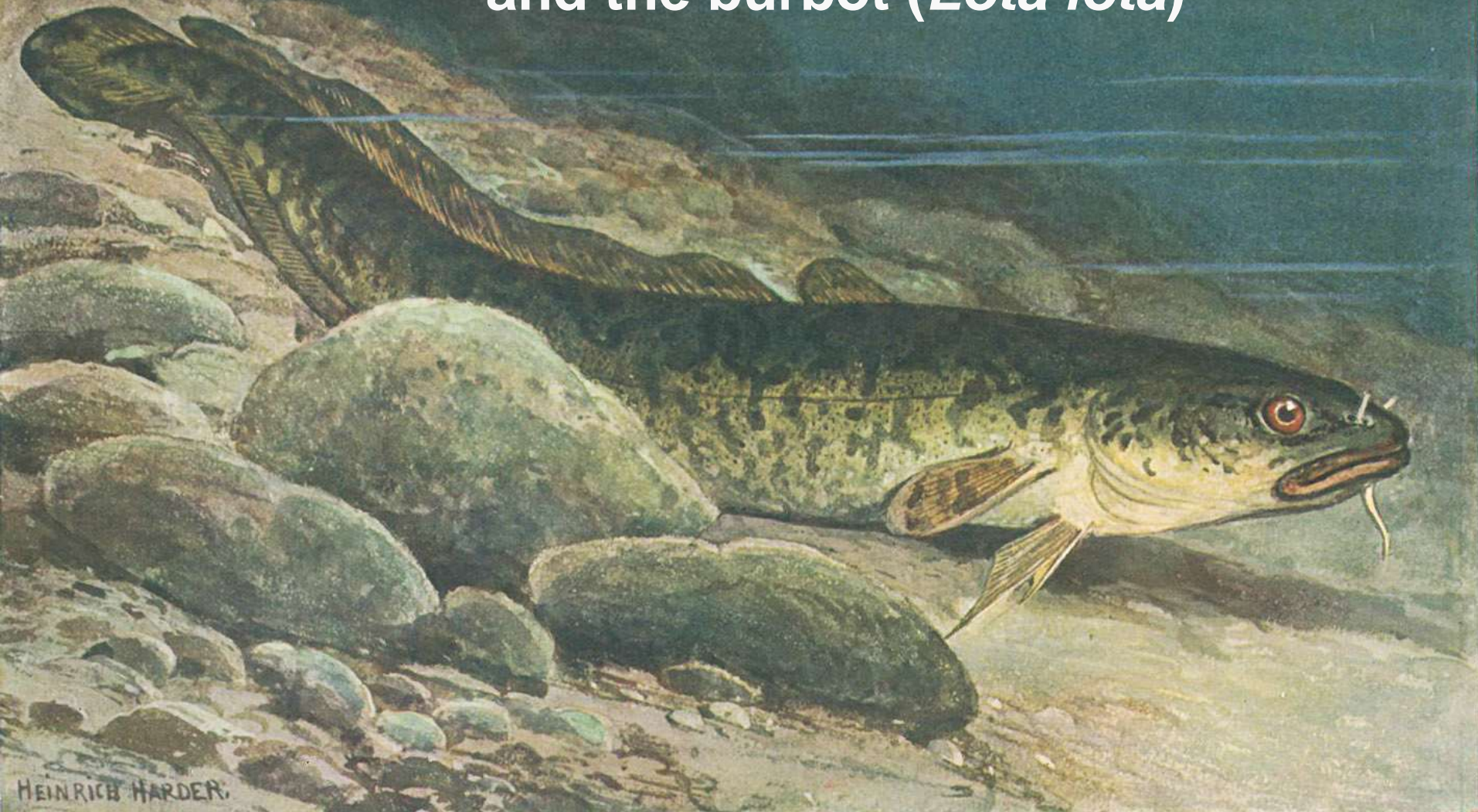


Restoration of the Lippe floodplain and the burbot (*Lota lota*)

