

Ilen 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 Ilen Estuary, as part of the programme of monitoring for the Water Framework Directive (WFD), between the 22nd and the 29th of October 2008 by staff from the Central Fisheries Board (CFB) and the South Western Regional Fisheries Board (SWRFB).

The Ilen Estuary is located in County Cork and is bordered by the towns of Skibbereen in the upper estuary and Baltimore (Plate 1) in the lower estuary, on Ireland's south west coast (Figs. 1 and 2). The estuary covers an area of 9.66km². The upper estuary, above Ringarogy Island, is shallow, has a riverine feel and the substrate is dominated by a layer of mud over gravel. The lower estuary has a strong marine influence and the shore line is dominated by exposed jagged rock and thus finding suitable beach seine sites was challenging.

The Ilen River flows into the estuary, adjacent to Skibbereen, and is a medium sized spate river that drains an area of 303 square kilometers. The River Ilen is noted for its excellent salmon and sea trout fishing although no salmon were captured during the survey. The estuary is promoted by the South Western Fisheries Board as a good fishing venue for bass, flounder, dogfish, mullet and sea trout.



Plate 1: Seine netting on the Ilen Estuary adjacent to Baltimore Harbour, October 2008

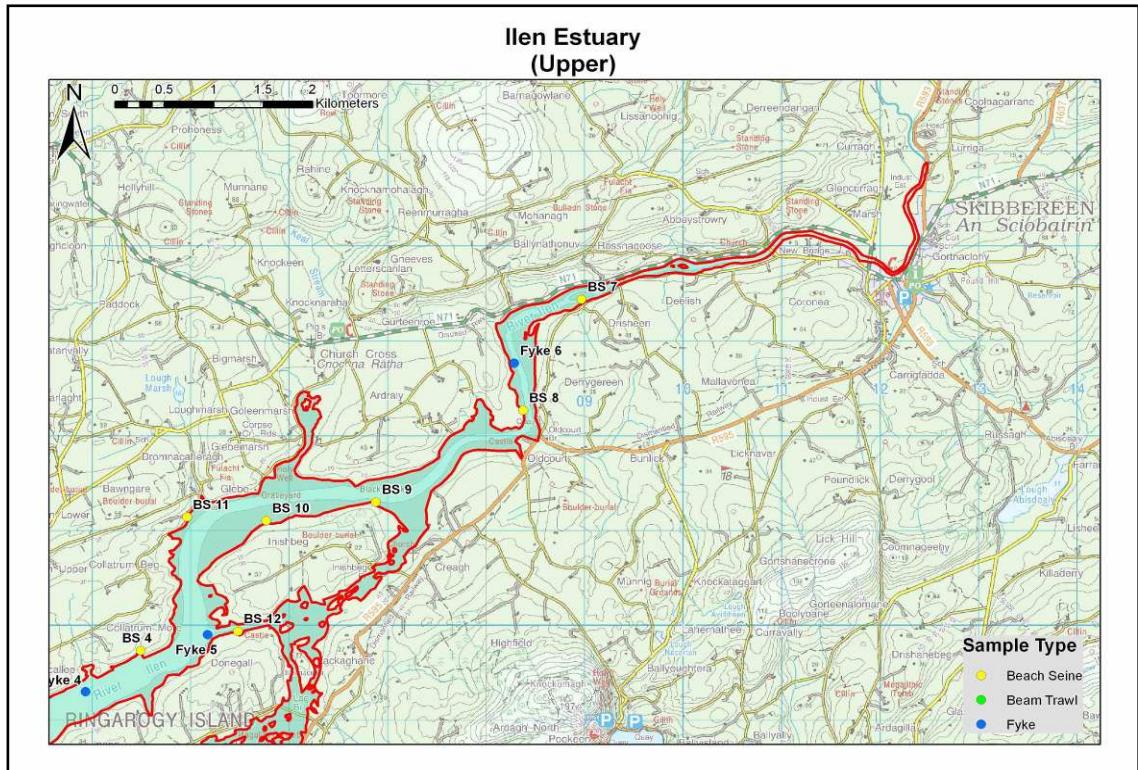


Fig. 1: Location map of the Upper Ilen Estuary indicating sampling sites, October 2008

