Seagrass Survey Methodology

Equipment

Life jackets
Bowtech Dive-Cam & Overlay Unit
Laptop
Survey Forms
Weather Writer clipboard
Pencils

Rationale

Seagrass beds are a feature of several MPAs in the D&S IFCA District. Seagrass beds provide important food for wildfowl, and nutrients to support animal communities on the seabed. Their roots catch and trap sediments, reducing coastal erosion. Submerged seagrass beds are also used as a nursery area, protecting young fish and shellfish, and provide a sheltered home for many other animals, such as pipefish and seahorses (JNCC).

These surveys aim to gain a greater understanding of the distribution, spatial extent, density and condition of the seagrass beds within MPAs. This information is used to inform the management of fishing activities within MPAs. The surveys are repeated regularly, usually every two years, to monitor changes in the extent of the beds and ensure that areas closed certain fishing activities still cover the full extent of the seagrass.

These surveys are carried out in Torbay, Plymouth Sound and the Salcombe-Kingsbridge Estuary.

Logistics and Practicalities

These surveys are usually carried out in late summer, before the seagrass starts to die back for the winter but when there are less recreational vessels/moorings to navigate around.

The survey is carried out on board the IFCA's research vessel, Black Jack, and all relevant Risk Assessments should be adhered to.

The survey methodology is very straightforward, and could be assisted by volunteers with some knowledge of marine biology. Any volunteers would need to have Sea Survival tickets to work on board the vessel.

Survey Methodology

A Bowtech Dive-Cam with an LED lamp is towed from the vessel. The camera is housed in a cradle to help weigh it down and to create smoother flying through the water column. An umbilical cable runs back from the camera to the overlay unit and laptop, to allow the footage to be viewed in real time. Footage is also recorded, so can be reviewed at a later date.

Transects are carried out across the seagrass beds. Each transect is approximately 50m apart, and follows the natural path in which the vessel is drifting according to the tide/wind. This ensures the vessel will be travelling slow enough to get a clear image (approx. 0.5kn).

Along each transect data is recorded either every minute (approximately) or whenever the substrate/habitat changes, whichever comes first. At each point the following information is recorded:

- Transect number
- Coordinates
- Substrate
- Habitat
- Seagrass density
- Depth
- Time

All information is recorded on a standard survey form (see below). Transects continue until the edge of the seagrass bed is found.

The data is plotted using MapInfo GIS software to show the route of each transect, the density of seagrass along each transect, and the extent of each bed.

Site: Date: Devon & Severn IFCA

Seagrass (SG); Kelp (KP); Sagrassum (SM); BLW (Boot lace weed); SAT (Short Algal Turf); BR (Bare); SW (Seaweed); OT (Other)

0 (Bare); 1 (Sparse); 2 (Patchy); 3 (Medium), 4 (Dense) GR (Gravel); PB (Pebbles), MD (Mud), SA (Sand) SASH (Sand-Shell); RK (Rock); OT (Other)

Transect	Latitude	Longitude	Substrate	Habitat	Density	Depth	Time	Notes
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
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	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
	50°	003°	GR/PB/RK/MD/SA/SASH/OT	SG/KP/SM/BLW/SAT/BR/SW/OT	0, 1, 2, 3, 4			
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