

The Lippenbroek, a flood control area with controlled reduced tide along the Zeeschelde estuary, as habitat for juvenile fish



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inbo



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Study area

A former polder (10 ha) in the freshwater zone of the Zeeschelde estuary

Functioning since March 2006

Sluices control the water regime as in a natural freshwater mudflat and tidal marsh

Reed, willow, wetland plants are present

Creeks, mudflats and marshes are formed

Study area: three habitats



Fishing methods



Reservoir at sluices: paired fyke nets

Fishing methods



Creek: winged fyke

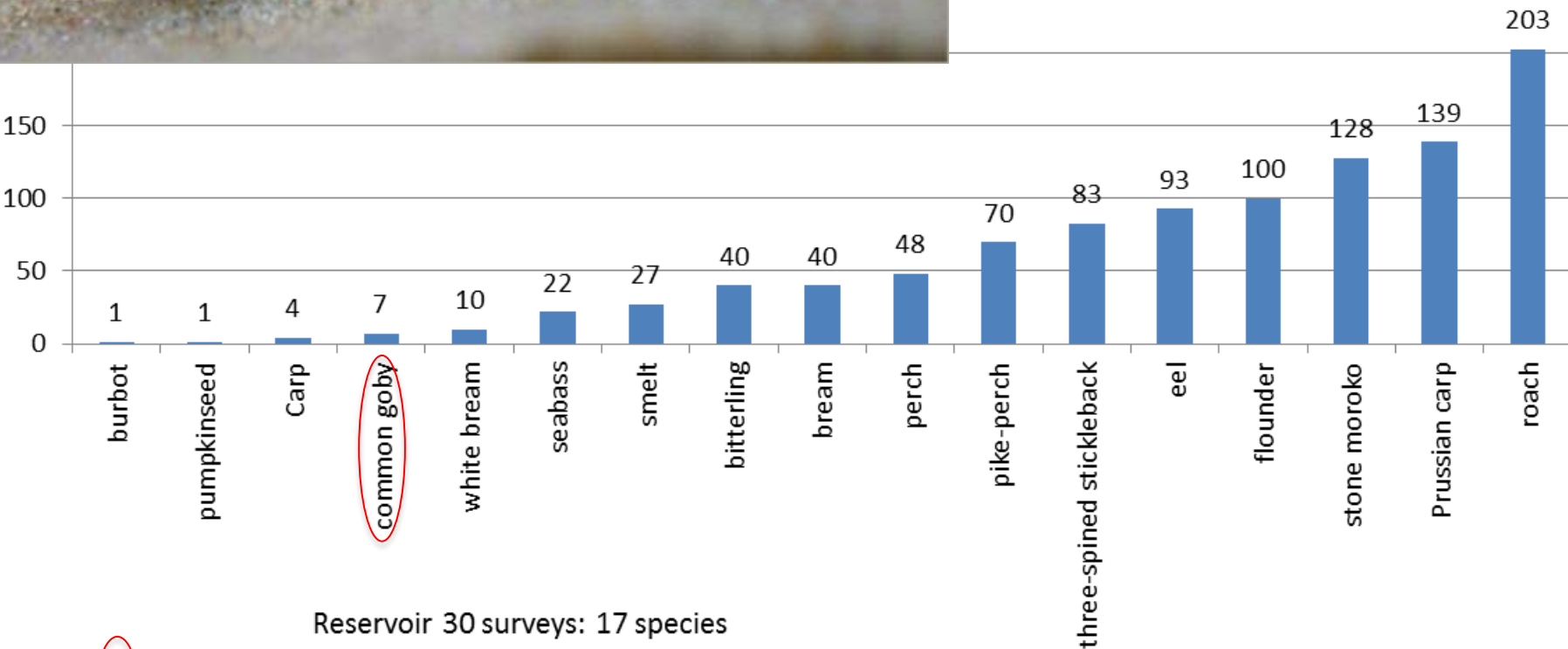
Fishing methods



Permanent pool: electric fishing



fyke nets

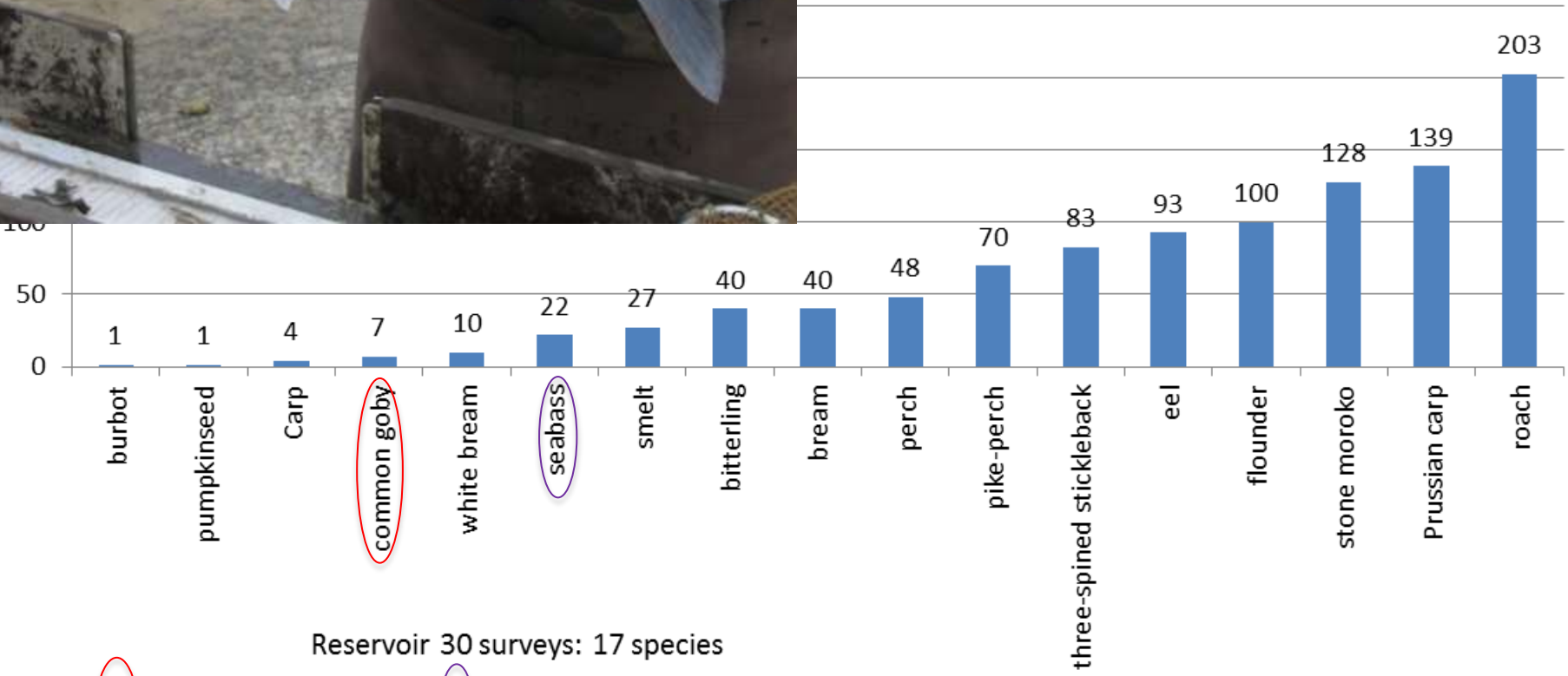


Reservoir 30 surveys: 17 species

estuarine sp.

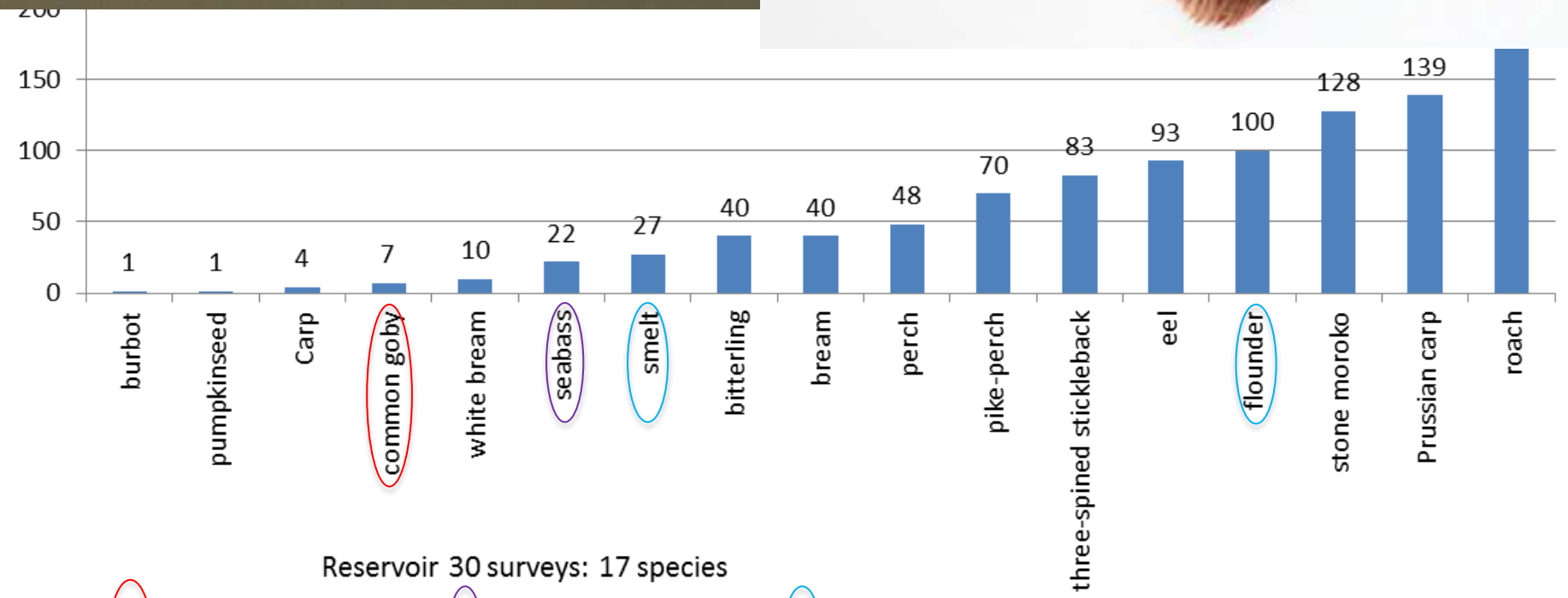


red fyke nets



Reservoir 30 surveys: 17 species

 estuarine sp.
 marine sp.



