

## RECENT STUDIES ON GENOTOXICITY IN THE NORTH SEA (II) - DNA DAMAGE IN ADULTS AND EMBRYOS OF DAB (*Limanda limanda*)

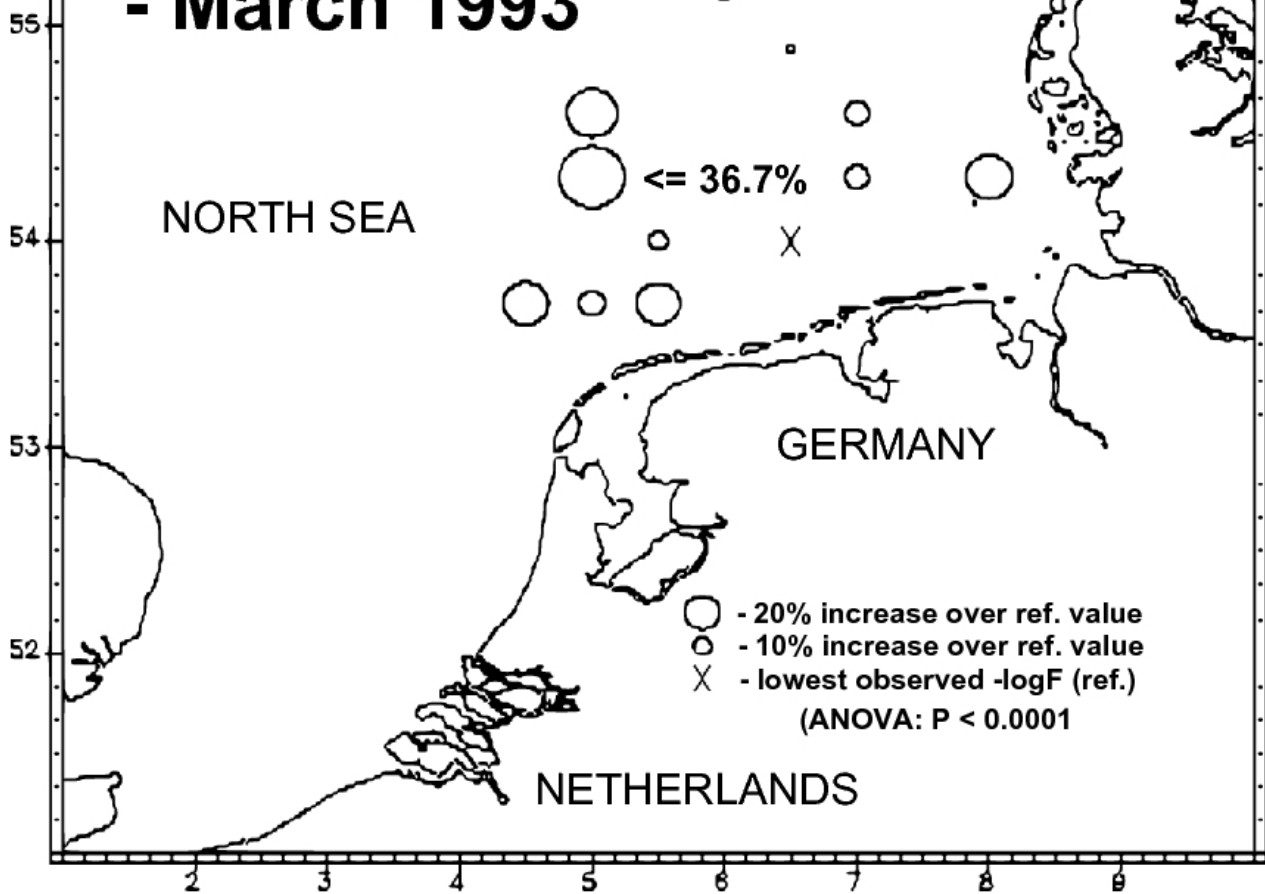
A. Herbert<sup>1\*</sup>, D. Warnecke<sup>1</sup>, V. Dethlefsen<sup>2</sup>, P.-D. Hansen<sup>1</sup>

