

Heard But Not Seen: Bryde's And Sei Whale Acoustic Occurrence In Bazaruto Archipelago, Mozambique

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Submission: Background

Seasonal occurrence and distribution of most baleen whales in the southern African region are based on historic whaling records, and an update of knowledge on these key parameters is important for the success of conservation and management strategies.

Method

We investigated the seasonal acoustic occurrence, diel-vocalizing pattern and acoustic characteristics of visually undetected Bryde's and sei whales in Bazaruto Archipelago, Mozambique. Year-round bioacoustic data were collected in 2020 at water depth of 4 m using two hydrophones deployed at two near-shore barrier reef sites (2MR and 5MR hereafter) separated by 9 km.

Results

Overall, 1198 and 4115 sei whale downsweep calls were detected respectively from the 2MR and 5MR station. While 24 and 464 Bryde's whale downsweep calls were detected from the 2MR and 5MR station respectively. Bryde's whale call characteristics were: mean duration: 1.2 ± 0.2 (SD) s, peak frequency: 93.7 ± 13 Hz, and frequency range: 48.5–150.6 Hz. Sei whale call characteristics were: mean duration: 1.03 ± 0.2 s, peak frequency: 57.8 ± 7.5 Hz, and frequency range: 28.5–114.7 Hz. Both whale species were more vocally active at night than during the day. Bryde's whale calls were detected in August and September from the 2MR station, and from August to October from the 5MR station. Sei whale calls were detected from August to October from the 2MR station, and from April to October from the 5MR station. Detection range modelling indicates that whale calls could be detected to a maximum of 6 km from recorder locations, which did not support simultaneous detection of calls between the two sampling sites.

Conclusion

Our study shows that Bryde's and sei whales occur in shallower waters than previously thought in this region, and their seasonality suggests that Mozambican waters are likely used for overwintering and/or breeding.