Reservoir 30 surveys: 17 species



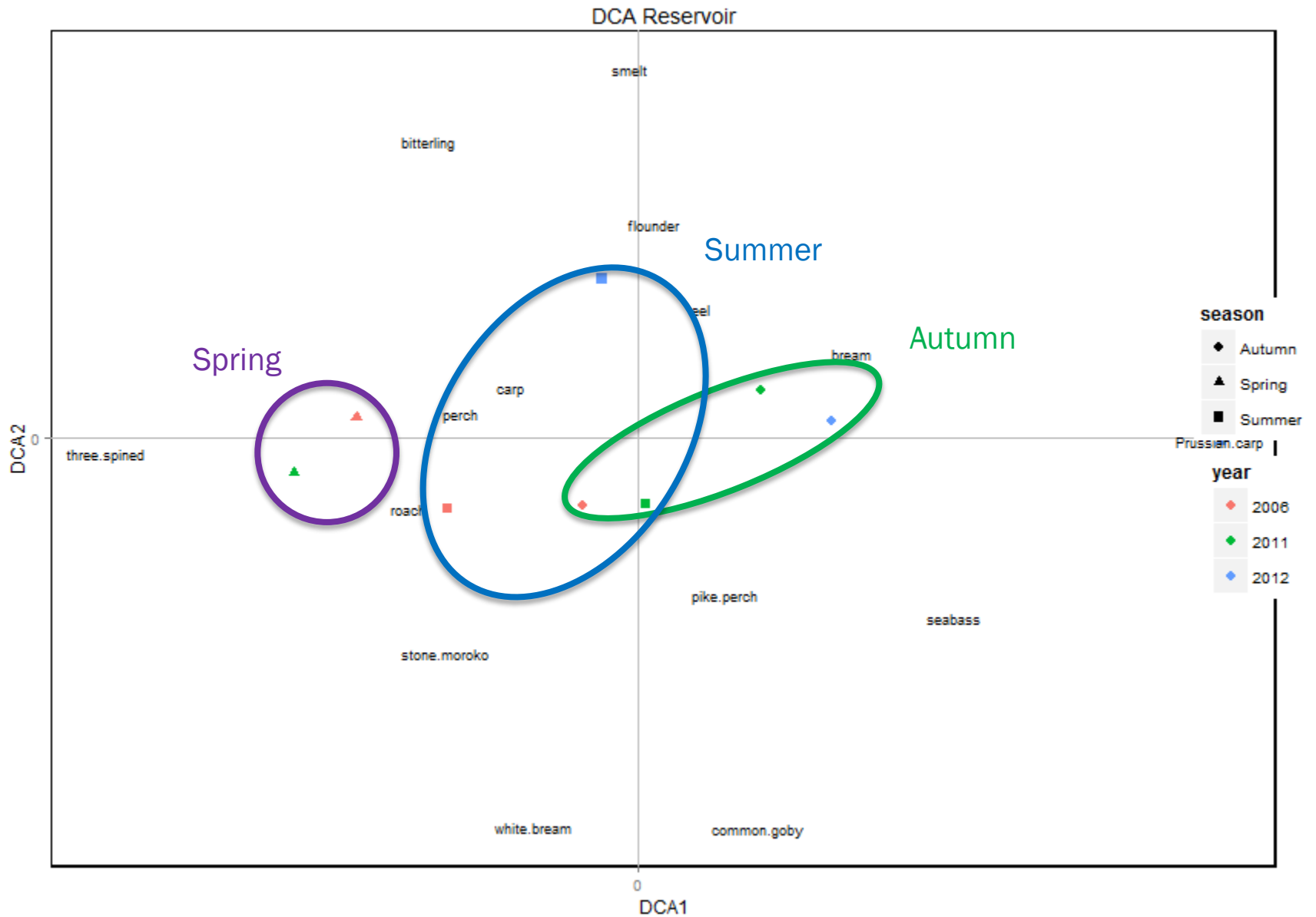
estuarine sp.



marine sp.