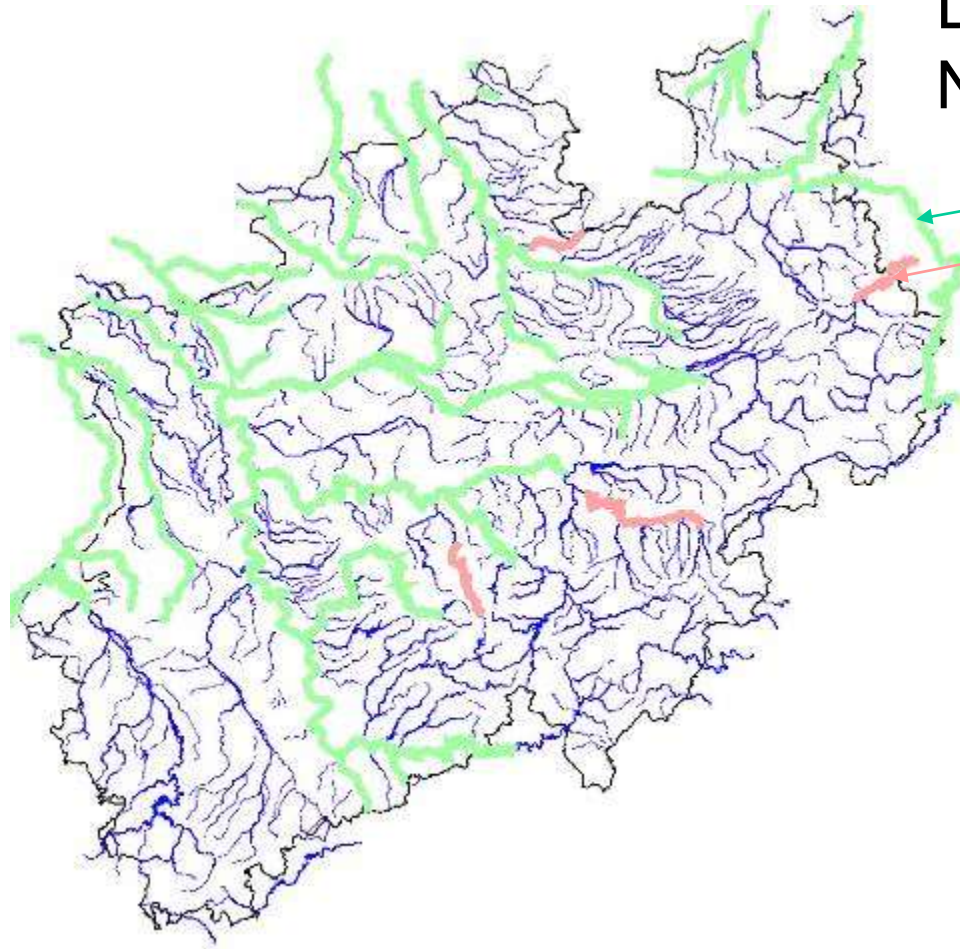


Margret Bunzel-Drücke,
Matthias Scharf & Olaf Zimball



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Umweltschutz im Kreis Soest e.V.
Bad Sassendorf-Lohne

Distribution of the burbot in NRW in the 19. century



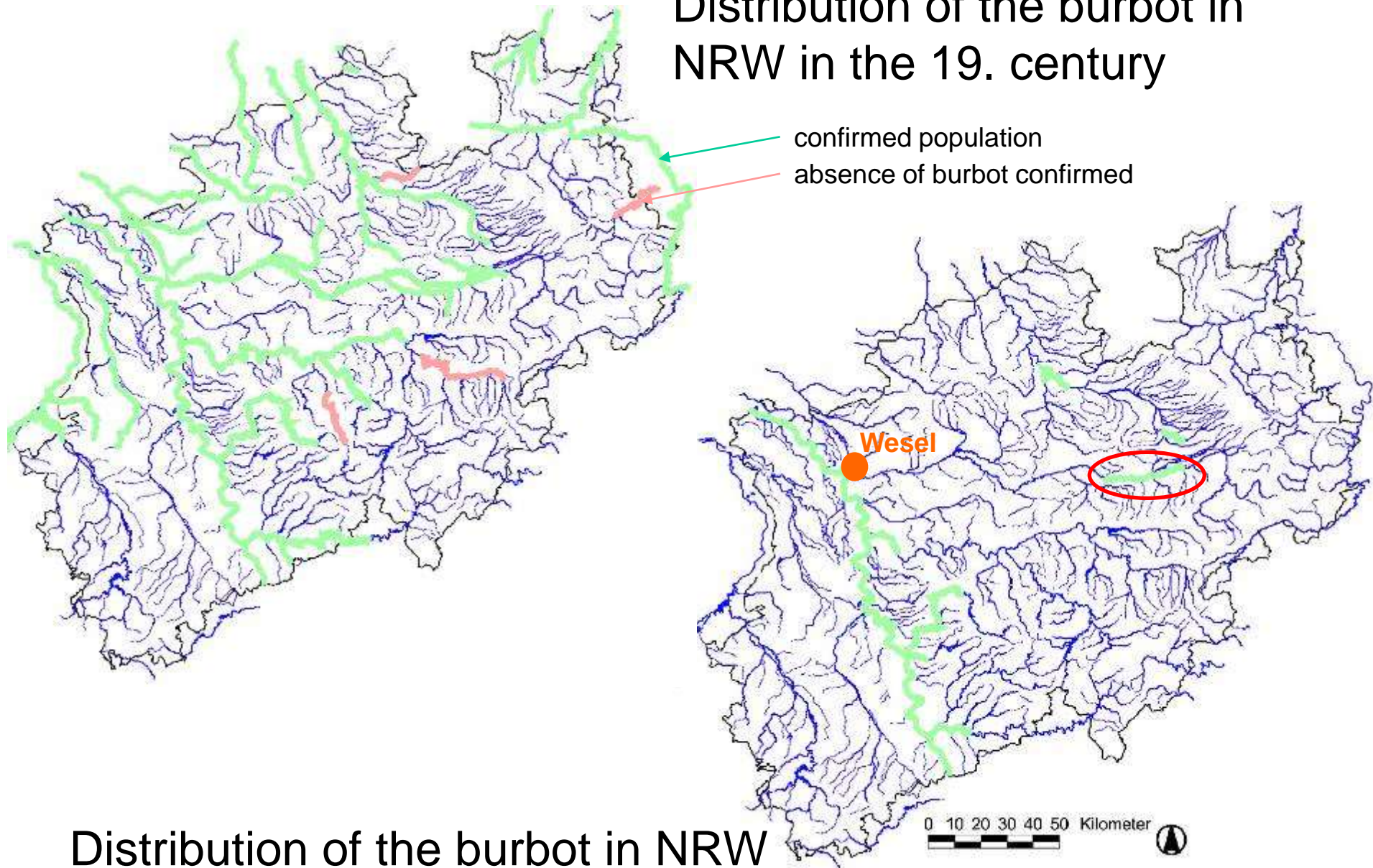
confirmed population

absence of burbot confirmed

0 10 20 30 40 50 Kilometer



Distribution of the burbot in NRW in the 19. century



Distribution of the burbot in NRW
in 2000 (stocking excluded)

Regulated river:

**stone riprap often used
by adult burbot**



Characteristics of spawning grounds

- cold (1 - 4 °C)
- shallow
- rich in oxygen
- gentle current at best
- low predation pressure



Lippe burbot spawn in small tributaries reaching the floodplain.

