

# Migration patterns of various fish species in the Rhine delta based on telemetric studies

Abraham bij de Vaate<sup>1</sup>, Koos Fockens<sup>2</sup>, André Breukelaar<sup>3</sup>, Erwin Winter<sup>4</sup> and Maarten Bruijs<sup>5</sup>

<sup>1</sup> Waterfauna Hydrobiologisch Adviesbureau, Oostrandpark 30, NL-8212 AP Lelystad, The Netherlands

<sup>2</sup> Nedap, P.O. Box 6, NL-7140 AA Groenlo, The Netherlands

<sup>3</sup> RWS-RIZA, P.O. Box 17, NL-8200 AA Lelystad, The Netherlands

<sup>4</sup> RIVO, P.O. Box 68, NL-1970 AB IJmuiden, The Netherlands

<sup>5</sup> KEMA, P.O. Box 9035, NL-6800 ET Arnhem, The Netherlands

## Abstract

Fish migration patterns in the Rhine delta, a relatively large area and important for navigation, has been studied for several species like Atlantic salmon (*Salmo salar*), sea trout (*Salmo trutta*), ide (*Leuciscus idus*), barbel (*Barbus barbus*) and eel (*Anguilla anguilla*). The Nedap Trail System<sup>®</sup> was used in all studies. This telemetry system was specially developed for the study of long distance fish migration in water bodies with relatively high conductivity and intensive shipping, using fixed detection stations on the banks to detect passage of the tagged fish. Results of the studies, obtained in the period 1996-2004, are summarized and discussed.