

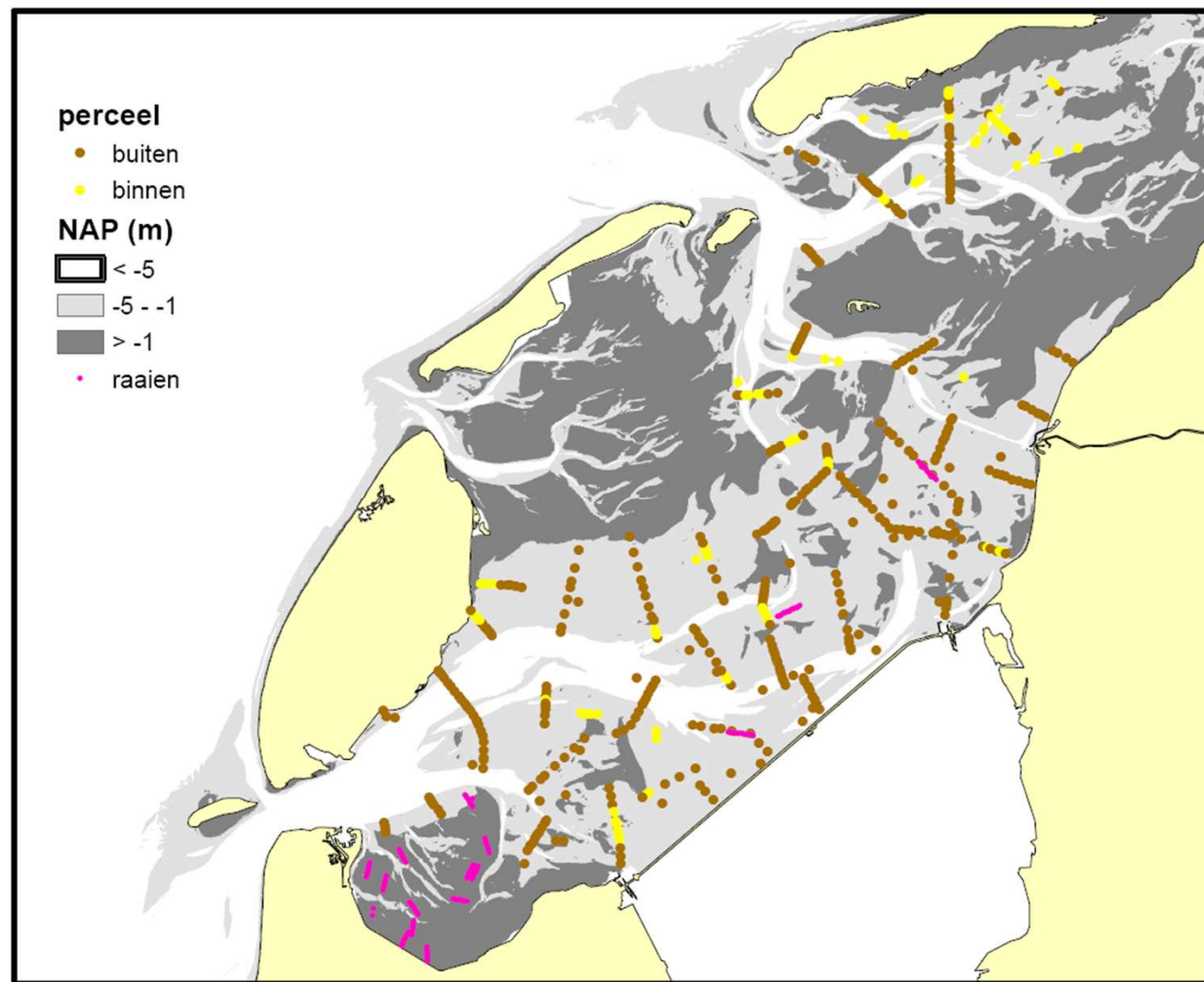


Royal Netherlands Institute for Sea Research

Lange termijn veranderingen van het macrozoobenthos in de sublitorale westelijke Waddenzee en het belang van mosselvoorkomens voor de biodiversiteit

