Owenacurra Estuary

Sampling Fish for the Water Framework Directive - Transitional Waters 2008

The Central and Regional Fisheries Boards

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INTRODUCTION

A fish stock survey was carried out at sites on the Owenacurra Estuary, as part of the programme of monitoring for the Water Framework Directive (WFD), between the 14th and the 15th of October 2008 by staff from the Central Fisheries Board (CFB) and the South Western Regional Fisheries Board (SWRFB).

The Owenacurra Estuary is part of the greater Cork Harbour and is located approximately 22 kilometres east of Cork on Ireland's south coast. The town of Midleton is situated at the top of the estuary. The estuary covers an area of 1.12km². The estuary runs south for about three kilometres before flowing into the North Channel Great Island Estuary and does not have a strong marine influence. The estuary is relatively narrow and completely empties at low tide leaving a shallow narrow channel making it un-navigable. The Owenacurra Estuary, owing to the sheltered conditions, has large intertidal flats with mud being the predominant bed type. The estuary receives the water of the Owenacurra River which drains primarily land under tillage. The river is noted as having good stocks of sea trout. .

The town of Midleton used to discharge sewage directly into the estuary but upgrades to the sewage treatment facilities has fixed this problem; however the estuary was classified as eutrophic by the EPA in their survey of tidal waters 2004-2006 (Clabby *et al.*, 2008).

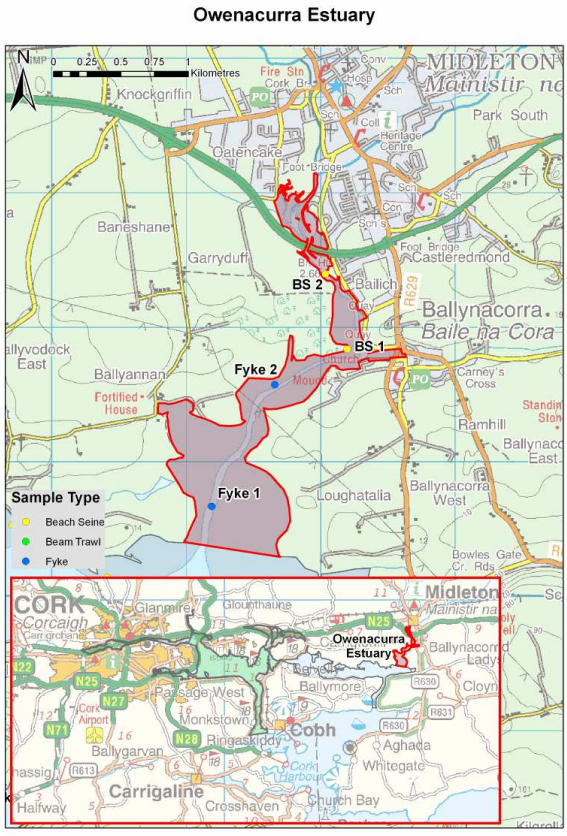

Figure 1: Location map of the Owenacurra Estuary indicating sampling sites, October 2008

METHODS

Current work in the UK indicates the need for a multi-method netting approach (seine nets, fyke nets and beam trawls) to sampling for fish in estuaries and these procedures are now the standard CFB methodology for fish stock surveys in transitional waters for the WFD monitoring programme. Two sampling methods were used during the Owenacurra Estuary survey (i.e. beach seines and fyke nets). Beam trawling was not attempted due to the soft mud substrate and shallow nature of most of the estuary. Portable GPS instruments were used to mark the precise location of each sampling site (Figure 1).

Two beach seine and two fyke net sites were surveyed in 2008. All sites were chosen to encompass the majority of geographical and, where possible, habitat ranges of the estuary.

RESULTS

Fish species diversity in the estuary during the survey was low with only seven species being captured (five species at beach seine sites and two species at fyke net sites). The most frequently occurring and abundant species were sprat (526) and common goby (316) (Table 1)

Salinity values taken at beach seine sites ranged from 2.20ppt to 8.65ppt.

Table 1: List of fish species and abundances of each species by net type in Owenacurra Estuary, October 2008

		Owenacurra	
Scientific name	**Common Name**	**Beach seine (2)**	**Fyke net (2)**
Platichthys flesus	Flounder	12	-
Sprattus sprattus	Sprat	526	-
Pomatoschistus microps	Common Goby	316	-
Anguilla anguilla	Eel	-	1
Gobius niger	Black Goby	2	-
Spinachia spinachia	15-Spined Stickleback	-	1
Syngnathus acus	Greater Pipefish	1	-

DISCUSSION

An essential step in the WFD monitoring process is the classification of the status of transitional waters, which in turn will assist in identifying the objectives that must be set in the individual River Basin Management Plans.

The EPA have assigned the Owenacurra Estuary an interim draft classification of “Moderate” status, i.e. must be improved to “Good” status by 2015, based on general physico-chemical elements, phytoplankton and macroalgal growths (SWRBD, 2008).

A new WFD fish classification tool, Transitional Fish Classification Index or TFCI, has been developed for the island of Ireland (Ecoregion 1) using NIEA and CFB data. This is a multi-metric tool based on similar tools developed in South Africa and the UK (Harrison and Whitfield, 2004; Coates *et al.,* 2007). The Owenacurra has been assigned a draft classification of "Moderate" (EQR=0.375) using the fish classification tool.

A final overall classification will be assigned to the estuary in December 2009 after the consultation and review period has been completed.

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