Automatic Detection of Seagrass Holes Using Floating RGB Camera Platform

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Goal & Motivation

- **Detect seagrass potholes**

  Disturbances in the seagrass meadows

- **Seagrasses critical:**
  - Habitat
  - Carbon Dioxide "sink"
  - Stability

Image source: texasseagrass.org

Why Onboard Processing?

- **Onboard gives results that can be acted on quickly**
  - Help researchers focus their efforts during field work
  - Guide autonomous science platform
- **Current platform is not a robot (yet!)**

Methodology

1. Gather data for clustering

2. Enhance images

3. Cluster into seafloor types

4. Onboard enhancement & mapping

5. Onboard hole detection

Challenge: Underwater Image Quality