

## Protected Species Monitoring in the Proposed Undersea Warfare Training Range Offshore of Jacksonville, FL

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A multi-institutional marine protected species monitoring program involving aerial, vessel and acoustic surveillance techniques was implemented at the proposed Undersea Warfare Training Range (USWTR) offshore of Jacksonville, Florida in January 2009. Visual surveys, in conjunction with acoustic sampling methods, have been conducted to investigate cetacean and sea turtle occurrence, distribution and abundance. Through December 2012 a total of 722 aerial tracklines (60687 km) were flown, resulting in 641 cetacean sightings, encompassing 8079 individuals. *Tursiops truncatus* and *Stenella frontalis* were the most frequently encountered, followed by *Grampus griseus*, *Globicephala macrorhynchus*, *Balaenoptera acutorostrata*, *Steno bredanensis*, *Eubalaena glacialis*, *Megaptera novaeangliae*, *Physeter macrocephalus*, and *Kogia* spp. Cetaceans were encountered 126 times during the 3403 km of vessel surveys, totaling 950 individuals. Sightings consisted of *S. frontalis*, *T. truncatus*, *G. macrorhynchus*, and *G. griseus*. Across all visual platforms, *T. truncatus* were encountered throughout the range, whereas *S. frontalis*, *S. bredanensis*, and *E. glacialis* were recorded exclusively in shelf waters. All other species were detected only in pelagic waters. The towed passive acoustic array was deployed during 21 vessel surveys, generating 24.2 hours of recordings, detecting all four sighted species. High frequency acoustic recording packages (HARPs) were deployed at two sites in the study area for long-term passive acoustic monitoring. The HARP data have been analyzed for diel, seasonal, and interannual trends in cetacean occurrence. Surveys are scheduled to continue in order to assess long-term habitat usage patterns in the USWTR.

## Quantifying disturbance to dolphin social networks with increasing tour vessel activity in Shark Bay, Western Australia

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For highly social animals such as bottlenose dolphins, survival likely depends on the strength and stability of social bonds. Dolphin-watching tourism has been shown to alter dolphin behavior and ranging in Shark Bay, and social bonds might also be disrupted. Using focal data, we investigated the ego networks of 31 adult female bottlenose dolphins (*Tursiops* sp.) over 4 consecutive time periods (no tour vessels, 1 tour vessel, 2 tour vessels, 1 tour vessel) spanning 23 years. With increasing tour boat activity, the network size tended to decrease (LMM,  $t=-1.784$ ,  $p=0.079$ ), while strength of bonds and network density increased (strength:  $t=2.296$ ,  $p=0.025$ ; density:  $t=2.459$ ,  $p=0.017$ ). Seven of the subjects visit a beach daily to be fed fish by tourists (managed by the Department of Environment and Conservation). These dolphins increased their homophily among other provisioned animals with increasing tourism ( $t=5.481$ ,  $p<0.001$ ), suggesting greater segregation from the remaining population. Since the provisioned dolphins are already a high-risk group with regards to human disturbance, this result is of particular concern. Finally, these patterns persisted despite the recent reduction in tour vessels.

## Behavioral patterns of the common bottlenose dolphin *Tursiops truncatus* around Savannah, Georgia

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Anthropogenic influences, including feeding and interacting with wildlife, have been shown to affect behavior in many terrestrial and marine species. The purpose of this study was to examine how interactions between the common bottlenose dolphin *Tursiops truncatus* and humans have affected behaviors of the bottlenose dolphin around Savannah, Georgia. Point and continuous data sampling were used to collect behavioral data on 17 beggars and 16 non-beggars for 90-min individual focal follows. Bottlenose dolphins were categorized based on whether

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