Torbay rMCZ Seagrass Survey

2012

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March 2013

Contents

1. Introduction

Torbay rMCZ is an inshore site located in the south west of the UK. The site covers an area of coastline in South Devon between Oddicombe Beach and Sharkham Point, protecting a total area of approximately 20 km^2. Beginning at the coastline, the boundary extends between 1 – 2.5 km out to sea and encompasses Hope's Nose near Torquay and Berry Head near Brixham (Defra, 2012).

Nine different habitats are proposed as designated features of this rMCZ, including seagrass beds. 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). The Conservation Objective given to the designated seagrass beds is to "recover to favourable condition".

In order to development management plans for the fishing activities within the rMCZ, in relation to seagrass beds, Devon & Severn In shore Fisheries and Conservation Authority (D&S IFCA) surveyed all the known seagrass beds within Torbay.

1.1 Objectives
- Gain a greater understanding of the distribution, spatial extent and condition of seagrass beds throughout the Torbay rMCZ.
- GIS mapping on the extent and locations of seagrass beds in Torbay, with the production of charts showing these areas.
- Gather information on the condition and density of the beds
- Input into the development of management plans to ensure that the designated beds within the rMCZ are fully protected from the possible impacts of towed fishing gear.

2. Methodology

An underwater camera with integrated LED lights was towed from the vessel. The camera was housed in a cradle to help weigh it down; the cradle also had fins attached to create smoother flying through the water column. An umbilical cable ran back from the camera to a surface monitor, to allow the footage to be viewed in real time. It was also recorded for future analysis.

Transects were carried out across known seagrass beds within the Torbay area. Each transect was approximately 50m apart, and followed the natural path in which the vessel drifted according to the tide/wind. This was done to ensure the vessel would be travelling slow enough to get a clear image.

Along each transect data was recorded either every minute (approximately) or whenever the substrate or habitat changed, whichever came first. At each point the following information was recorded:
- Transect number
- Coordinates
- Substrate
- Habitat
- Seagrass density
- Depth
- Time

All information was recorded on a standard survey form (Annex 1). Transects continued until the edge of the seagrass bed was found.

The data was then 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.

3. Results

The areas of each seagrass bed are summarised in the table below, and shown in Figures 1-3. Figure 1 also shows the seagrass density changes across each bed, while Figure 2 shows proposed 50m buffer areas around each bed which could be used for management purposes.

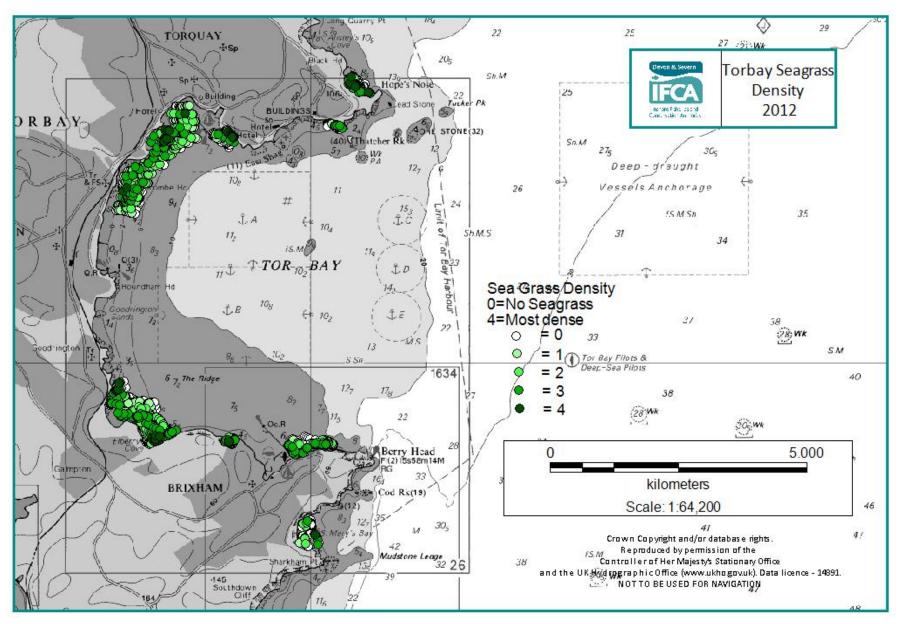| Bed	Area (ha)	Max. Depth (m)
Hope's Nose	3.721	8.8
Thatchers Rock	0.569	7.8
Millstones	4.19	7.8
Torre Abbey Sands	90.78	8.5
Broadsands-Elberry	44.37	8.7
Fishcombe	1.462	8.6
Breakwater	3.171	9.8
Shoalstone	2.263	10.5
St Mary's Bay	1.087	6.9
Total	**151.613**	n/a