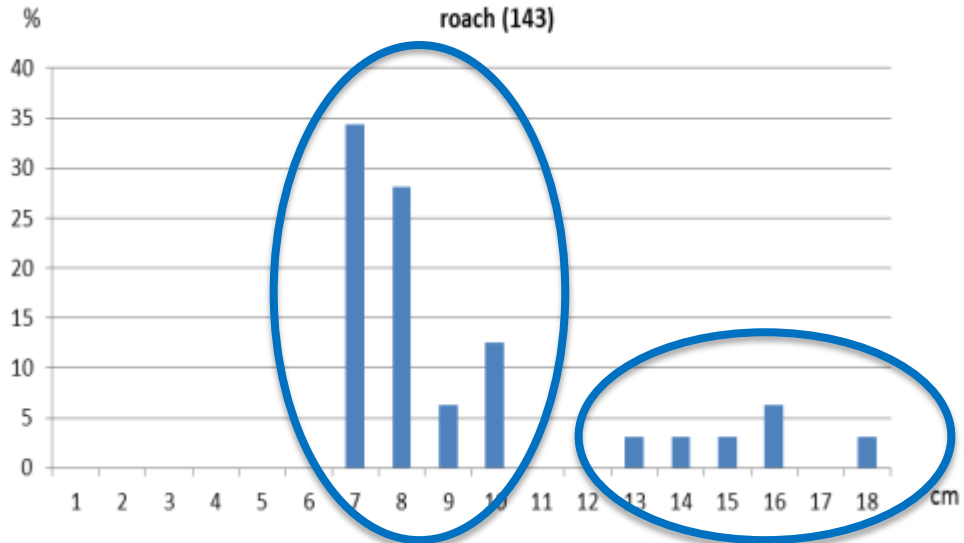
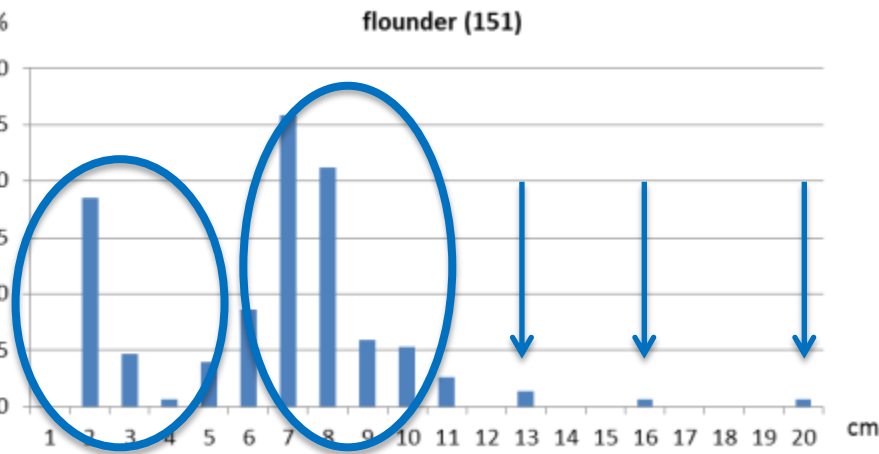
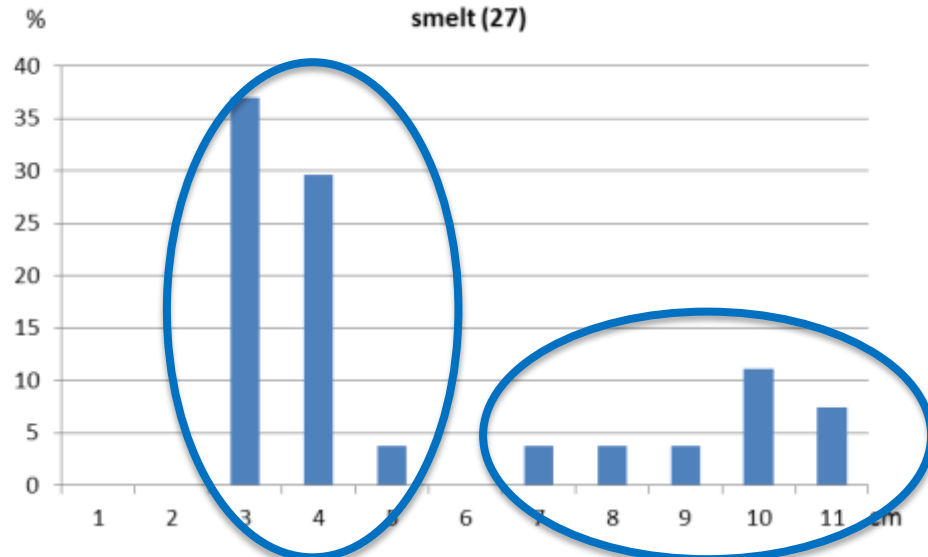
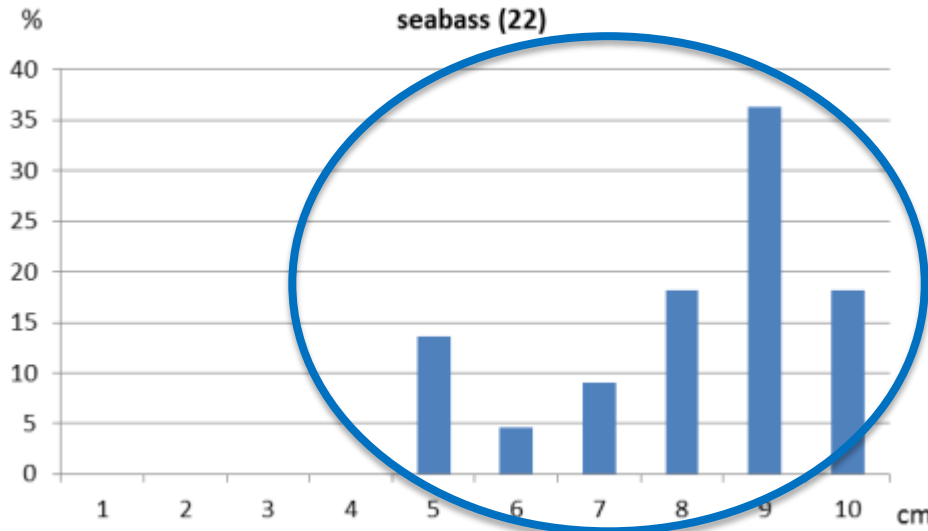


anadromous sp.



DCA 15 species relative abundance: eigenvalues: 0,59; 0,18

Results: paired fyke nets



Reservoir

Results: paired fyke nets

In addition:

