

Loch an tSáile



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 Loch an tSáile, as part of the programme of monitoring for the Water Framework Directive (WFD), between the 30th and the 31st of October 2008 by staff from the Central Fisheries Board (CFB) and the Western Regional Fisheries Board (WRFB).

Loch an tSáile is located approximately halfway between Clifden and Galway in County Galway (Fig. 1). The lagoon covers an area of 0.90km² and consists of a series of rock basins which lie to the north of Camus Bay (Fig. 1). The basins are mainly surrounded by steep shore lines that have limited marginal vegetation (Plate 1). The underlying bedrock is composed of a granite layer with the surrounding countryside being composed mainly of blanket bog.

A commercial salmon farm is situated on the east side of the upper lagoon. The lower basins have more of a salt water influence than the upper basin. The name Loch an tSáile translates literally into salt lough. The lagoon receives the waters from the River Screeb (a salmon and sea trout fishery) which drains a series of loughs to the north. The outflow of this lagoon system is located at Screeb Bridge, where it enters Camus Bay (Fig. 1).



Plate 1: Loch an tSáile just upstream of Screeb Bridge

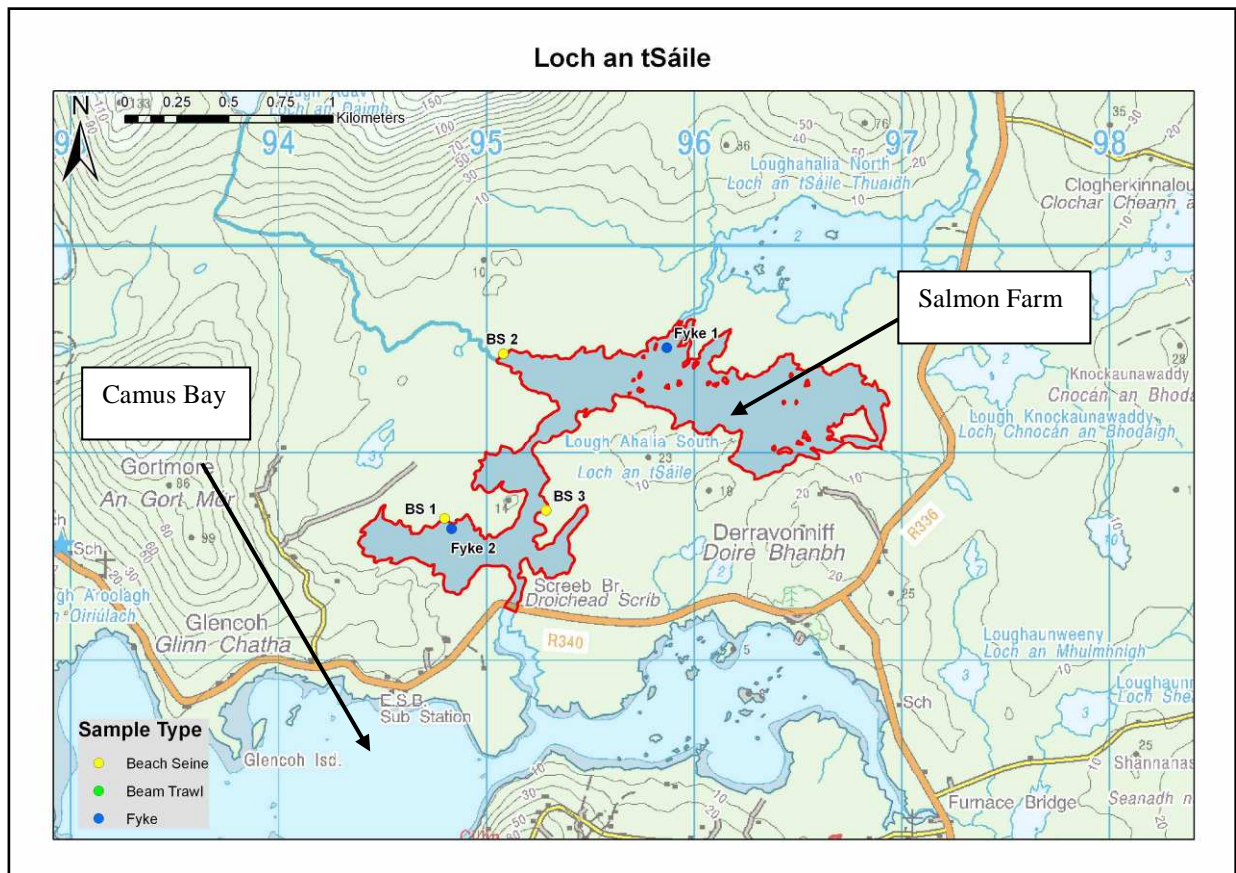


Fig. 1: Location map of Loch an tSáile indicating sampling sites, October 2008

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 Loch an tSáile survey (i.e. beach seines and fyke nets). Beam trawling was not attempted as the loch is not accessible by a boat large enough to tow the trawl. Portable GPS instruments were used to mark the precise location of each sampling site (Fig. 1).