<sup>1</sup>Berlin University of Technology, Institute for Ecology, Dept. of Aquatic Ecotoxicology, Keplerstrasse 4-6, D-10589 Berlin, FED. REP. of GERMANY; and <sup>2</sup>Bundesforschungsanstalt für Fischerei, Institut für Fischereiökologie, Aussenstelle Cuxhaven, Deichstraße 11, D-27472 Cuxhaven, FED. REP. of GERMANY

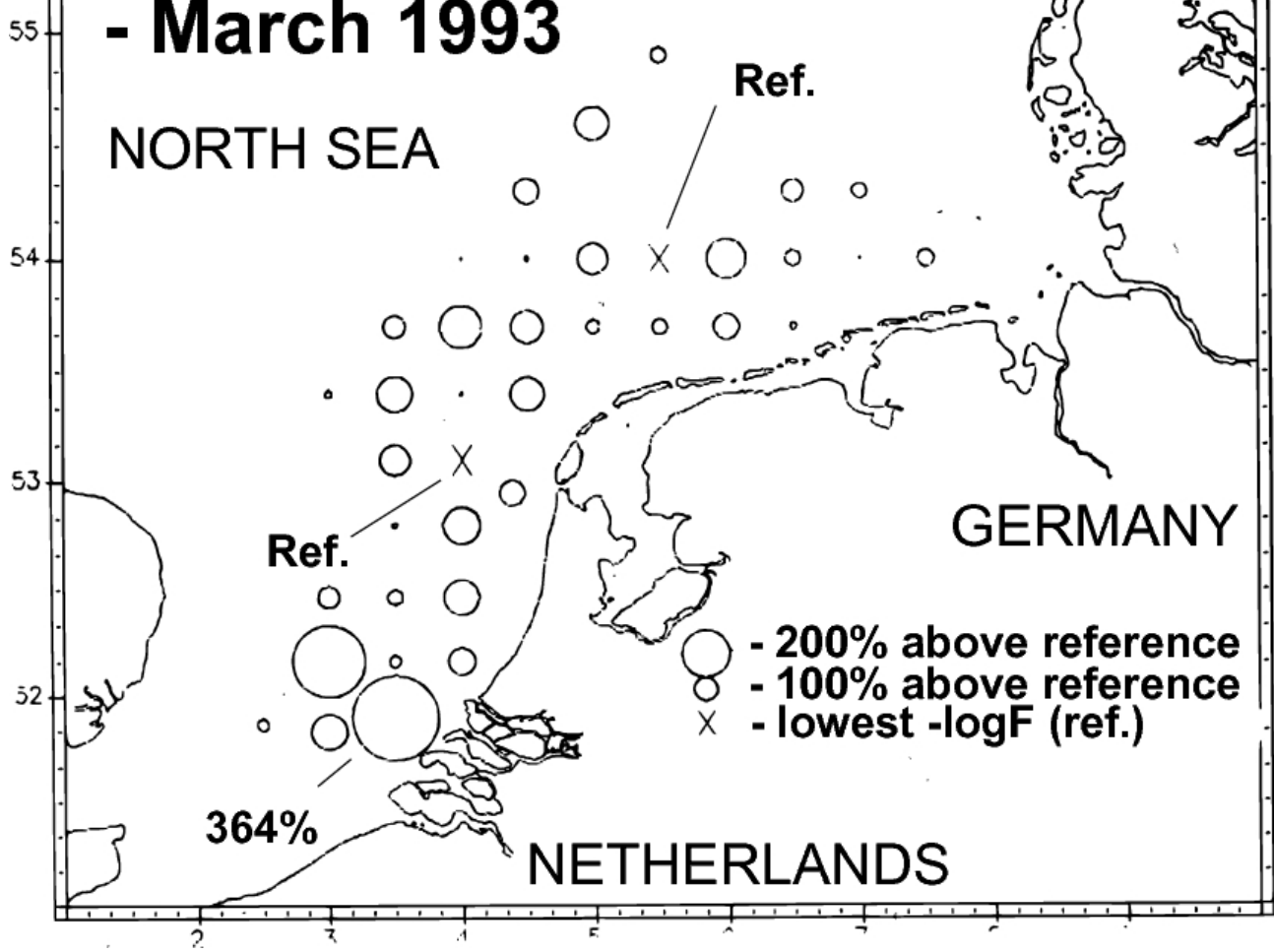
During a sea cruise in March 1993 adult fish (*Limanda limanda*) were caught from 12 different locations of the North Sea and embryos of the same species from 38 locations. DNA damage (fragmentation) was determined by alkaline DNA unwinding of liver samples from adult fish and total homogenates from pooled embryos. Both, samples from adult fish and fish embryos, showed a distinct spatial pattern in terms of DNA fragmentation with peak values significantly increased over others. Highest values in adult fish were found at the former German waste incineration site. Highest values in fish embryos were found at the mouth of the river Rhine, where, however, data from adult fish for comparative purposes are not available. The maximum number average of DNA lesions per DNA unwinding unit in liver from adult fish was 0.37, whereas the values for embryos exceeded 0.5 in 29 from 38 locations with a maximum of 3.6. Results indicate a high sensitivity of early developmental stages towards genotoxic impact. Possible interference with recruitment need further investigation and discussion.