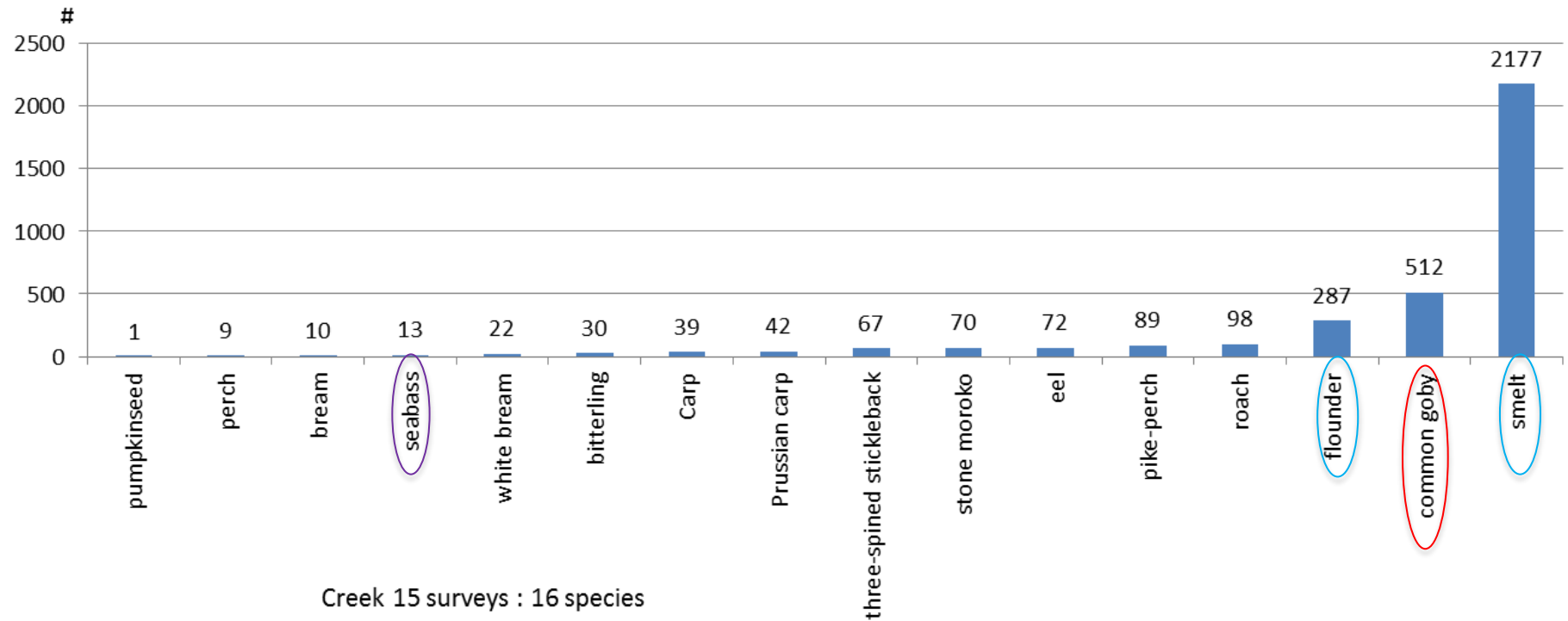
Juveniles of Prussian carp (<7 cm) + adults (max= 43 cm)

Juveniles of perch (<9 cm) few adults (max= 27 cm)


Different length classes of pike-perch (10-70 cm)

Stone moroko larvae in Spring, juveniles (Summer), adult (Autumn)


Results: winged fyke

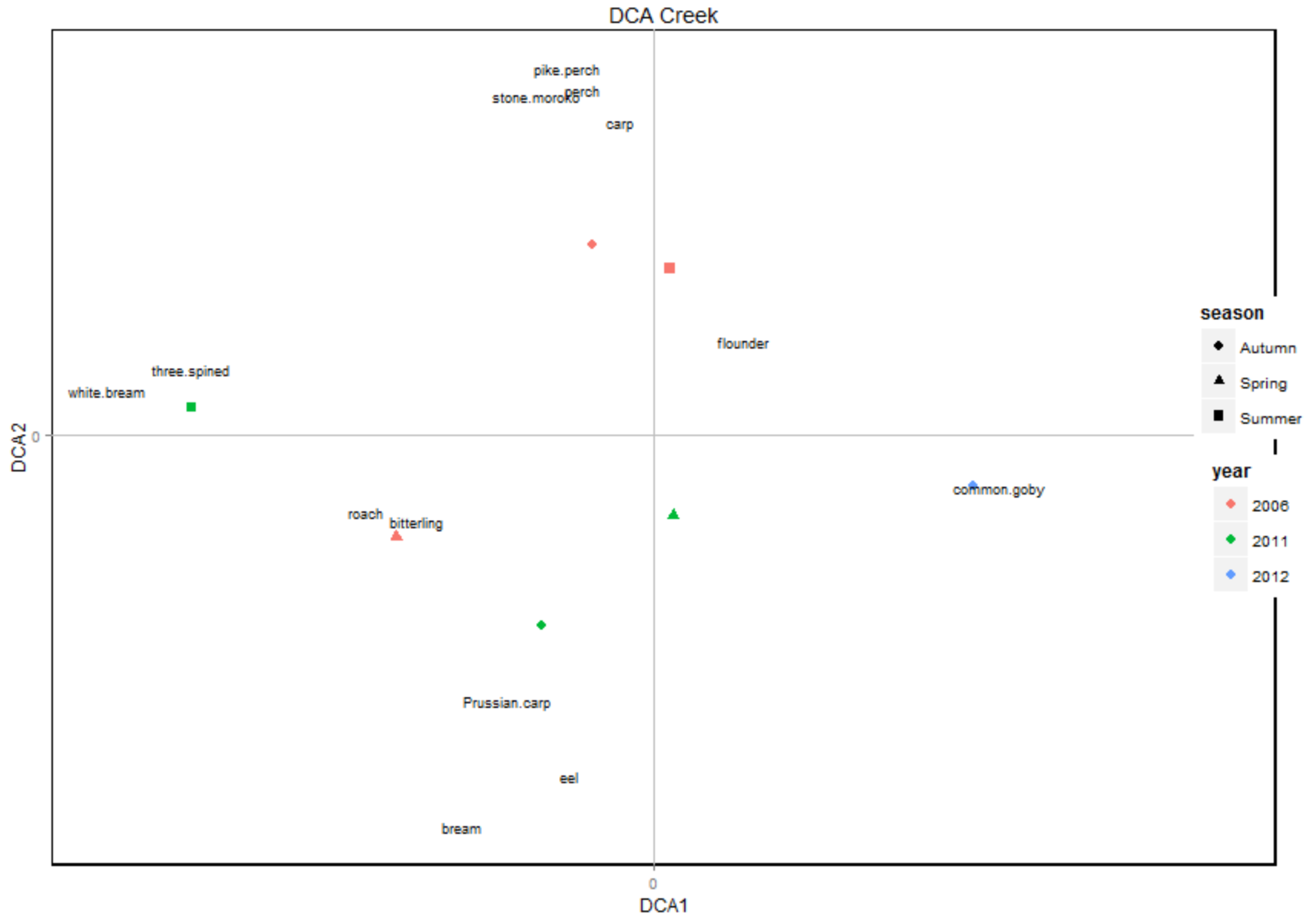


Creek 15 surveys : 16 species

 marine sp.

 estuarine sp.

