

Erriff Estuary



Sampling Fish for the Water Framework Directive - Transitional Waters 2008



The Central and Regional
Fisheries Boards

ACKNOWLEDGEMENTS

The authors wish to gratefully acknowledge the help and co-operation of the CEO Dr. Greg Forde, the assistant CEO Ms. Amanda Mooney and the staff of the Western Regional Fisheries Board. The authors would also like to gratefully acknowledge the help and cooperation from all their colleagues in the Central Fisheries Board and especially Dr. Jimmy King for his guidance with the transitional waters surveys.

We would also like to thank Dr. Martin O' Grady (CFB) and No. 3 Operational Wing, Irish Air Corps (Aer Chór na hÉireann) for the aerial photographs.

The authors would also like to acknowledge the funding provided for the project from the Department of Communications Energy and Natural Resources for 2008.

The report includes Ordnance Survey Ireland data reproduced under OSi Copyright Permit No. MP 007508.

*Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright.
© Ordnance Survey Ireland, 2009*

INTRODUCTION

A fish stock survey was carried out at sites on the Erriff Estuary, as part of the programme of monitoring for the Water Framework Directive (WFD), between the 21st to the 22nd of October 2008 by staff from the Central Fisheries Board (CFB) and the Western Regional Fisheries Board (WRFB).

The Erriff Estuary is located 1.5km north east of the town of Leenane on the border of Counties Mayo and Galway (Fig. 1). The estuary is situated at the very top of the Killary Fiord, which is Ireland's only fiord (Plate 1). The estuary covers an area of 0.40km².

The top of the estuary is located just under Aasleagh falls on the Erriff River and extends approximately two kilometres downstream (Plate 1). Two mountain ranges surround the estuary, i.e. Ben Gorm Mountain to the north and Devilsmother Mountain to the south (Fig. 1). The Erriff catchment is comprised of the Erriff River and the two small loughs of Tawnyard and Derrintin which are located in the upper catchment. The River Erriff is one of Ireland's premier salmon fishing rivers. It is a spate river, characterised by fast flowing streams and deep pools ideal for holding fish. The river is also noted for holding excellent stocks of sea trout. The estuary does not have a strong marine influence.



Plate 1: Aerial photo of the Erriff estuary and Killary Fiord. (Photo courtesy of CFB and No. 3 Operational Wing, Irish Air Corps [Aer Chór na hÉireann])

