

## ABSTRACT

### THE SHORT- TERM IMPACT OF CETACEAN WATCHING ON THE BEHAVIOR AND GROUP STRUCTURE OF SPINNER DOLPHINS (*Stenella longirostris*) IN SOUTHERN TAÑON STRAIT

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Cetacean watching has been on-going in a few select sites in the Philippines since 1994, but the potential impact of this activity, often perceived as harmless to wildlife, has not been assessed in the country. This study aimed to determine whether or not cetacean watching has short-term impacts on the behavior of spinner dolphins (*Stenella longirostris*) in southern Tañon Strait. Spinner dolphins are nocturnal species – they are believed to use this area as resting grounds during the day and are thus easily sighted. They are in fact the most observed species during cetacean watching. In the peak season months of April, May, and July 2010, 17 survey days and a total of 100 hours of survey effort were spent at sea, with 41.25 hours spent observing spinner dolphin groups. The observation samples were collected from 0700 to 1600H. In examining behavioral states, a three-minute scan sampling of a focal group's predominant behavioral state was conducted and repeated for at least 3 to at most 10 times to achieve one full sequence. A total of 92 sequences or samples were used in the analyses. The results revealed that cetacean watching (CW) boats have a short-term effect on the behavioral states (i.e., long behaviors of measurable duration), behavioral events (i.e. brief behaviors), and interindividual spacing patterns of spinner dolphins. Overall, a spinner dolphin group's resting state significantly decreased by 41%, while travelling significantly increased by 89% in the presence of CW boats. Grouping the samples by time (0700-0959 H, 1000-1259 H, and 1300-1559 H) revealed that the duration of behavioral states changed significantly only during late morning to early afternoon (Times 2 and 3: 1000-1559H), but not in the earlier morning hours between 0700 to 0959H. The impact varied with boat-related variables (i.e., number, type, and distance of CW boats). In particular, when multiple CW boats rather than one CW boat were present, there were larger changes in the duration of resting and travelling; when one small boat rather than one big boat interacted with a dolphin group, there was a more significant effect on resting and milling; and at a distance of 0-50 m rather than 100-250 m, there were larger changes in the duration of resting and milling. Behavioral events such as lunge (LUN) and porpoising (POR) were more frequently observed in the presence of CW boats. Furthermore, the spacing pattern of individual spinner dolphins was affected; individuals tend to be dispersed in the presence of CW boats. The state of tourism in southern Tañon Strait is at its young stage and now is the proper time to establish regulations and protocols that may help to ensure the sustainability of this ecotourism activity. The results of this study may serve as the initial bases in the formulation of such regulations and protocols. Continuous monitoring of the spinner dolphin population is needed to determine the particular effects of cetacean watching on this species' biology and ecology.