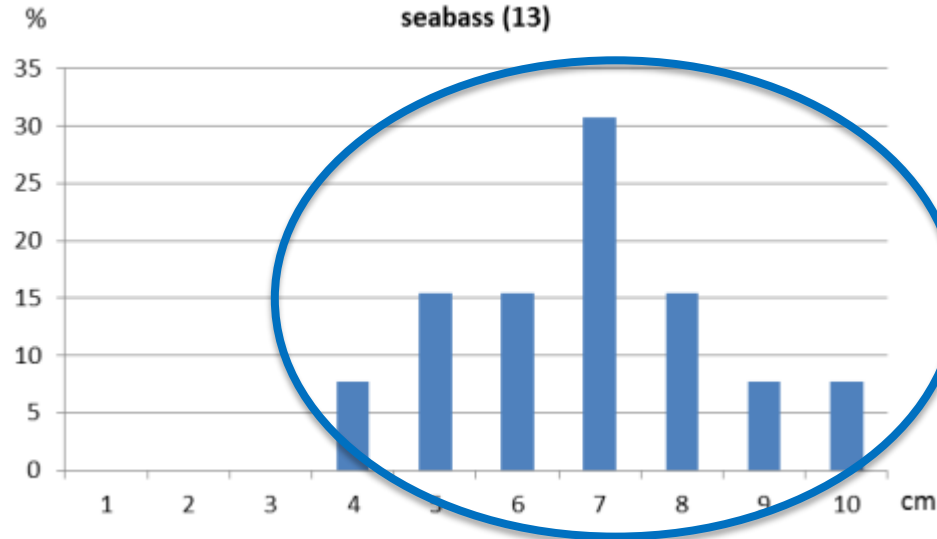
 anadromous sp.



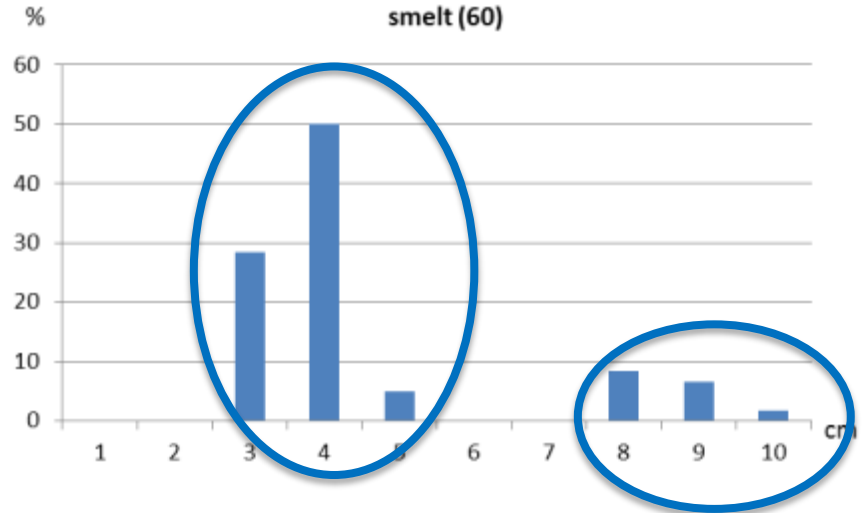
DCA 14 species relative abundance: eigenvalues: 0,86; 0,41

Results: winged fyke

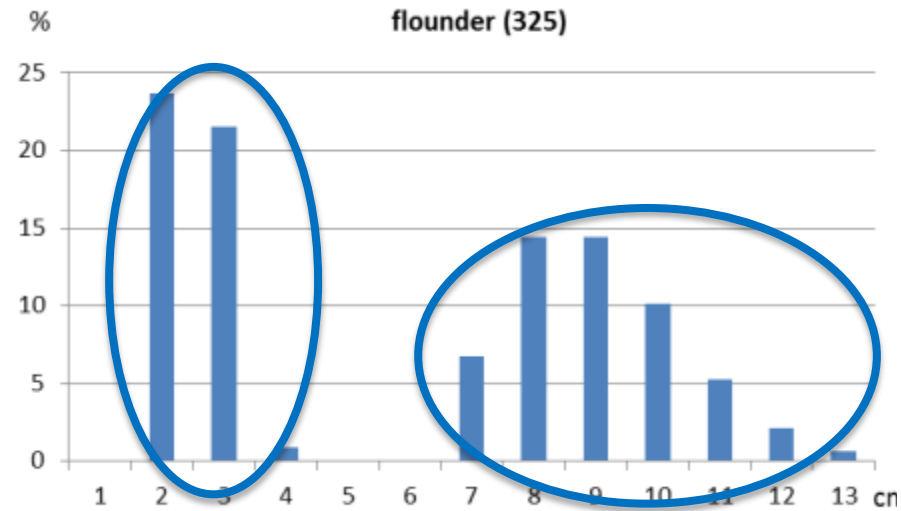
seabass (13)