(For figures, please scroll through following pages!)

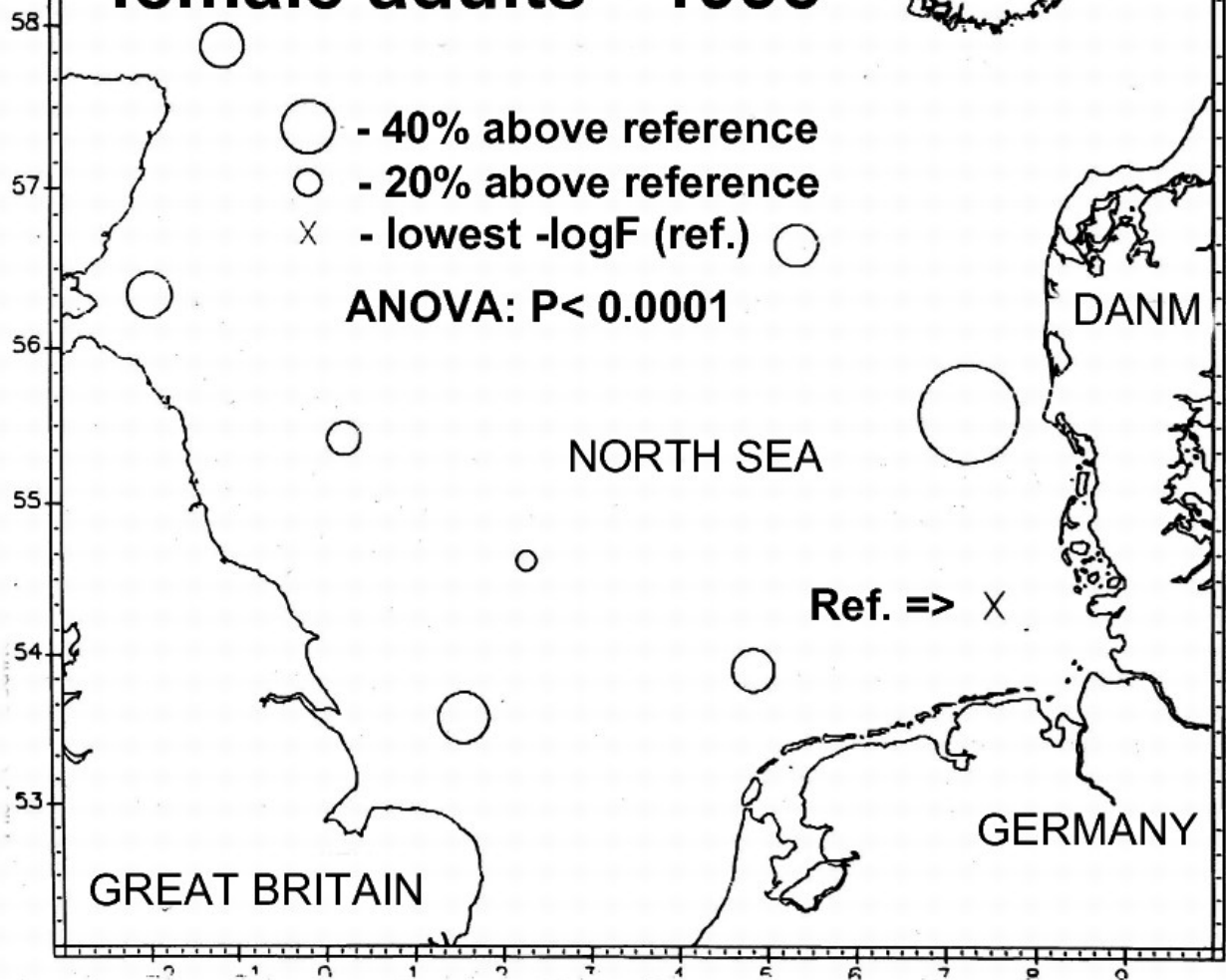
# DNA Damage in Adult *Limanda limanda* - March 1993