Three 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

Four fish species were captured in the seine nets. The most frequently occurring and abundant species were common goby and three-spined stickleback (Table 1). Three fish species were captured in the fyke nets. The most frequently captured and abundant species was eel which was captured at both sites.

Overall six fish species were captured in the survey. Three-spined stickleback (212) were by far the most numerous fish species. Length frequency analysis of three-spined stickleback indicated two possible age classes (Fig. 2) and many of the fish were large individuals (Plate 2).

Salinity values taken at beach seine sites ranged from 0.15ppt to 0.45ppt indicate the loch is slightly saline.



Plate 2: Three-spined stickleback captured in Loch an tSáile, October 2008

Table 1: List of fish species and abundances of each species by net type in the of Loch an tSáile, October 2008

Scientific name	Common Name	Loch an tSáile	
		Beach seine (3)	Fyke net (2)
<i>Platichthys flesus</i>	Flounder	-	4
<i>Pomatoschistus microps</i>	Common Goby	80	-
<i>Anguilla anguilla</i>	Eel	-	5
<i>Gasterosteus aculeatus</i>	3-Spined Stickleback	211	1
<i>Gobius niger</i>	Black Goby	2	-
<i>Syngnathus typhle</i>	Deep-Snouted Pipefish	1	-

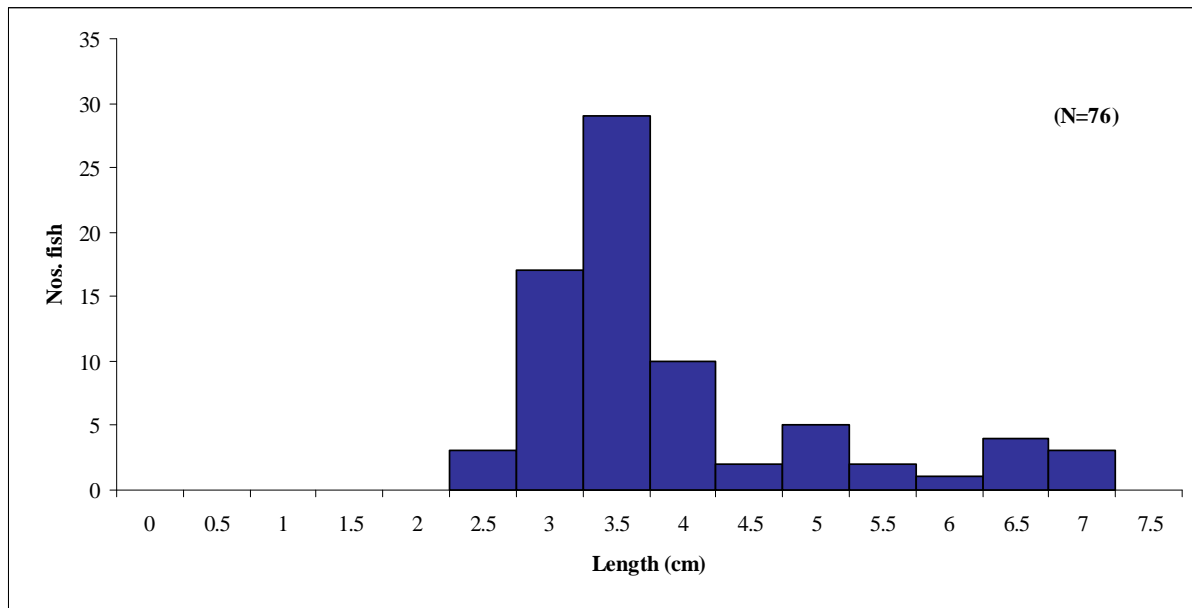


Fig. 2: Length frequency distribution of three-spined stickleback in Loch an tSáile, October 2008

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 Loch an tSáile an interim draft classification of “High” status, i.e. must prevent deterioration, 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). Loch an tSáile has been assigned a draft classification of “Poor” (EQR=0.375) using the fish classification tool. However, the fish tool for lagoons will be reviewed and revised over the next few months after more data is collected.

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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