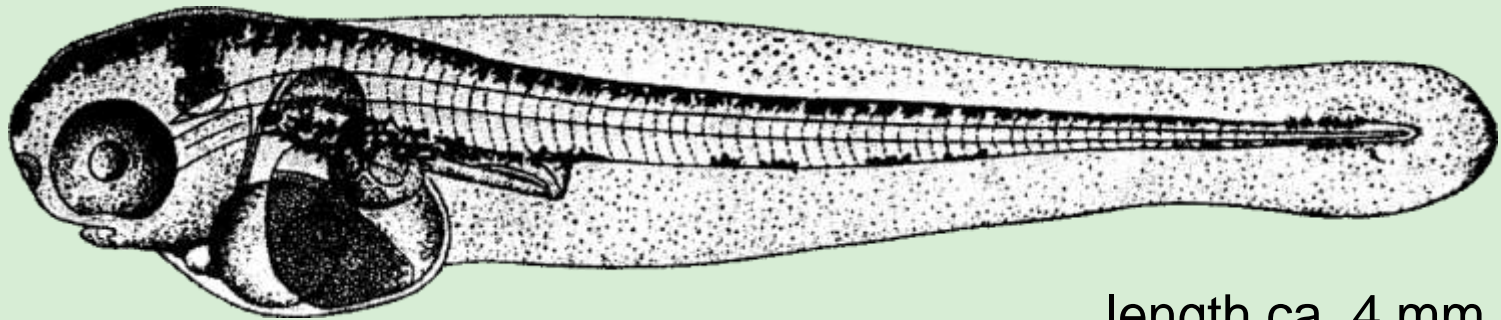
Burbot eggs

diameter ca. 1 mm



Characteristics of burbot larval habitats

- no (strong) current
- shallow areas
- rich in zooplankton
- low predation pressure and not much competition



length ca. 4 mm

Where are such habitats in spring?

Müller (1960): Biologie der Quappe zwischen Elbe und Oder (Zeitschrift für Fischerei 9 N.F.)

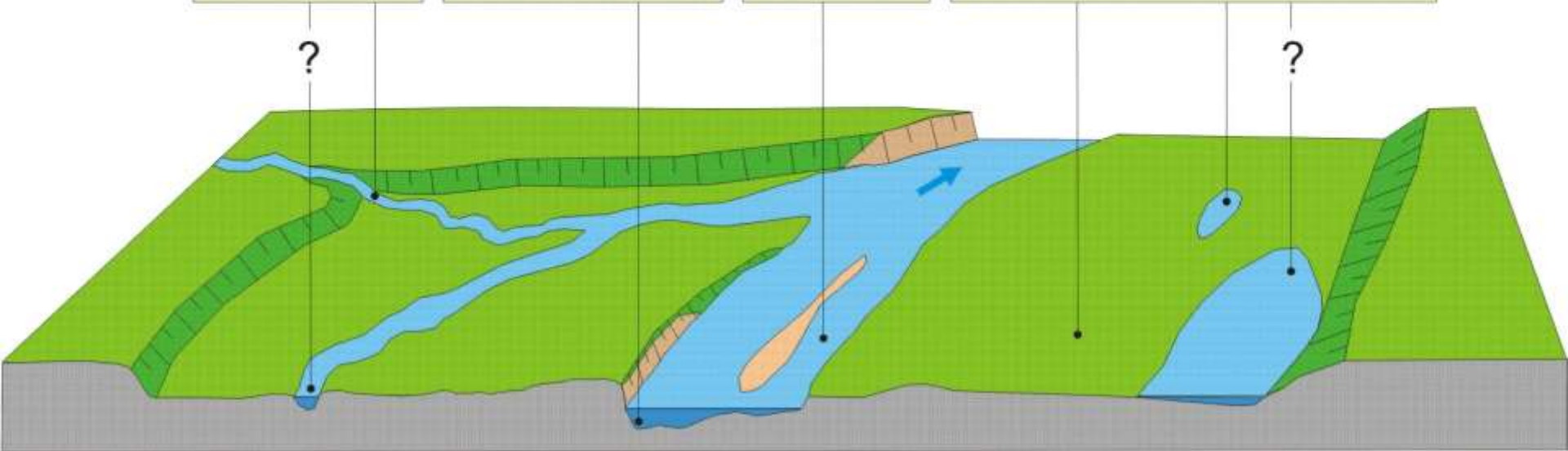
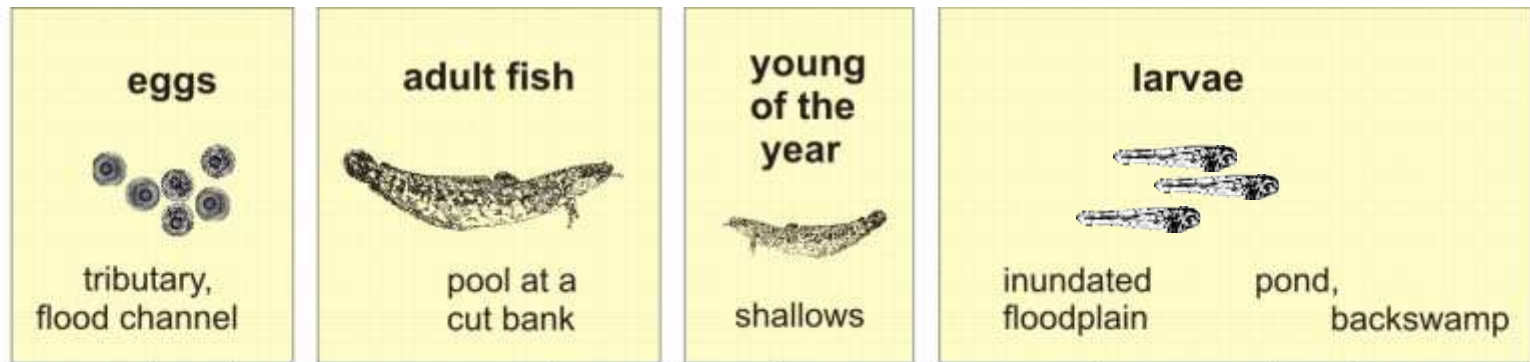
Foto: Spree on 06.04.1954



