Abstract

The spatial distribution of seagrass and algae communities can be difficult to determine in large, shallow lagoon systems where high turbidity prevents the use of optical methods like aerial photography or satellite imagery. Further complications can arise when algae are not permanently attached to the substratum and drift with tides and currents. A study using acoustic seafloor discrimination was conducted in the Indian River Lagoon (Florida, USA) to determine the extent of drift algae and seagrass. Acoustic surveys using the QTC View V system based on 50 and 200 kHz transducers were conducted near Sebastian Inlet. Results indicate that areas of seagrass can be identified, and are mixed with a high abundance of drift algae. Nearest-neighbor extrapolation was used to fill in spaces between survey lines and thus obtain spatially cohesive maps. These maps were then ground-truthed using data from towed video and compared using confusion matrices. The maps showed a high level of agreement (60%) with the actual distribution of algae, however some confusion existed between bare sand and algae as well as seagrass.

Keywords

Acoustic ground discrimination, remote sensing, seagrass, drift algae, Indian River Lagoon, Florida.