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Confined Deep Water Acoustic Noise Study within the Bahamian TOTO

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The three sided deep coral reef that borders Andros Island, Bahamas is populated with deep water acoustic sensors that presents a unique opportunity to study the impact of wind and wave in a physical environment with limited man-made noise sources over a wide acoustic band (50-40kHz). This area is known as the "Tongue of the Ocean" (TOTO) for its unique satellite viewed shape. The region's deep acoustic channel (∼1550m) is surrounded by steep walls and only one outlet suggesting a highly reverberant cavity where weather produced ambient noise signatures may persist over greater periods producing levels greater than typically observed in the open ocean. In this study, daily acoustic spectra are gathered on two sensors spaced 20 km apart with accompanied wind and weather information. The spectra will be correlated to advancing and receding weather fronts in an effort to relate the surface changes to the deep water ambient noise levels. This study also serves as a precursor to a shallow water acoustic noise intensity study where similar weather comparisons will be made and compared to the deep water counterpart.