Inundated floodplain



Burbot habitats in the Lippe floodplain: near natural conditions



Shortened river course

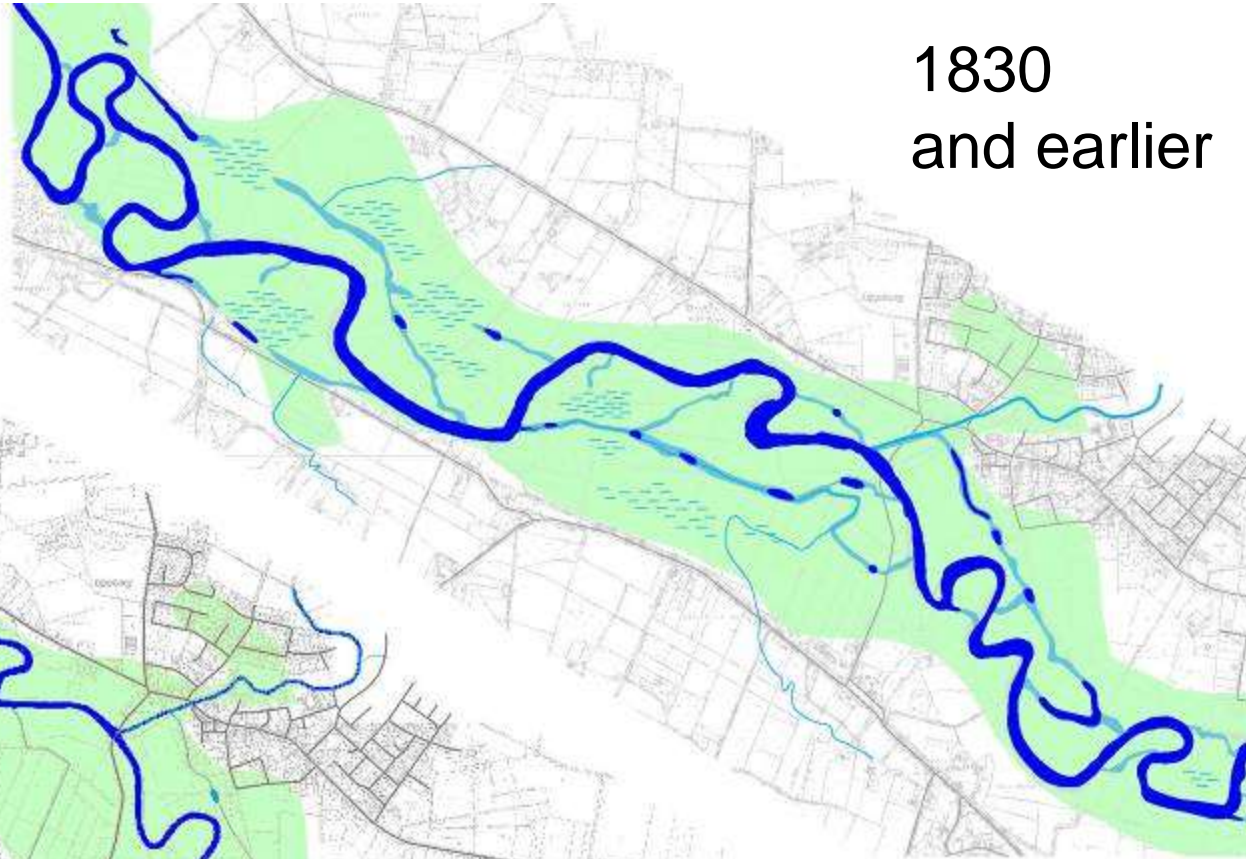


incision (down-cutting) of the stream channel

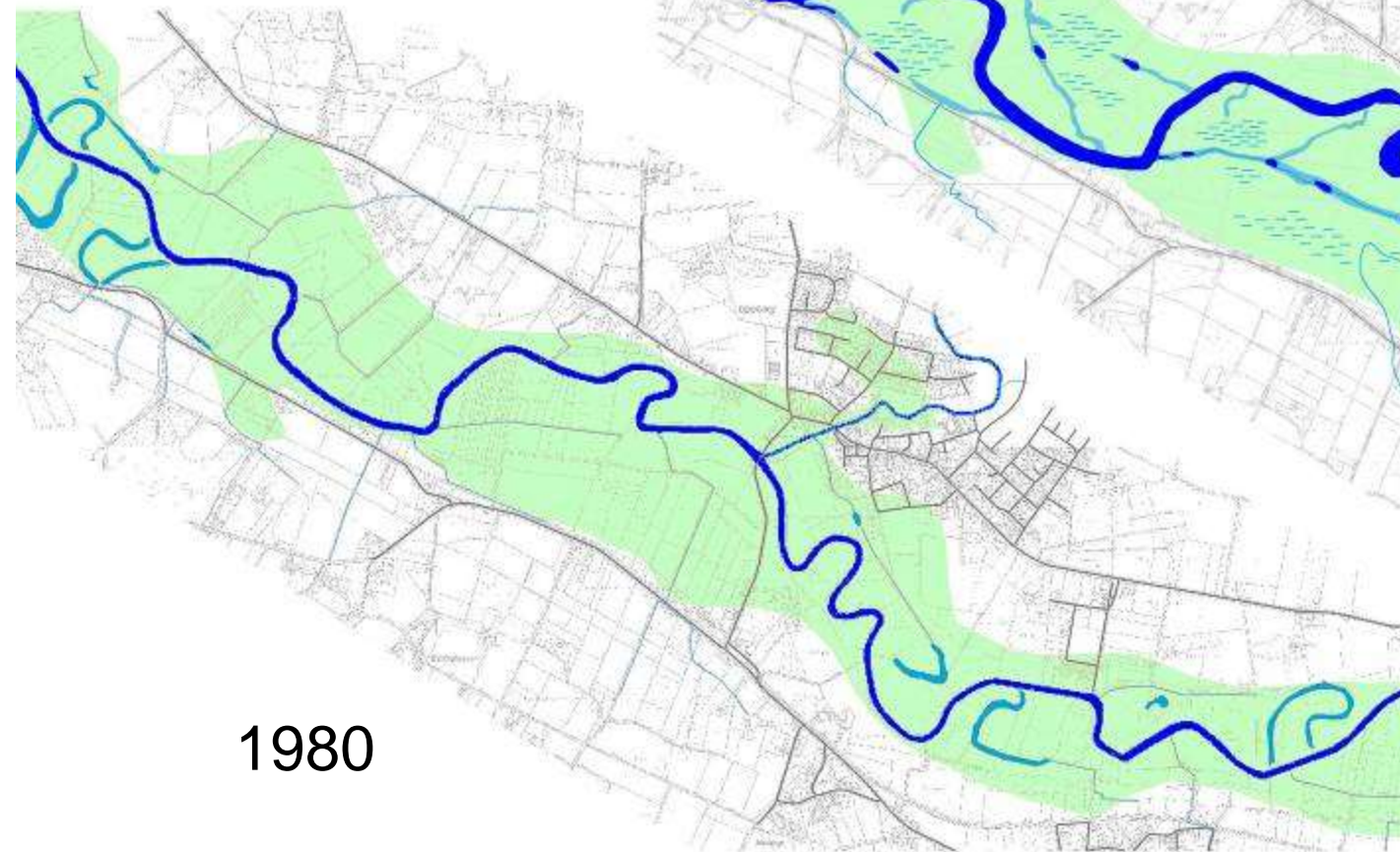


Lippe floodplain: loss of flood channels

1830
and earlier



1980





Floodplain still flooded sometimes ...

... but ...
summer
embankments
separate river
from floodplain.



Restoration of the Lippe floodplain: project partners



The State of North-Rhine/Westphalia



Lippeverband



The City of Hamm LIFE projects



The District of Soest



Nordrhein-Westfalen-Stiftung
Naturschutz, Heimat- und Kulturpflege



Arbeitsgemeinschaft Biologischer
Umweltschutz im Kreis Soest e.V.





**Restoration measures:
river bed is widened
and raised up**



Before ...



