Chapter 1
How to Estimate the Reproductive Success of European Silver Eels

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1.1 Introduction

Over the past 25 years populations of the European eel have been declining to such a degree that major concerns have been raised for their long-term well being. Adult stocks started to dwindle in the 1940s in major areas of the continent, while recruitment (glass eel arrivals) has collapsed since the early 1980s. Fishing yield has gradually declined by 75% and the abundance of glass eels (young eel migrating from the ocean) is now below 5% of the historical level. The stock is considered outside safe biological limits, and immediate protection measures have been recommended. There is no sign of recovery and the phenomenon seems to occur over the natural range of the European eel (*Anguilla anguilla*). A parallel development is observed in the closely related American eel (*A. rostrata)* (Castonguay et al. 1994). EIFAC and related scientific work groups (Stone 2003) started a campaign to alert politicians, pointing to the rather serious collapse of the European and other eel populations. Also the EU-commission showed its concern by the fisheries policy publication of October 2003. Recently the EU has decided that all countries have to reduce the fishing pressure and to take protective measures such as allowing a 40% escapement of silver eels. Since 2007 the European eel is protected under CITES Appendix II (Annex B of Reg. (EC) 338/97). In addition the European Commission agreed in 2007 on measures for the recovery of the stock of European Eel (COM (2005) 472). Discussions have been going on for many years trying to pinpoint the

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