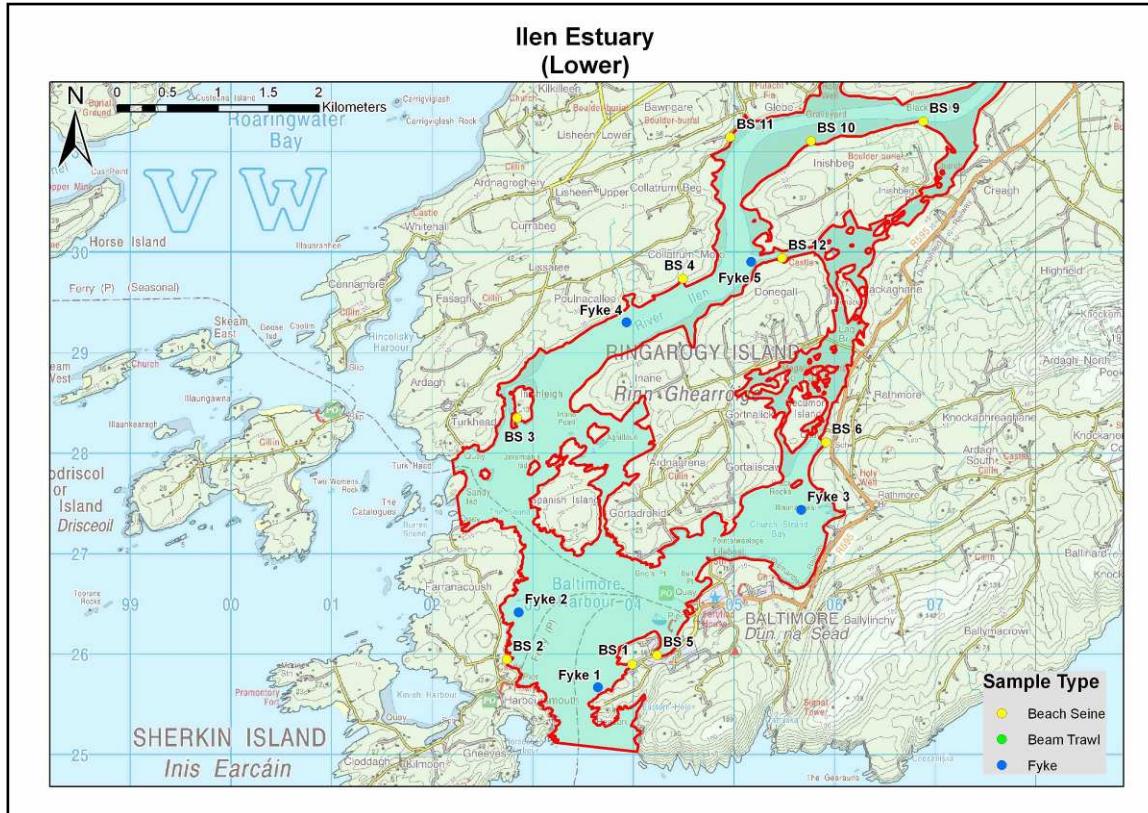


Fig. 2: Location map of the Lower Ilen Estuary indicating sampling sites, October 2008

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 Ilen Estuary survey (i.e. beach seines and fyke nets). Twelve beach seine sites were selected during the survey. All sites were chosen to encompass the majority of geographical and, where possible, habitat ranges of the estuary. Beam trawling was not attempted due to the rocky nature of the lower estuary and shallow muddy habitat of the upper estuary. Portable GPS instruments were used to mark the precise location of each sampling site (Fig. 1).

RESULTS

Sixteen fish species were captured at the seine net sites and the list was dominated by marine species. The most frequently occurring fish species was common goby, recorded at ten seine net sites, followed by thick-lipped grey mullet (present at nine sites) and 15-spined stickleback (six sites). The most abundant species was common goby (470), followed by thick-lipped grey mullet (427) and sand smelt (119) (Table 1). Two rarely captured species were recorded; a sea snail and deep-snouted pipefish (Table 1).

Six fyke nets locations were surveyed in 2008. Thirteen fish species were captured in the fyke nets. Pollock and five-bearded rockling were the most frequently captured fish species (Table 1). The most abundant fish species captured in the seine nets was five-bearded rockling (12) and whiting (10).

Overall twenty three species and sea trout, many rocky habitat species (e.g. ballan wrasse, corkwing wrass and two-spotted goby) were captured in the survey indicating good diversity. No eels were recorded during the survey; however they are known to reside in the Ilen River.

Salinity values taken at beach seine sites ranged from 0.05ppt to 27.55ppt.

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

Scientific name	Common Name	Ilen estuary	
		Beach seine (12)	Fyke net (6)
<i>Chelon labrosus</i>	Thick Lipped Grey Mullet	427	-
<i>Platichthys flesus</i>	Flounder	13	4
<i>Sprattus sprattus</i>	Sprat	-	2
<i>Pomatoschistus microps</i>	Common Goby	470	-
<i>Pleuronectes platessa</i>	Plaice	3	1
<i>Taurulus bubalis</i>	Long-Spined Sea-Scorpion	1	3
<i>Atherina prebyter</i>	Sand Smelt	119	-
<i>Ciliata mustela</i>	5-Bearded Rockling	-	12
<i>Limanda limanda</i>	Dab	-	1
<i>Salmo trutta</i>	Brown Trout	-	1
<i>Salmo trutta</i>	Sea Trout*	1	1
<i>Merlangus merlangus</i>	Whiting	-	10
<i>Gadus morhua</i>	Cod	-	3
<i>Pollachius pollachius</i>	Pollock	2	7
<i>Labrus bergylta</i>	Ballan Wrasse	3	2
<i>Spinachia spinachia</i>	15-Spined Stickleback	25	-
<i>Gobiusculus flavescens</i>	2-Spotted Goby	8	-
<i>Syngnathus typhle</i>	Deep-Snouted Pipefish	4	-
<i>Sympodus melops</i>	Corkwing Wrasse	11	-
<i>Trisopterus minutus</i>	Poor Cod	-	2
<i>Syngnathus acus</i>	Greater Pipefish	2	-
<i>Liza aurata</i>	Golden-Grey Mullet	2	-
<i>Liparis laparis</i>	Sea Snail	1	-
<i>Trisopterus luscus</i>	Pouting	-	2

*sea trout are included as a separate “variety” of trout

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 Ilen estuary an interim draft classification of “Good”, i.e. must prevent deterioration below “Good” status, 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 Ilen Estuary has been classed as “Good” (EQR=0.675) status using the fish classification tool which agrees with the classification assigned to the estuary by the EPA (SWRBD 2008).

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

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