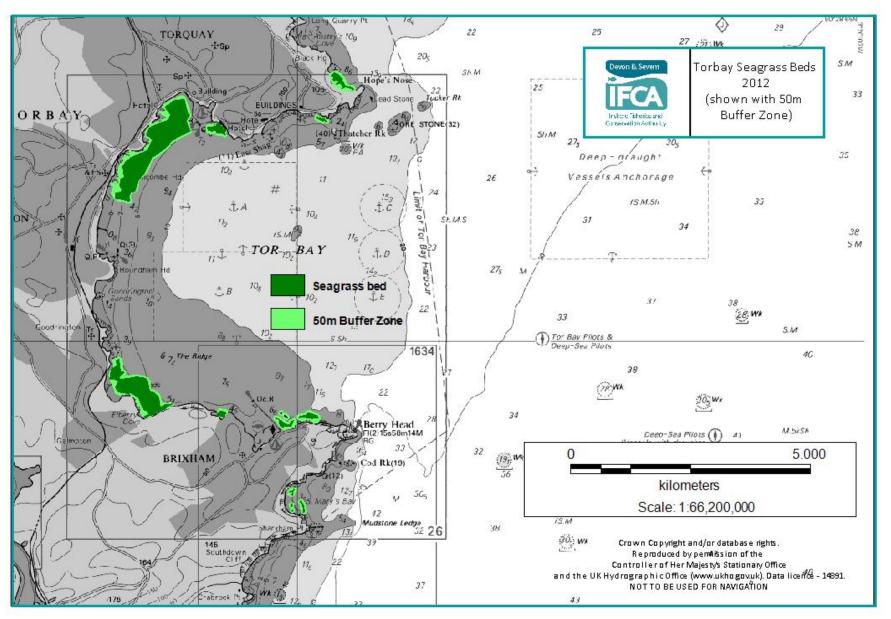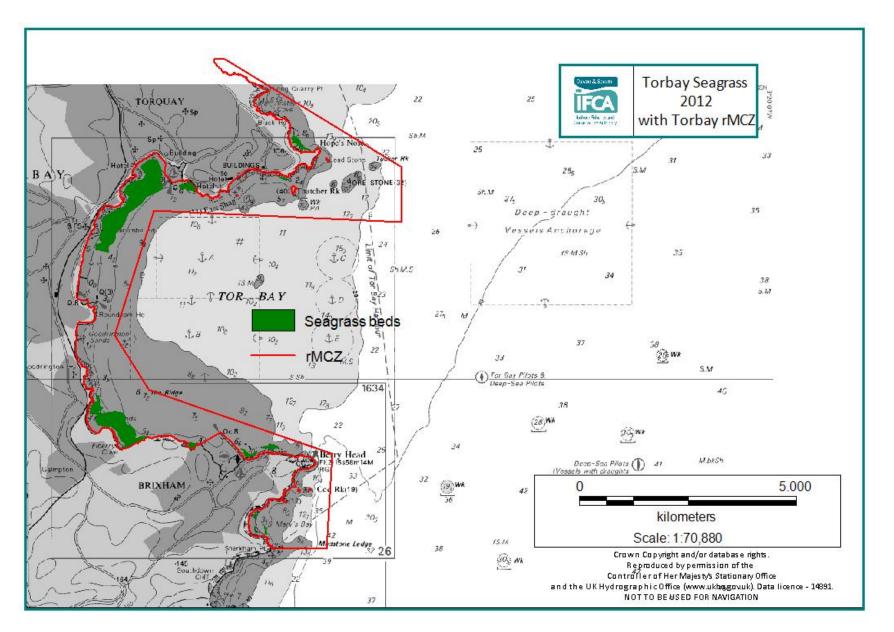**Fig. 1** Variation in seagrass density across all beds   5

Fig. 2 Area of seagrass beds, with proposed 50m buffer zone

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Fig. 3 Area of seagrass beds with extent of rMCZ

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4. Recommendations

It is recommended that this survey is repeated regularly, ideally annually, to monitor the condition and size of the seagrass beds over time. Any changes to the health of the beds could then be identified using this study as a baseline. This will also feed into the condition assessment of the Torbay MCZ, which has the conservation objective of "recover to favourable condition" for seagrass.

As this study only focussed on known seagrass beds in Torbay, it is recommended that a more extensive study is undertaken, surveying the entire Torbay area to identify any potential new areas of seagrass.

5. References

Defra, 2012. Marine Conservation Zones: Consultation on proposals for designation in 2013. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/82723/mcz-annex-a1-part3-121213.pdf

JNCC. MCZ Features Catalogues. http://jncc.defra.gov.uk/page-5540

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Annex 1. Survey form

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

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			
	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			