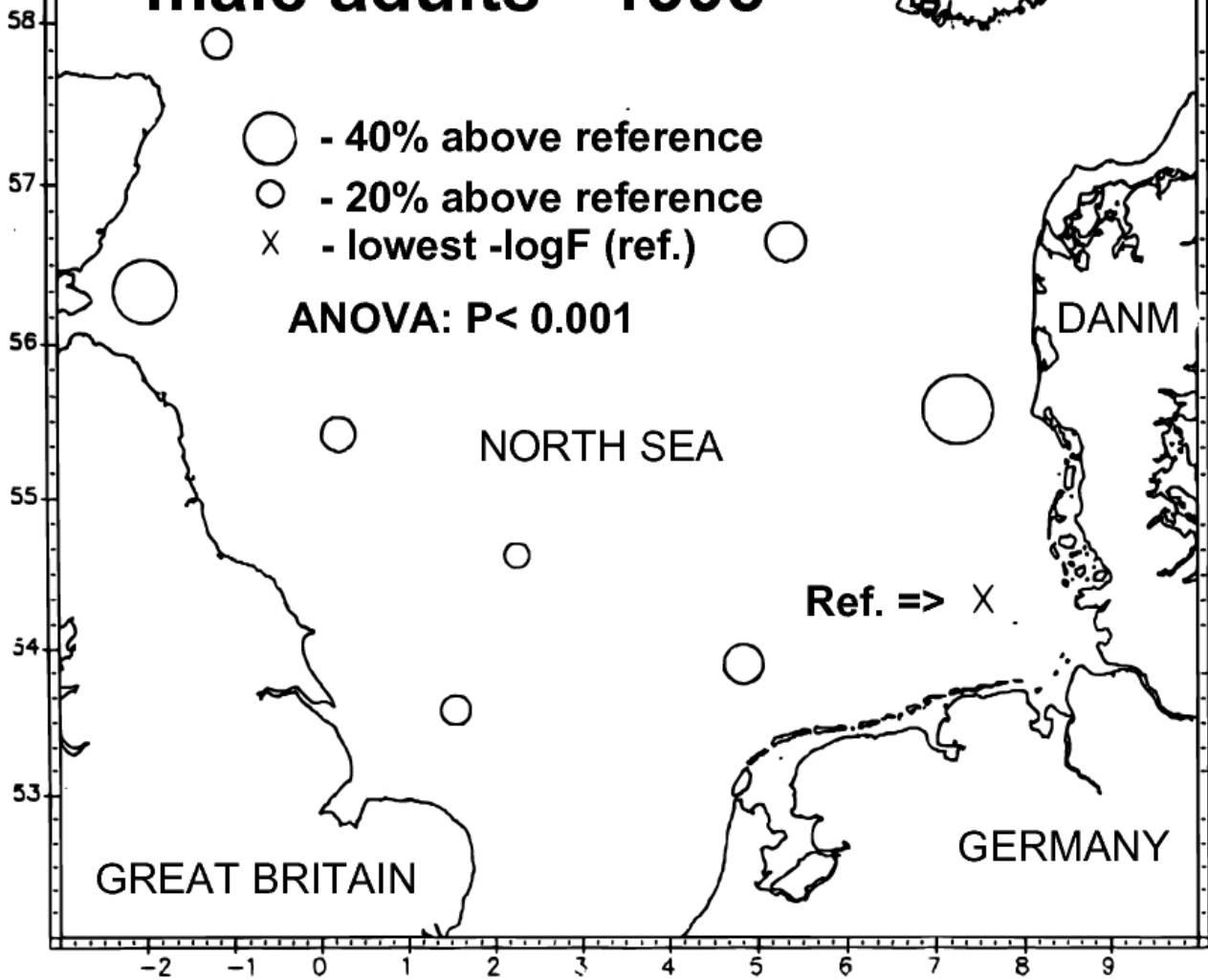
# DNA Damage in Embryonic *Limanda limanda* - March 1993



