

Kilmakilloge Harbour



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 Kilmakilloge Harbour, as part of the programme of monitoring for the Water Framework Directive (WFD), between the 29th and the 30th of October 2008 by staff from the Central Fisheries Board (CFB) and the South Western Regional Fisheries Board (SWRFB).

Kilmakilloge Harbour is part of Kenmare Bay and is located approximately 16km south-west of Kenmare on Ireland's south west coast (Fig. 1). The estuary covers an area of 5.85km² and is strongly influenced by the marine environment. The predominant bed type in the estuary is solid rock or stones of various sizes and thus finding suitable beach seine sites was challenging.

The estuary receives the water of the Croanshagh and Owenshagh Rivers which run west through the town of Lauragh and into the estuary. Both rivers are noted as having good stocks of sea trout and salmon, although neither species was captured during the survey. The estuary is promoted by the South Western Fisheries Board as a good fishing venue for coalfish, conger, dogfish, mackerel, mullet and ballan wrasse. The main land use within the waterbody is aquaculture (oyster and mussel farming) (Plate 1).



Plate 1: Seine netting in Kilmakilloge Harbour, October 2008

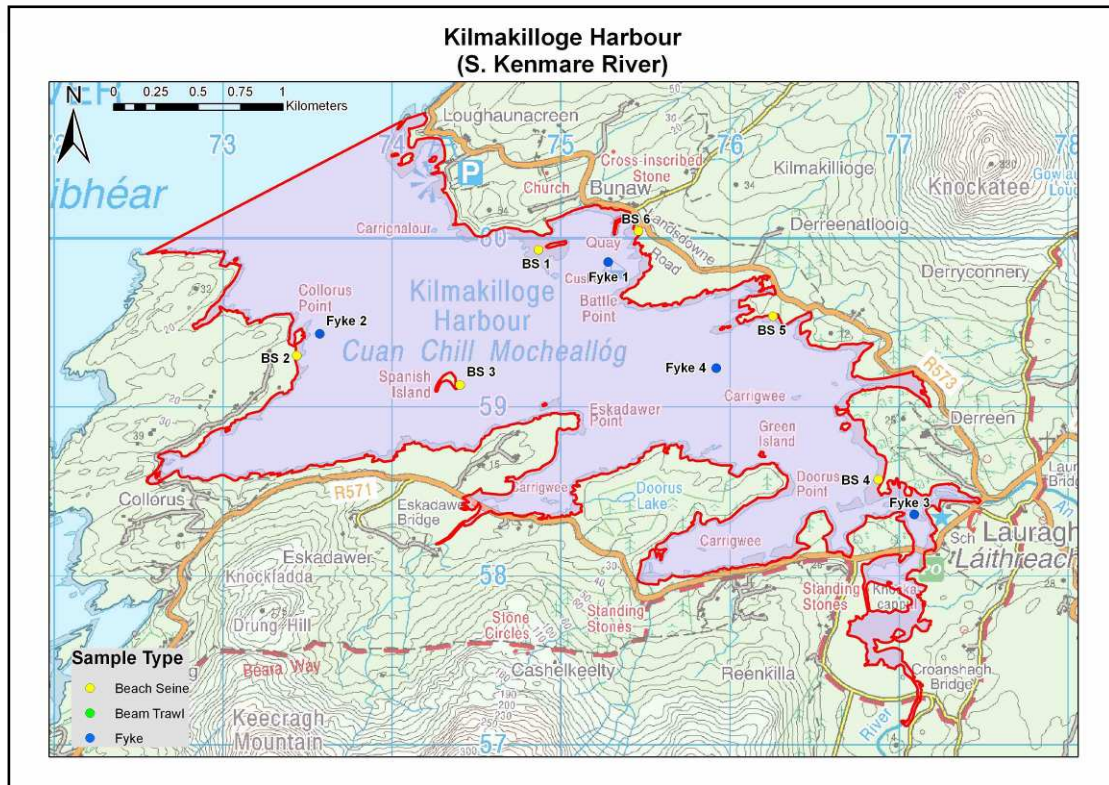


Fig. 1: Location map of Kilmakilloge Harbour indicating sampling sites, October 2008.

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 Kilmakilloge Harbour survey (i.e. beach seines and fyke nets). Six beach seine sites were selected. All seine net and fyke net 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 most of the estuary. Portable GPS instruments were used to mark the precise location of each sampling site (Fig. 1).

RESULTS

Seven fish species were captured in the seine nets and the species list was dominated by marine species (Table 1). The most frequently occurring and most abundant species was two-spotted goby which was present in all seine hauls. This species is generally associated with rocky stony habitat so it was not surprising to capture them frequently and in high numbers during the survey. Two rarely captured species were recorded; a snake pipefish and a dragonet (Plate 2) (Table 1).

Twelve fish species were captured in the fyke nets at four sites. The most commonly captured fish species was five-bearded rockling, ballan wrasse and lesser spotted dogfish. Lesser spotted dogfish

(11) was the most abundant fish species followed by conger eel (6). One rarely captured species was recorded; a bull huss (also known as a greater spotted dogfish) (Plate 3).

Overall nineteen fish species were captured during the survey. Species diversity was good with the catch being dominated by marine fish species. Flatfish were rare but this is to be expected as the substrate was unsuitable for them. Corkwing wrasse was the only species that was captured using both sampling methods.

Salinity values taken at beach seine sites ranged from 6.55ppt to 26.30ppt.

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

Scientific name	Common Name	Kilmakilloge harbour	
		Beach seine (6)	Fyke net (4)
<i>Chelon labrosus</i>	Thick Lipped Grey Mullet	-	1
<i>Platichthys flesus</i>	Flounder	-	1
<i>Pomatoschistus microps</i>	Common Goby	24	-
<i>Entelrus aequoreus</i>	Snake Pipefish	1	-
<i>Anguilla anguilla</i>	Eel	-	5
<i>Taurulus bubalis</i>	Long-Spined Sea-Scorpion	-	1
<i>Atherina prebyter</i>	Sand Smelt	4	-
<i>Ciliata mustela</i>	5-Bearded Rockling	-	3
<i>Merlangus merlangus</i>	Whiting	-	2
<i>Pollachius pollachius</i>	Pollack	-	1
<i>Labrus bergylta</i>	Ballan Wrasse	-	3
<i>Spinachia spinachia</i>	15-Spined Stickleback	24	-
<i>Gobiusculus flavescens</i>	2-Spotted Goby	785	-
<i>Symphodus melops</i>	Corkwing Wrasse	16	2
<i>Callionymus lyra</i>	Dragonet	1	-
<i>Scyliorhinus canicula</i>	Lesser Spotted Dog fish	-	11
<i>Conger conger</i>	Conger Eel	-	6
<i>Trisopterus minutus</i>	Poor Cod	-	3
<i>Scyliorhinus stellaris</i>	Bull Huss	-	1



Plate 2: Dragonet (*Callionymus lyra*) captured in Kilmakilloge Harbour Estuary using a beach seine, October 2008



Plate 3: Bull huss or greater spotted dogfish (*Scyliorhinus stellaris*) captured in Kilmakilloge Harbour Estuary using a fyke net, October 2008

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 Kilmakilloge Harbour 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 Kilmakilloge Harbour Estuary has been classed as “Moderate” (EQR=0.50) status using the fish classification tool and agrees with the EPA draft classification.

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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