Comparing Habitat Soundscapes in North Miami Beach

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BACKGROUND
• Too much background noise can obstruct fish communication and ability to distinguish between sounds over long distances (Lindseth & Lobel 2018).
• Prominent anthropogenic noise from boat noise in shallow waters obstructs 500 Hz to 25 kHz (Hildebrand 2009).
• Invertebrates, esp. shrimp calls: 2.5-15 kHz (Lindseth & Lobel 2018)

METHODS
1. Deployed SoundTrap hydrophones in 2 locations—natural and artificial—to compare habitats (see Figures 1-3).
2. Recorded data for 48-hour collection periods over 2 weeks.
3. Imported acoustic data to Raven Pro 2.0 (Cornell Lab of Ornithology) to generate spectrograms.
4. Trained template detector using in situ data to scan remaining dataset and recognize snapping shrimp acoustic signatures.

RESULTS/DISCUSSION
• Artificial habitats appear to show reduced numbers of snapping shrimp calls (see Figure 4).
• After conducting a T-test, we calculated a significant difference in detections per hour between natural and artificial habitats (p-value < 5.003 X 10^-7, df = 66.536).

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