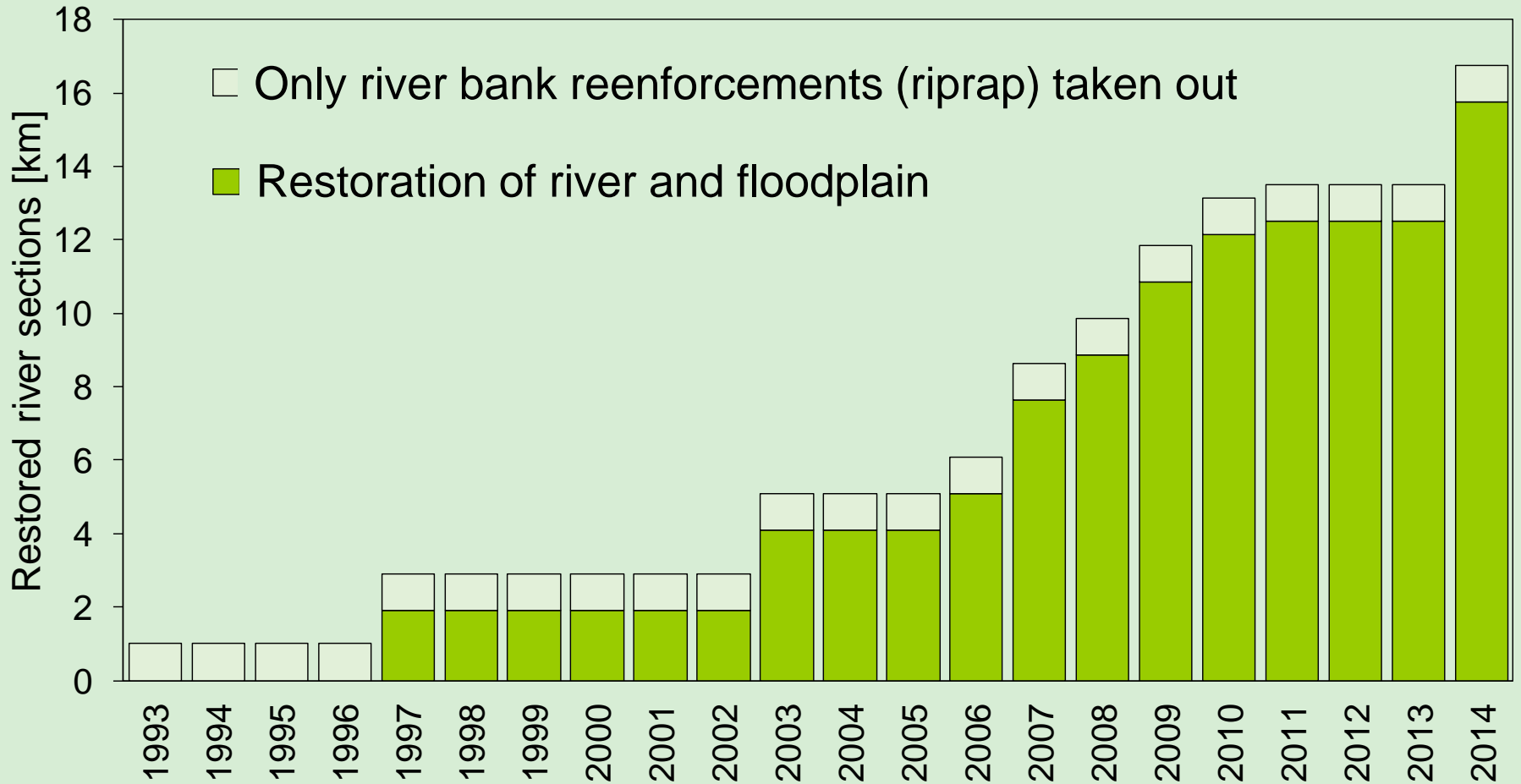
**... and after
the restoration.**



- river bed widened, lengthened and raised up
- in the floodplain lakes and flood channels restored



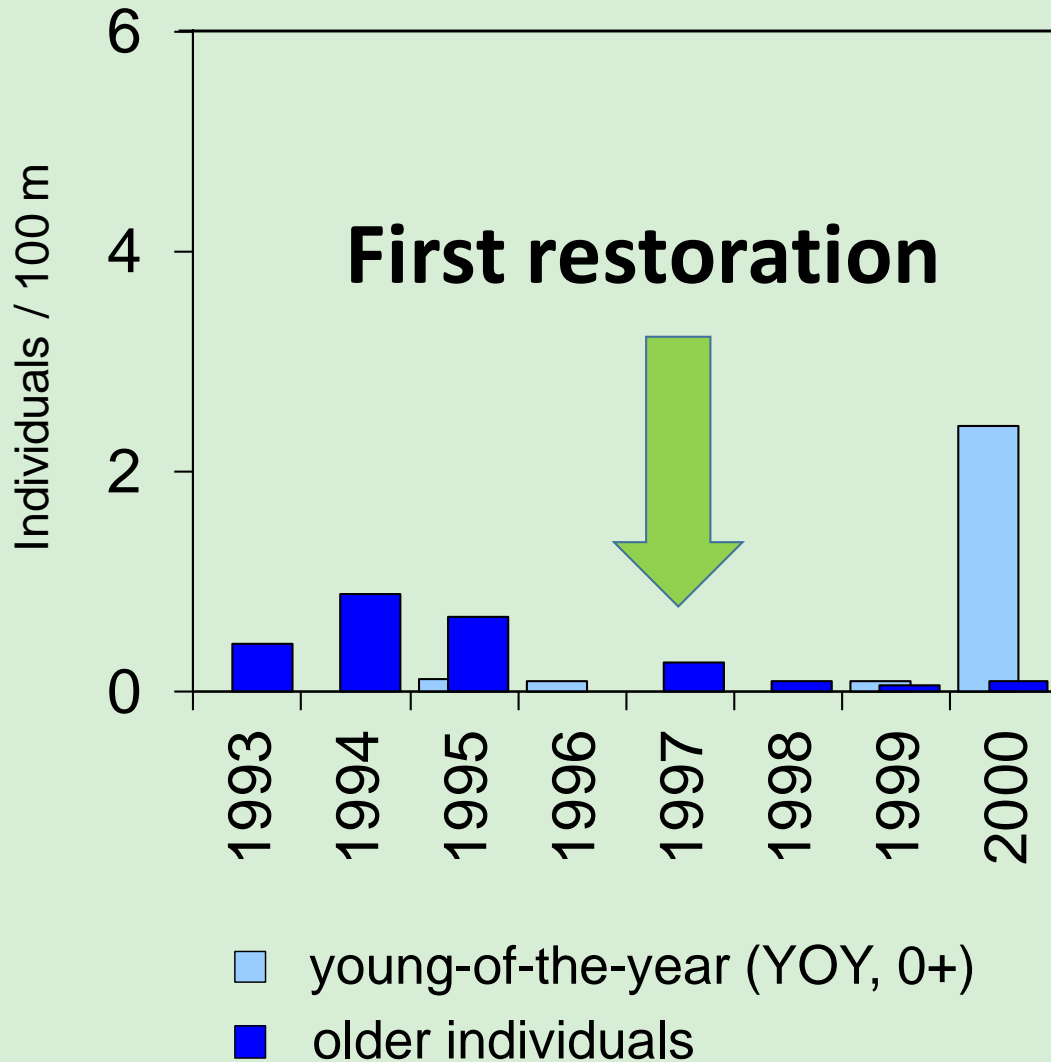
Extent of Lippe restoration measures

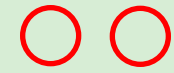
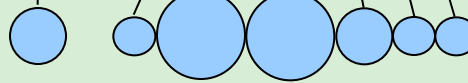
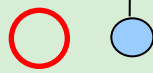