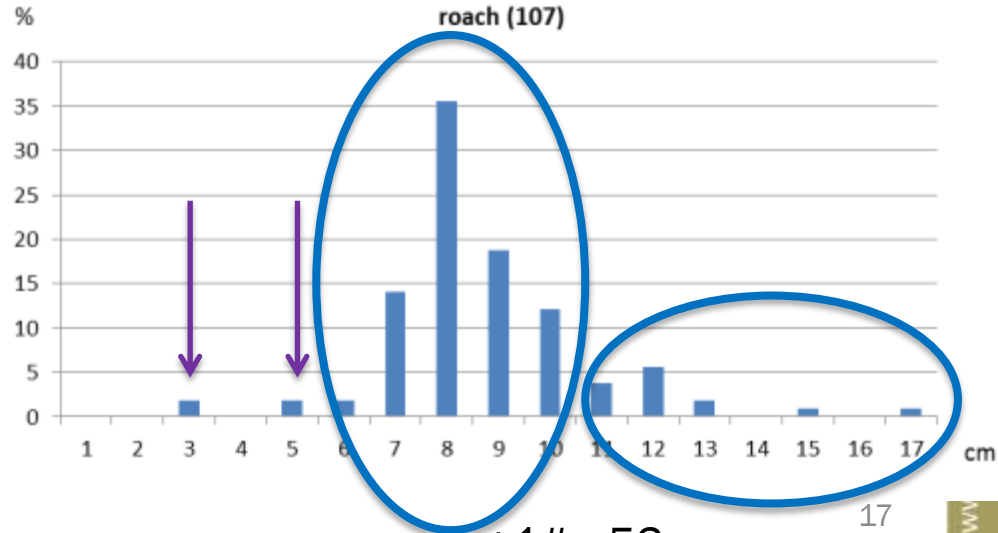
smelt (60)



flounder (325)



roach (107)



Creek

+1# = 53 cm

Results: winged fyke

In addition:

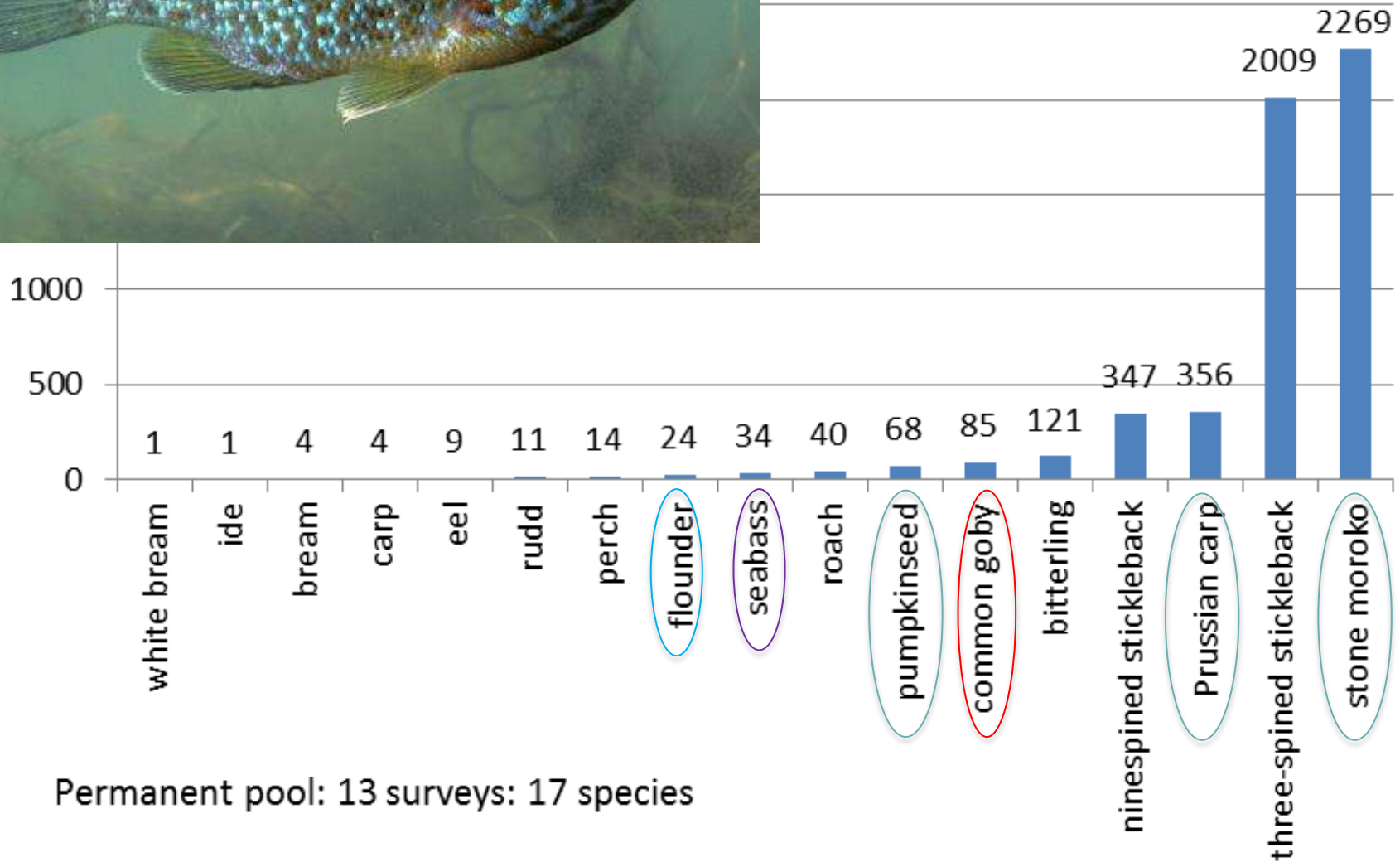
Juveniles of Prussian carp (<7 cm) + adults
(max= 31 cm)

Juveniles of perch (<9 cm) no adults

Smaller pike-perch than in reservoir (9-19 cm)

Stone moroko larvae in Spring, juveniles
(Summer), adult (Autumn)

