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Historical ambient noise levels in a topographically isolated basin

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During the late 1970's and early 1980's, careful measurements of ambient noise were made in the Tongue of the Ocean (TOTO) in the Bahamas. The measurements were made using a vertical array of five omnidirectional hydrophones moored in 2200 m water depth with an average hydrophone depth of 122 m. Data were collected within a 20 Hz - 20 kHz band at 10 specific 1/3 octave band frequencies, and then reported in spectrum level as a function of surface wind speed. Records contaminated by anthropogenic sources (e.g. local vessel traffic), biological sources (e.g. marine mammal vocalizations) and other sources (e.g. rain) were eliminated to allow analysis of background ocean ambient noise only. TOTO is a deep basin, topographically isolated from the Atlantic Ocean, and therefore largely acoustically decoupled from the Atlantic Ocean deep sound channel. The basin's geographical isolation and the controlled data collection methodology employed over a four-year period make this three-decade-old data set a potential proxy for pre-industrial era ocean noise levels. The environmental setting, data collection methodology, analysis methodology and results are presented and discussed within the context of historical ocean ambient noise levels.