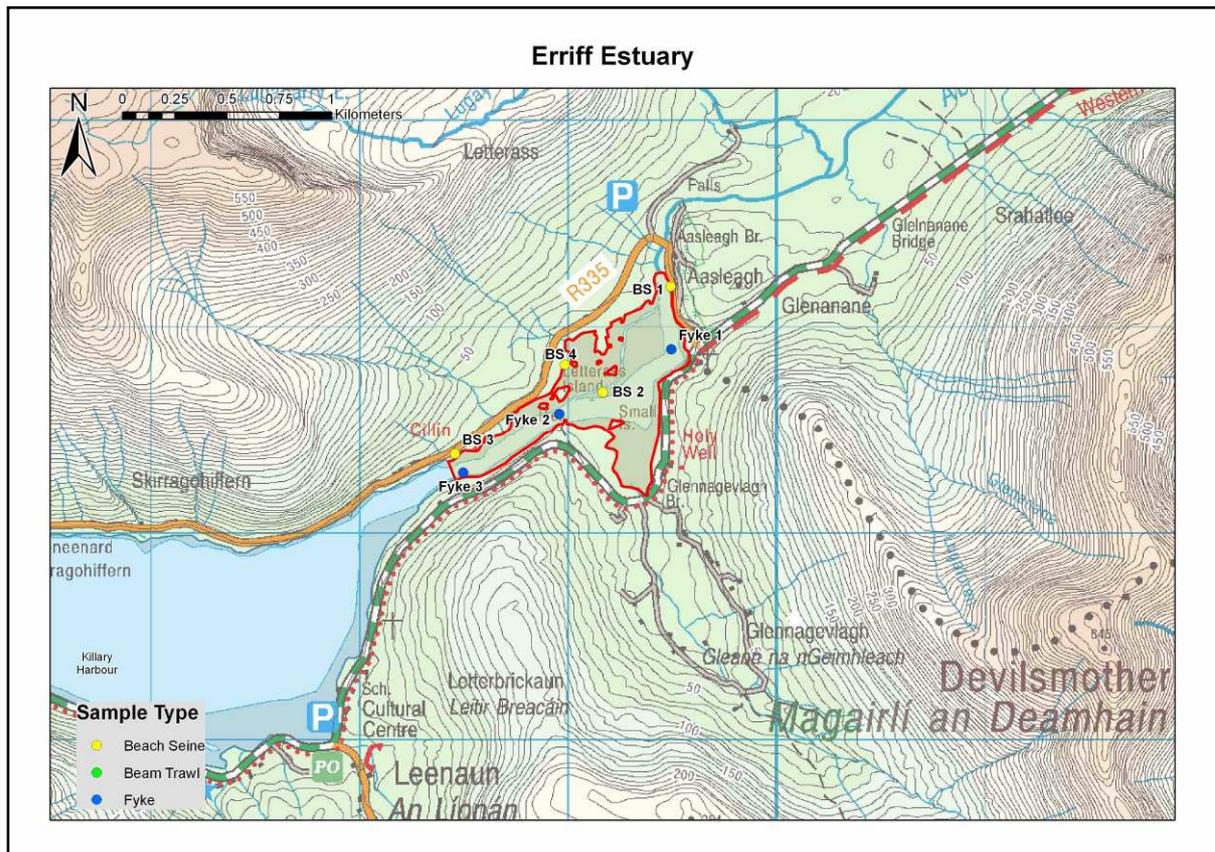


Fig. 1: Location map of the Erriff Estuary indicating sampling sites, November 2008

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 Erriff 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 (Fig. 1).

RESULTS

Four 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. Five fish species were recorded. The most frequently occurring fish species was sand goby followed by common goby, 15-spined stickleback and flounder (Table 1). The two goby species were also the most abundant fish (Table 1).

Three fyke nets locations were surveyed in 2008; all sites were set using the same site selection criteria as for beach seine sites. Nine fish species were captured in the fyke nets. The most frequently captured fish species were eel, pollack and flounder which were captured in two of the three sites (Table 1).

Overall eleven fish species were captured during the survey (Table 1), the most abundant species were sand goby (247) followed by sprat (41) and common goby (14). Flounder, 15-spined stickleback and pollack were caught utilizing both methods.

Salinity values taken at beach seine sites ranged from 1.55ppt to 8.85ppt.

Table 1: List of fish species and abundances of each species by net type in the Erriff Estuary, November 2008

Scientific name	Common Name	Erriff	
		Beach seine (4)	Fyke net (3)
<i>Platichthys flesus</i>	Flounder	7	9
<i>Sprattus sprattus</i>	Sprat	-	41
<i>Pomatoschistus minutus</i>	Sand Goby	247	-
<i>Pomatoschistus microps</i>	Common Goby	14	-
<i>Ammodytes tobianus</i>	Lesser Sandeel	-	2
<i>Anguilla anguilla</i>	Eel	-	3
<i>Pollachius virens</i>	Saithe (Coalfish)	-	1
<i>Symphodus melops</i>	Corkwing Wrasse	-	1
<i>Spinachia spinachia</i>	15-Spined Stickleback	-	31
<i>Pollachius pollachius</i>	Pollack	1	12
Gadidae (family)	Unidentified cod family	-	4

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 Erriff Estuary an interim draft classification of “High” status, i.e. must prevent deterioration of status by 2015, based on general physico-chemical elements, phytoplankton and macroalgal growths (WRBD 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 Erriff Estuary has been classed as “Moderate” status (EQR=0.475) using the fish classification tool.

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

REFERENCES

Coates, S., Waugh A., Anwar A. & Robson M. (2007) Efficacy of a multi-metric fish index as an analysis tool for the transitional fish component of the Water Framework Directive. *Marine Pollution Bulletin*, **55**, 225-240.

Harrison, T.D. and Whitfield, A.K. (2004) A multi-metric index to assess the environmental condition of estuaries. *Journal of Fish Biology*, **65**, 683-710 (www.blackwell-synergy.com)

WRBD (2008) *Water Matters, Help us Plan*. Draft River Basin Management Plan for the Western River Basin District.

**The Central Fisheries Board
Swords Business Campus,
Swords,
Co. Dublin,
Ireland.**

**Web: www.wfdfish.ie
www.cfb.ie
Email: info@cfb.ie
Tel: +353 1 8842600
Fax: +353 1 8360060**



**The Central and Regional
Fisheries Boards**