**Study method:
standardized electrofishing**



Reaction of the Lippe burbot population





5 km



Number of young-of-the-year burbot 2000



restored floodplain



no record



1 – 5 individuals



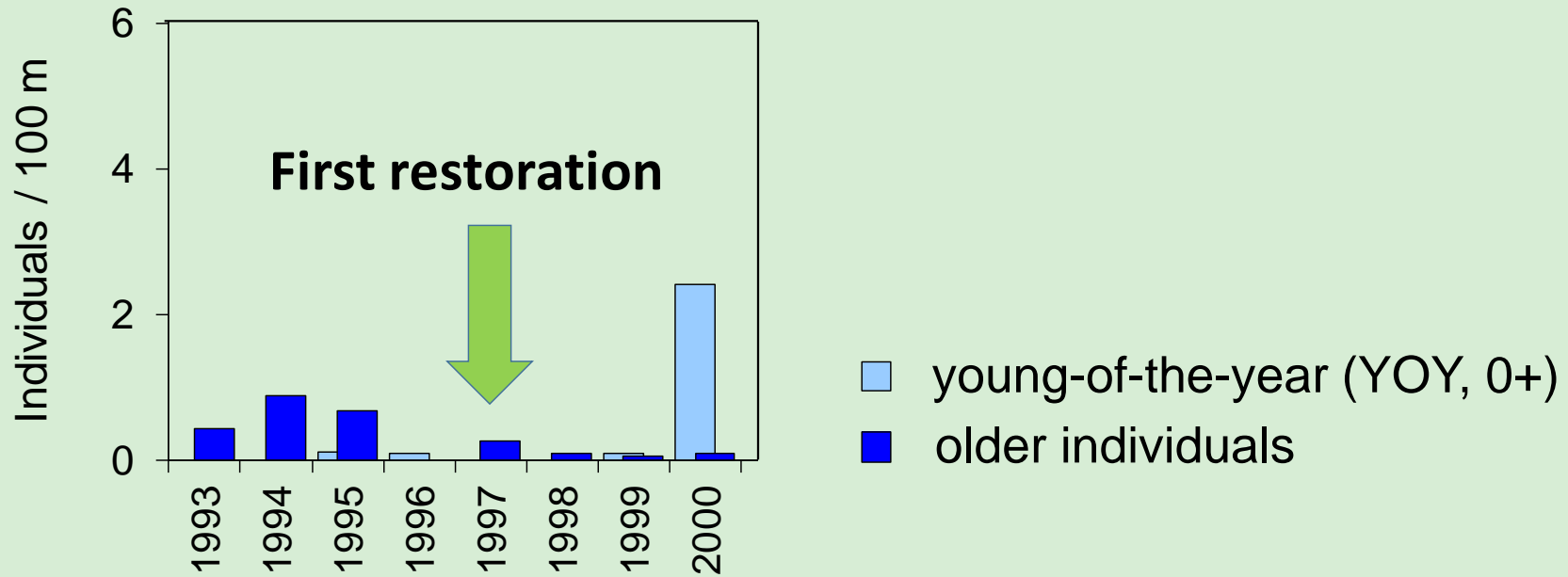
6 – 10 individuals



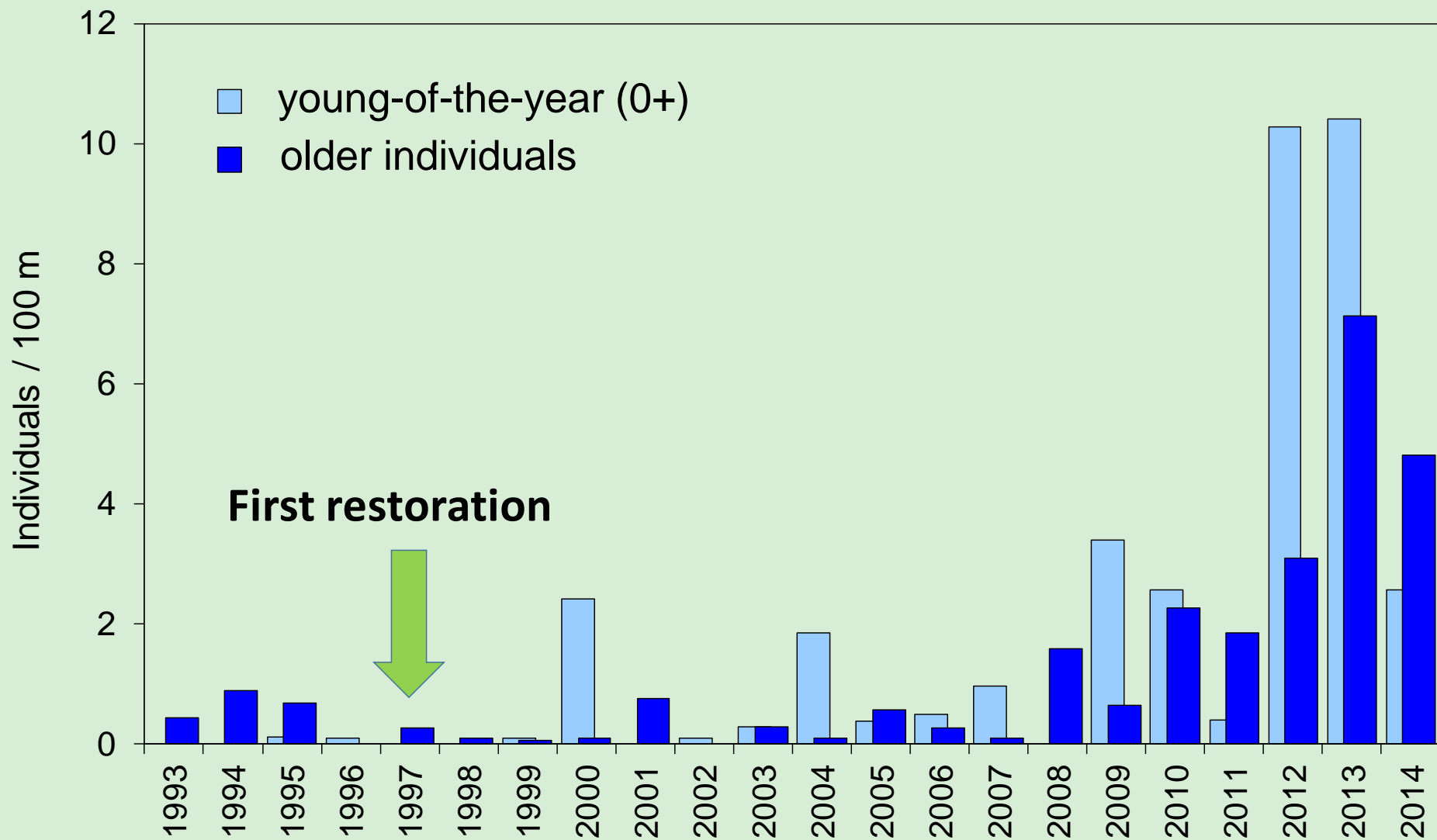
11 – 50 individuals

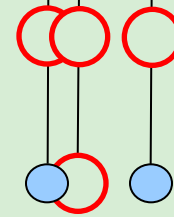
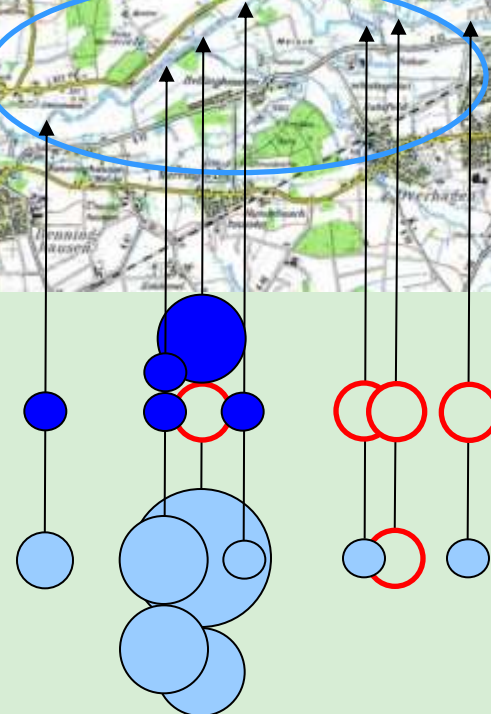
