

# Chapter 2

## Seasonal Evolution and Individual Differences in Silvering Eels from Different Locations

Caroline M.F. Durif, Vincent van Ginneken, Sylvie Dufour,  
Tamás Müller, and Pierre Elie

### 2.1 Introduction

Silvering is a requirement for downstream migration and reproduction. It marks the end of the growth phase and the onset of sexual maturation. This true metamorphosis involves a number of different physiological functions (osmoregulatory, reproductive), which prepare the eel for the long return trip to the Sargasso Sea. Unlike smoltification in salmonids, silvering of eels is largely unpredictable. It occurs at various ages (females: 4–20 years; males 2–15 years) and sizes (body length of females: 50–100 cm; males: 35–46 cm) (Tesch 2003). It is most common when studying eels, to separate individuals into two groups, yellow (resident) and silver (presumably migrant), and to compare the physiological profiles between the two. Basic knowledge was obtained in this way and we will first review what is known about these two stages.

Because of the difficulty of getting individuals while they are in the process of metamorphosing, little is known about the dynamics of the silvering process. Here we present new information on the triggers, duration and succession of events up to

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C.M.F. Durif

Center for Ecological and Evolutionary Synthesis, University of Oslo, P.O. Box 1066, Blindern, 0316 Oslo/Institute of Marine Research, 5392 Storebø, Norway

V. van Ginneken

Integrative Zoology, Institute Biology Leiden (IBL), Van der Klaauw Laboratorium, P.O. Box 9516, 2300 RA Leiden, The Netherlands

S. Dufour

USM 401, UMR 7178 CNRS “Biology of Marine Organisms and Ecosystems”, Museum National d’Histoire naturelle, 7 rue Cuvier, 75231 Paris Cedex 05, France

T. Müller

Szent István University, Faculty of Agricultural and Environmental Sciences. Gödöllo, Péter K. u. 1., H-2103 Gödöllo/Pannon University Georgikon Faculty of Agriculture, Deák F. u. 16, H-8360 Keszthely, Hungary

C.M.F. Durif and P. Elie

Cemagref Agricultural and Environmental Engineering Research Center Research Unit “Estuarine Ecosystems and Migratory Amphihaline Fish Species” 50 avenue de Verdun Gazinet 33612 Cestas, France