point – Bhangazi North) and the viability of a dedicated Whale Shark diving industry at Sodwana Bay, Northern KwaZulu-Natal.

PROJECT THEME: Conservation, status and management of species for Interactive Marine Experiences (IME's) with *Rhincodon typus* and establishment of the Whale Shark as an icon species in the Sodwana Bay area (incorporating Shark Route S.A).

PROJECT DURATION: 3 year project.

First year: 1 December 2006 – 30 April 2007.

PROJECT SUMMARY:

The many gaps in our knowledge of whale sharks were recently highlighted at the first International Whale Shark Conference held in Perth, May 2005. Whale Sharks were classified as a high conservation priority. This project aims to provide the first consistent data on frequency of occurrence/abundance of whale sharks in the Sodwana Bay region. The project aims to examine the movements and population densities for the duration of "High" season and pre & post "High" season. Scientists recognize that whale sharks are not yet exploited in our region, we have the opportunity to improve our understanding of the numbers and movements of sharks that visit the Sodwana Bay area each year and to conduct identification of individuals. The project has implications for management strategies and address key issues for Interactive Marine Experiences (IME's) and work towards a sustainable modus operandi of data collection. Data will be made available to the Natal Sharks Board, Ezemvelo KZN Wildlife, GSLWP Authority and Marine and Coastal Management.

FULL PROJECT DESCRIPTION:

MOTIVATION:

Diving with Whale Sharks by recreational divers in South Africa takes place most often in Northern KwaZulu-Natal. It has largely taken the form of opportunistic encounters while the dive boat is traveling to or from the dive site. In 2001 the Department of Environmental Affairs and Tourism (DEAT) through Marine and Coastal Management (MCM) supported a study as to the viability of a dedicated Whale Shark diving industry along the KwaZulu-Natal coast. Rob Bester from Whale Shark Watch Sodwana Bay assisted Andrew Aitken and the Natal Sharks Board with the study of the biology and

tourism potential of the Whale Shark (*Rhincodon typus*) in KwaZulu-Natal, South Africa. Due to the extremely low abundance of Whale Sharks over this period, far less fieldwork was carried out on Whale Sharks at Sodwana Bay than was originally intended.

Over the past three years the situation has changed. Sporadic or short-term data collection clearly indicates the increase in occurrence of Whale Sharks in this region thereby providing the opportunity to implement a project of this nature.

Identification of a high season (Jan – March) and the need for management policy of diver interactions, combined with an increase in numbers of Whale Shark clearly indicates further study/investigation would be extremely important. Data collected may be used as a baseline for further studies. At present, no operators in this region market Whale Shark diving as a product and as a result this area is amongst the last Whale Shark destinations with minimal impact from tourism. This provides an opportunity to study Whale Shark in natural environment in contrast with other areas where limited opportunities exist to observe whale shark in natural conditions i.e. not exposed to tourism pressure.

Aerial surveys will be conducted by micro light on a daily basis. Area of survey will cover the inshore coastal area between Hulley Point in the north and Bhangazi North in the south. Data from this survey could feed into a broader based GIS system.

OBJECTIVES OF PROJECT:

1. To provide quantitative data of seasonal occurrences and abundance of Whale Sharks, observing longshore and in/off shore movement patterns of Whale Shark.
2. To determine seasonal variation and distribution.
3. To determine the population structure (length and sex) of the sharks.
4. To identify behaviours that can be utilized as measurement parameters to assess the impact of IME's.
5. To determine viability of eco-tourism and Sodwana Bay as a destination for Whale Shark IME's.
6. Provide data on individuals – standard sighting form and photo I.D. data base.
7. Contribute to international photo-identification database.
8. Promote community awareness.
9. Distribute literature.
10. Contribute towards management plan and a code of conduct for responsible diving with whale sharks.

KEY QUESTIONS:

1. When do Whale Sharks occur here?
2. What is primary activity of Whale Sharks?
3. How long do individual sharks remain in the area?
4. What is the size (length) and sex of each shark?
5. Investigate the association of upwelling events and the occurrence of Whale Sharks.

WORK PLAN AND TIME TABLE:

December 2006 – April 2007; Daily aerial surveys from Hulley Point to Bhangazi North. Data entry and survey updates.

We are currently active in a Ragged Tooth Shark project which involves snorkel surveys being conducted on ¼ Mile Reef habitat at 07h00 daily. Mobilization of vessel for this survey will include stand by of vessel at Quarter Mile for aerial survey report from micro light spotting Whale Sharks. Confirmation of Whale Shark activity and G.P.S co-ordinates relayed by micro light pilot to the vessel which will conduct data collection and photo identification. Whale Sharks generally travel relatively close inshore enabling tracking of individuals spotted by micro light. The vessel is fitted with a high 'viewing chair' for this purpose. Experience from previous exercises affords flexible assessment on the day, should multiple sightings be reported the focus would be on data collection and photo identification of all animals. On completion of data collection an individual shark would be selected for further monitoring of behaviour, feeding and assessment of impact of limited IME's.

30 April 2007 – 30 June 2007; Data analysis and project progress report. All data (GPS) spatially referenced.

EXPECTED OUTPUTS:

1. Development of sightings data base.
2. Development of photo identification database, which will become part of the new ECOCEAN Whale Shark Photo-Identification Library, initiated in Australia.
3. Contribution to protected status of *Rhincodon typus*.
4. Development of a management plan for IME's.
5. Implementation of code of conduct and ethics for IME's.
6. Assessment of viability of dedicated Whale Shark IME's.
7. Policy framework for management of species.
8. Development of an understanding of the natural factors that could influence the occurrence of Whale Sharks in our region.
9. Promote community awareness. Mary Pieters – Senior Community Conservation Officer, EKZNW – will include a presentation on whale sharks in the eco-awareness forums at local schools. A questionnaire on Whale Shark completed by the students will afford the top 10 students the opportunity to experience a boat-based IME with Gypsea Centre.

BUDGET:

EXPENSES	AMOUNT REQUESTED
Aerial surveys: 150 x R600	R 90 000
Boat and Vehicle fuel: 150 x R850	R 127 500
Admin: Telephone and email	6 000
Ad Hoc assistance with field work	10 000
Scientific data analysis	10 000
TOTAL REQUESTED	R243 500

- **1 December – 30 April: 150 days**
- Boat, vehicle, camera and video equipment, staff, computer equipment and office space all free of charge. Equipment open for inspection at Gypsea Centre – Sodwana Bay.

NOTE:

Aerial survey costs @ R600/hr for a duration of 1 hour per day over 150 days. Surveys will be conducted from Hulley Point in the north to Bhangazi North in the south with two passes over this area. Weather will influence flying conditions which will deviate from the budgeted amount. Pilot will be assisted by passenger for spotting of Whale Shark. It is intended that where possible, the passenger seat will be “sold” to supplement extra hours on days when additional survey is required. Whale Shark Watch Sodwana Bay will endeavor to host clientele by invitation to supplement income to sustain aerial and boating activities and costs not included in the budget. A window of 10-12 weeks has been identified as Peak ‘high season’.

Details of current Colleagues and Collaborators:

Name	Company	Email
Mr. G. Cliff	Natal Sharks Board	<u>cliff@shark.co.za</u>
Mr. D. Rowat	Sagren Whale Shark Program	<u>david@mcss.sc</u>
Dr. M. Meekan	Australian Institute of Marine Science	<u>m.meekan@aims.gov.au</u>
EcOcean	International photo data-base	<u>www.whaleshark.org</u>
Mrs. M. Pieters	Senior Community Conservation - EKZNW	<u>pietersm@kznwildlife.com</u>

Our details:

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