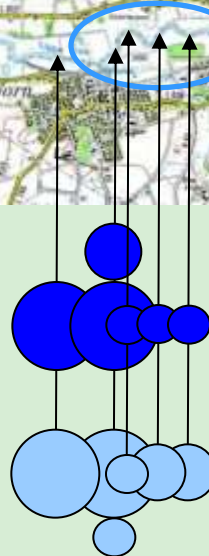
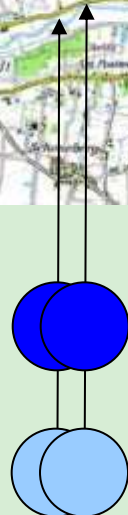
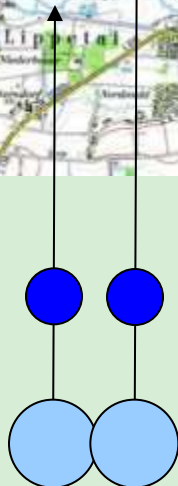
Restoration of the Lippe floodplain and the burbot

Reaction of the Lippe burbot population



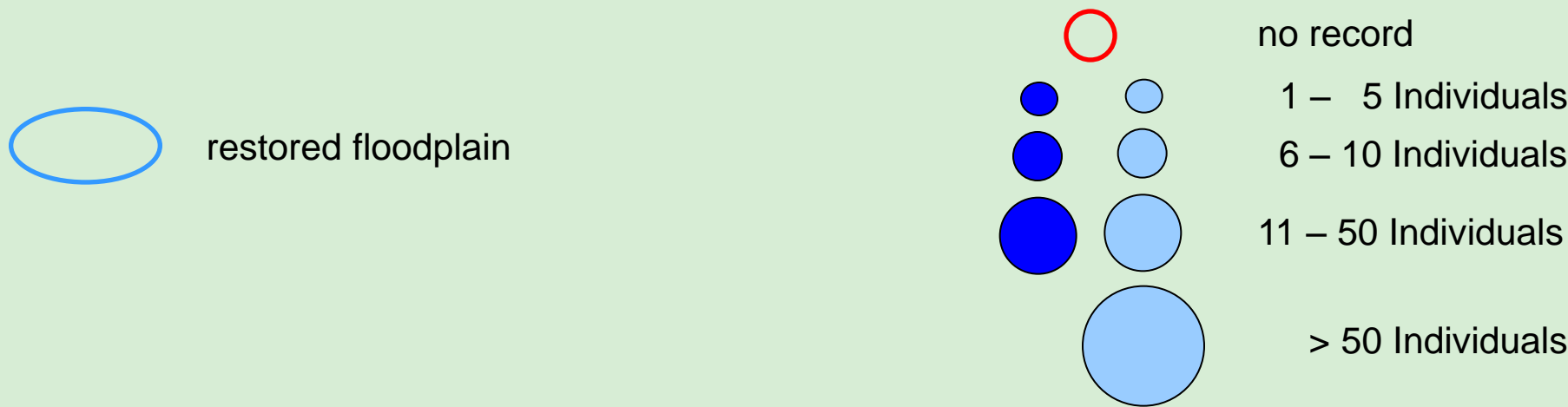
Reaction of the Lippe burbot population





5 km

Numbers of adult and 0+ burbot 2013







Thank you for your attention!

