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## Sounds, Not Silence: Student Combines Ecology, Music Interests in Coral Reef Research

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## ***Sounds, Not Silence:***

### **Student Combines Ecology, Music Interests in Coral Reef Research**

July 7, 2015

BLOOMINGTON, Ill.— Earth is singing, but humans aren't hearing its plaintive tune, according to Madz Negro '16 (New Berlin, Ill.).

An Illinois Wesleyan student double majoring in ecology and music, Negro's study abroad experience in Panama included research on the acoustic ecology of coral reefs. She searched for correlations between the soundscape of coral reefs and the amount of living and dead coral in the San Blas Islands in the Guna Yala Comarca of the Caribbean Sea.

"The coral reefs have an abundance of sound," said Negro. "Barnacles rasping, fish communicating in 'pops', snapping shrimp and of course noises resulting from human influence, such as boats. The resulting soundscape is a kind of crackling sound, very similar to a bonfire in the dead of autumn."

To hear these sounds, Negro used an underwater microphone to record the reefs. She then measured the amount of living and dead coral and analyzed the spectrograms of the soundscape and percentages of coral cover.

Negro said she found the percentage of dead coral negatively correlated with both the frequency levels and average high amplitude levels.

"It's important to search for these kinds of correlations in soundscapes because humans can begin to use sound as an unobtrusive, rapid survey method of a reef's health," she said. "We can spend less time surveying a reef's health and more time on repairing the reef or finding ways to prevent further harm."

"I believe that like humans, Earth is speaking and singing to us indicating its current state of being," she added. "We need to start listening."

Negro said she found the program, SIT Study Abroad's Panama: Tropical Ecology, Marine Ecosystems, and Biodiversity Conservation program, through Illinois Wesleyan's International Office, and chose it specifically for its research component as a way to combine her dual interests in ecology and music.

At Illinois Wesleyan Negro plays violin and viola in the IWU Civic Orchestra and in chamber groups, and has toured as part of a quartet in the School of Music. She is at work on her first EP. Last summer Negro spent a week in the backcountry of Alaska through the Composing in the Wilderness field course. She also volunteers for the IWU Peace Garden.



Madz Negro used an underwater microphone to record the soundscape of coral reefs.



Madz Negro studied abroad with a tropical ecology program in Panama.