

Using tiger sharks to help estimate the size of a seagrass ecosystem in the Bahamas

November 2 2022, by Bob Yirka



Seagrasses store carbon in their dense root systems, called rhizomes. These continuously growing root systems are actually horizontal underground stems, that send out lateral shoots and roots. Carbon is stored in these systems forever, and their density and structure also provide critical benefits to coastal communities through sediment capture, stabilization, and as a line of defense against storm and wave energy. Credit: Photo courtesy of Cristina Mittermeier and SeaLegacy, 2020

An international team of researchers has used movements of tiger shark populations to make estimations regarding the size of a seagrass ecosystem. In their paper published in the journal *Nature Communications*, the researchers describe the methods they used to measure the amount of seafloor covered by seagrass in the Bahama Banks in the Bahamas.

As climate change proceeds, scientists around the world continue to study regions that might be impacted and possible ways to slow its progress. In this new effort, the researchers noted that up to 17% of carbon sequestered in [marine sediments](#) is held in seagrass, which suggests it could play a major role in climate change.

Unfortunately, no one really knows how much of the world's ocean floors are covered in seagrasses. In this new effort, the researchers hoped to increase that [knowledge base](#) by measuring the size of the seagrass ecosystem in Bahama Banks—a location that has major seagrass coverage.



Seagrass meadows are more than just blue carbon sinks, and act as feeding and nursery grounds for an abundance of marine life—such as elasmobranchs like sharks and rays, and economically and culturally significant species like Queen Conch. Credit: Photo courtesy of Cristina Mittermeier and SeaLegacy, 2021

To measure how much of the Bahama Banks seafloor is covered with seagrass, the researchers turned to tiger sharks, which are known to prefer living in areas that are covered with seagrass—it makes it easier to sneak up on prey.

The researchers captured 15 of the sharks and attached location trackers to them and then let them go. Tracking their movements over time allowed the researchers to create a virtual map of the seagrass fields in which they lived. The researchers also conducted 2,500 surveys by

diving into the seagrass fields.

Using data from both efforts, the researchers created a reasonably accurate map of the seagrass field in Bahama Banks and estimated its size—approximately 66,000 to 92,000 km². That finding, the researchers found, makes the field the largest known to date. They also note it expands the known seagrass coverage globally by approximately 41%. And this, they note, highlights the importance of research surrounding the amount of [seagrass](#) covering the oceans floor. Finding ways to protect or expand such fields could prove useful in slowing [climate change](#).

More information: Austin J. Gallagher et al, Tiger sharks support the characterization of the world's largest seagrass ecosystem, *Nature Communications* (2022). [DOI: 10.1038/s41467-022-33926-1](https://doi.org/10.1038/s41467-022-33926-1)

© 2022 Science X Network

Citation: Using tiger sharks to help estimate the size of a seagrass ecosystem in the Bahamas (2022, November 2) retrieved 26 April 2024 from <https://phys.org/news/2022-11-tiger-sharks-size-seagrass-ecosystem.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--