

Experiencing science through sound: night fishing on Lake Gatún

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Importance of Science Communication

1 As we face existential challenges like the climate crisis, effective science communication can **engage diverse audiences** in the scientific process¹ and **inspire care for the natural world**². Specifically, arts-based science communication can reach audiences with different levels of science background knowledge, **creating space for personal meaning-making**³.

Sound as storytelling

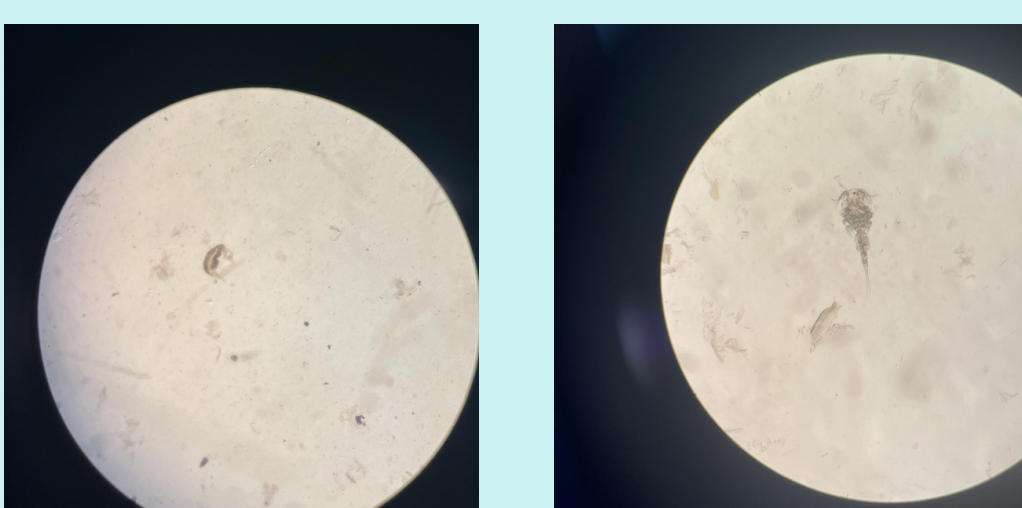
2 Sound can communicate scientific topics verbally and nonverbally. An **ecosystem's soundscape** contains unique information about its **natural and cultural context**⁴. Frogs calling, a nearby highway, or overheard music can ground the listener in **place, season, and even time of day**.

Because field work is often a visual process, **Panama's rich soundscapes are overlooked in scientific research** when sound is not directly tied to a research question. However, sharing recordings from the field can **increase knowledge of the scientific process**, cultivate a sense of **community with scientists**³, and **improve understanding of the natural world**.

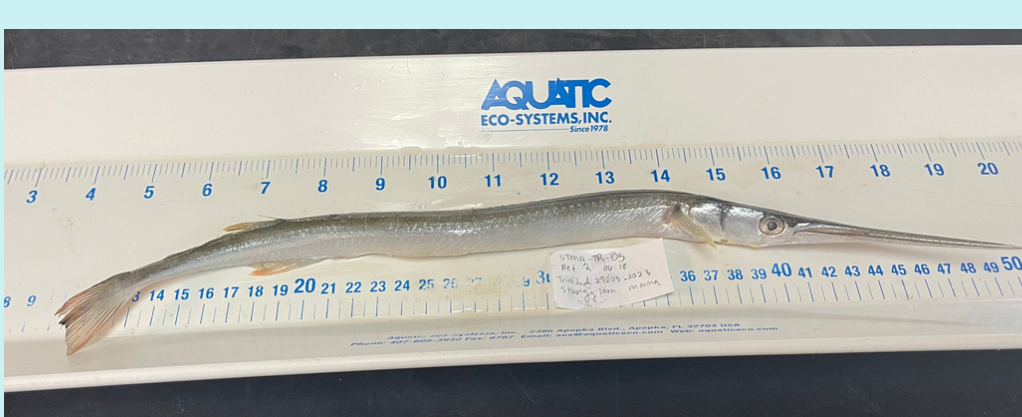
To demonstrate, I am recording sound **during night field work in Lake Gatún**.

Fishing on Lake Gatún

3 During the Panama Canal's first century, **18 marine fish** were reported crossing between oceans⁵. But since the **2016 expansion** of the lock system, **11 previously unreported marine fishes** have been documented⁵.



My project is examining **the parasites that are "hitchhiking"** through the canal on these marine fishes.



My research involves catching **Atlantic needlefish (Strongylura marina)**, a marine fish that is invading the Panama Canal. I then dissect needlefish in the lab and **preserve parasites for identification**.

Works Cited

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Finally, I'm thankful for the needlefish that were used for this project.

Recording Sound

4 Recording sound can be done in many settings with **minimal equipment**. I used my iPhone, pointing the microphone **towards the source of the sound**. I tried to use professional equipment, but it was too challenging to record my own work while fishing.

After recording, I name the file a brief description of the activity for future reference. I trimmed the clips for relevance, mixing them together when necessary.

Hauling up net, howler monkeys in the dis...	May 25, 2023	02:43
Hauling net, boat motor	May 25, 2023	11:45
Early morning birds, motor, chatting, laug...	May 25, 2023	08:13
Net 2 midnight	May 24, 2023	05:54
Net 1 midnight	May 24, 2023	01:44
Driving to nets, midnight	May 24, 2023	03:11
Sleeping on the boat	May 24, 2023	00:37
Sleeping on the boat, dogs, howler monke...	May 24, 2023	01:22
Sleeping on the boat, barge horn, dogs	May 24, 2023	02:47

Findings

5 Driving to Lake Gatún



Sleeping on the boat



Hauling nets at sunrise



Dissecting needlefish in the lab



Discussion

6 Audio recordings can supplement scientific presentations or outreach by **engaging different senses** and being accessible to different audiences. Additionally, science podcasts have become more popular in the last two decades⁶, with producers motivated to help their listeners **value science**⁷.

Hearing **emotion and excitement** in scientist's voices can be humanizing, allowing space for feelings that are **normally left out from science communication**.

Audio recording is a tool that researchers can keep, literally, in their back pockets. Is sound an important part of your research? **Is there something you wish the public could hear** or understand about your work?

About Me

I am a Fulbright research grantee and science journalist currently based in Panama City, Panama. I graduated from Emory University with a degree in environmental sciences and biology in 2022.

I created, produced, and edited *Sea to Trees*, Acadia National Park's official narrative science podcast. My work has also appeared in *The Bitter Southerner*, *The Working Waterfront Newspaper*, *Park Science Magazine*, and more. You can see my portfolio at olivia-milloway.info.

