

## **Spatial And Temporal Distribution Of Whale Sharks (Rhincodon Typus) In The Bay Of Nosy Be, Northwest Of Madagascar**

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### **Submission:**

#### **Background**

Whale sharks (*Rhincodon typus*) congregate in the coastal waters of Nosy Be Island between September and December, in the northwest of Madagascar. Swimming with these sharks has become a major tourist attraction, but in Madagascar in general and Nosy Be in particular, no official protection is in place to protect this endangered species from local tourism development and other human impacts

#### **Method**

From 2018 to 2019, studies on the presence of whale sharks in Nosy Be were conducted from snorkeling boats from September to December. The correlation on whale shark presence and depth were tested during this study.

#### **Results**

On average,  $4.25 \pm 3.30$  whale sharks per day were observed and identified during this period with a total of 697 whale sharks, ranging from 3.0 to 8.0 m total length (TL). All individuals were immature, and 92% of the sexed sharks (n=573) were males. The presence of whale sharks in the waters of Nosy Be was not related to depth. For most of the observations (98%), whale sharks were seen while searching for baitfish at the surface, in association with mackerel tunas (*Euthynnus affinis*) and seabirds (Sternidae family). The waters of Nosy Be are an important feeding ground for juvenile whale sharks. Observational data show that much of the sharks' preferred habitat is outside of existing protected areas, but in an identified key biodiversity area.

#### **Conclusion**

Species-level protection and enhanced spatial management are recommended to ensure the continued presence of whale sharks in this region.