Chapter 19
Reproduction Capacity of European Eels

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19.1 Introduction

Silver eels, which represent the last known stage in eels under natural conditions, are still sexually immature. Their gonad development is heavily depressed, which is likely related to the very long distance they have to swim before reaching the spawning site, which is about 6,000-km from the European west coast. So, the capacity of silver eels to cope with the many different environments during their journey, the capacity to perform extremely long swimming activity and ultimately to find the spawning site and to reproduce, all these factors should be taken together in order to determine the individual's reproduction capacity.

Ecological studies on eel stock survey and management used to focus on the size of the eel population in various hydrosystems. However, not only numbers but also physiological qualities of silver eels are required to predict their potential contribution to stock renewal. Furthermore, quality assessment of wild silver eels is also a prerequisite for future success of ongoing research on European eel artificial reproduction. In the forgoing chapters we have discussed most recent information relating to the individual quality of European silver eels, which in this last chapter is used to develop a semi quantitative indicator for the reproduction capacity of the European silver eel.

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