Electric fishing



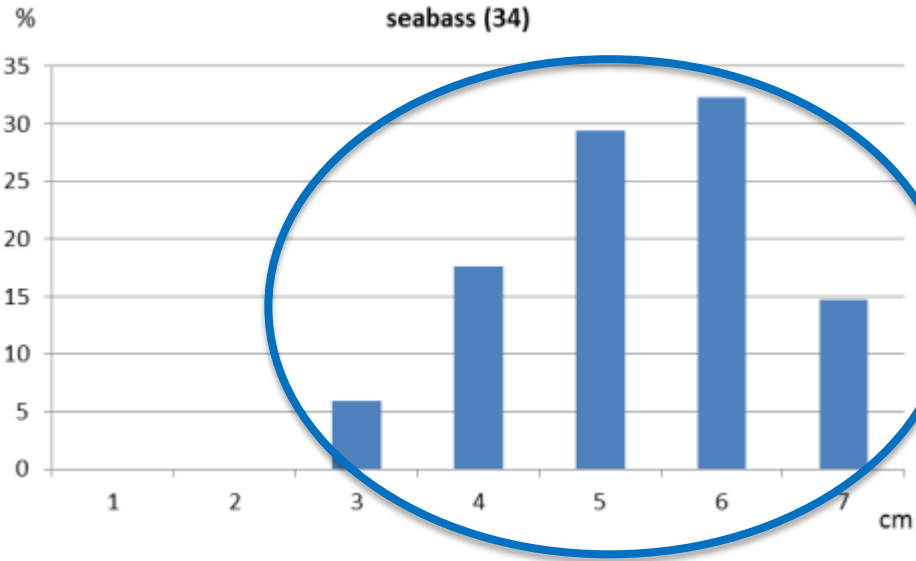
Permanent pool: 13 surveys: 17 species



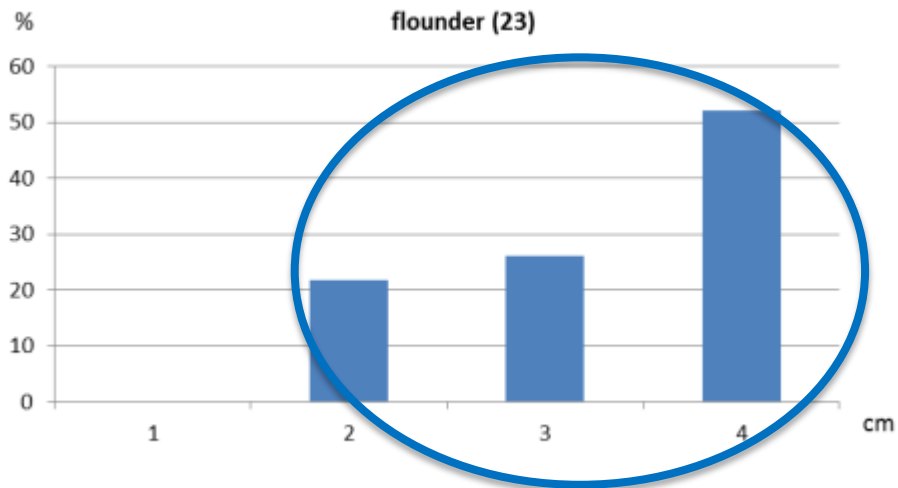
DCA 17 species relative abundance: eigenvalues: 0,56; 0,15

Results: electric fishing

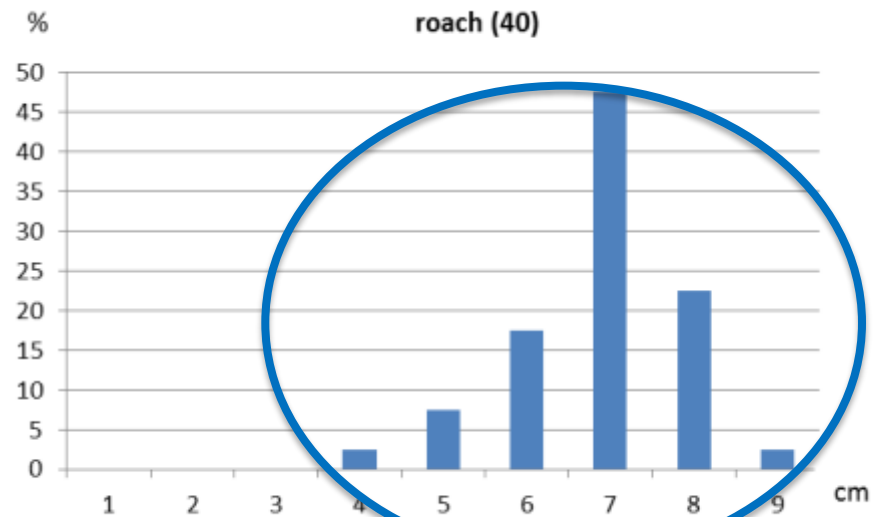
seabass (34)



flounder (23)



roach (40)



Results: electric fishing

In addition:

Juveniles of Prussian carp (<5 cm) : smaller than in other habitats + adults (max= 35 cm)

Perch two groups (9-13 cm and 15-17 cm)

No smelt present

No pike-perch

Stone moroko larvae in Spring, juveniles (Summer), adult (Autumn)

Conclusion

Three types of habitats were surveyed between 2006 and 2012;

In total 20 fish species were caught;

Year to year variations are apparent;

No clear seasonal patterns in creek and pool;

Anadromous species (flounder and smelt) use the area as a nursery;

Common goby and seabass use reservoir as a nursery;

Freshwater species (e.g. roach) spawn in the Lippenbroek;