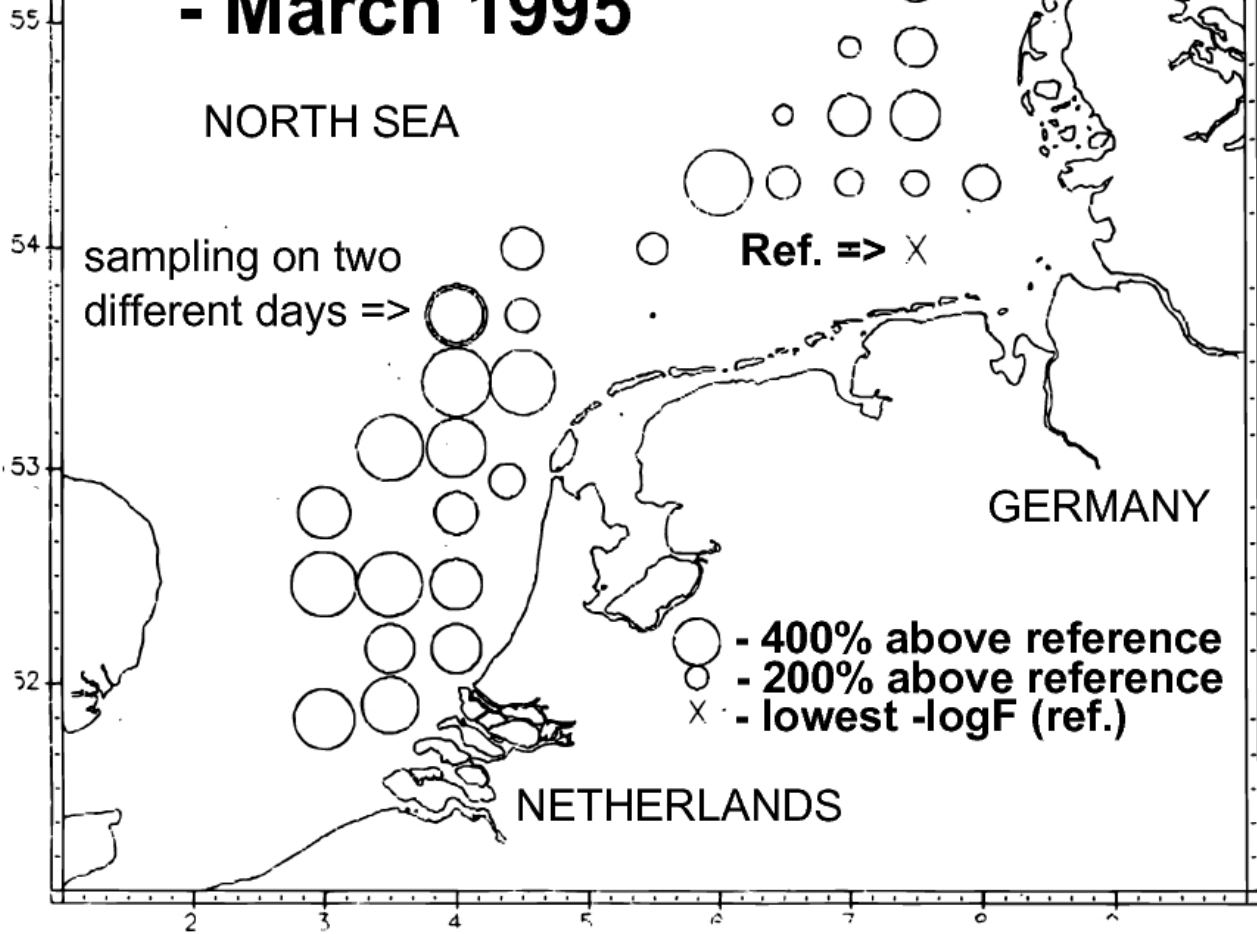
# *Limanda limanda* female adults - 1995



# *Limanda limanda* male adults - 1995



# *Limanda limanda* Embryo Stages I - II - March 1995



# *Limanda limanda* Embryo Stages III - IV - February 1996