Jan Drent & Rob Dekker

Westelijke Waddenzee monsterstations

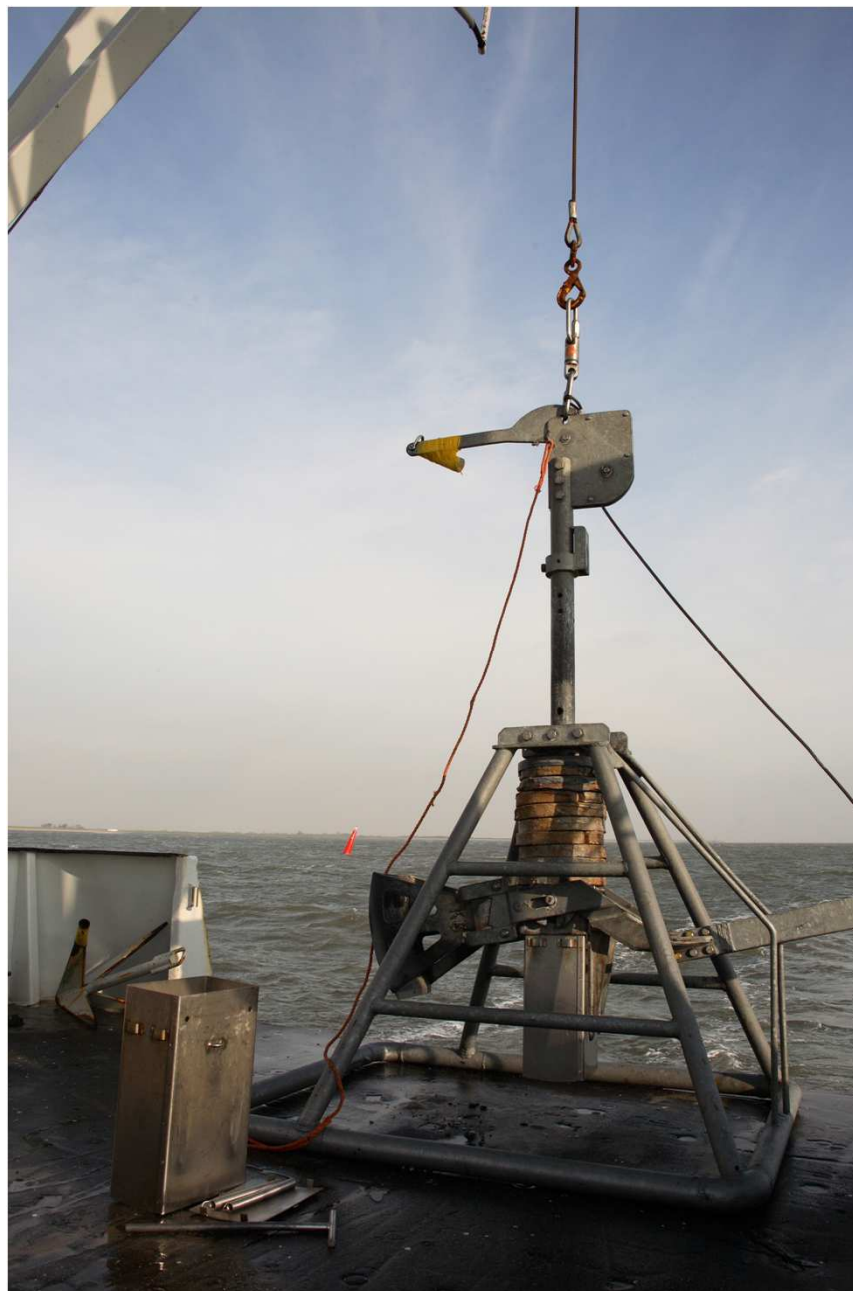


Bemonstering met:

Reineck box corer (6 dm²)

Diepte: min 15 cm

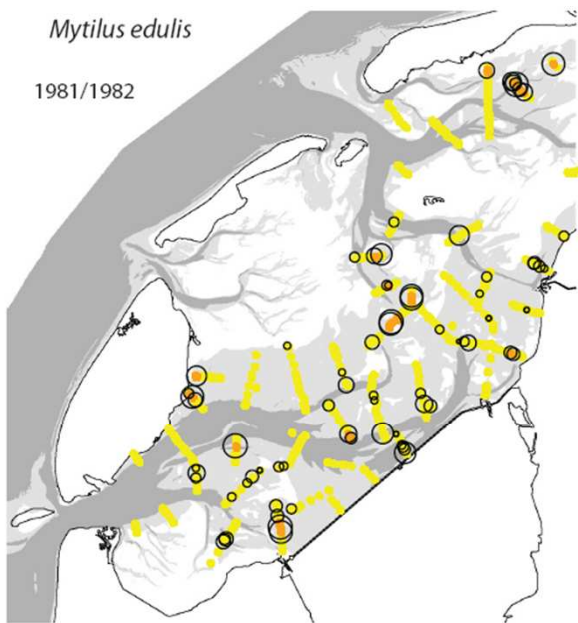
Gezeefd over 1 mm gaas





Mytilus edulis

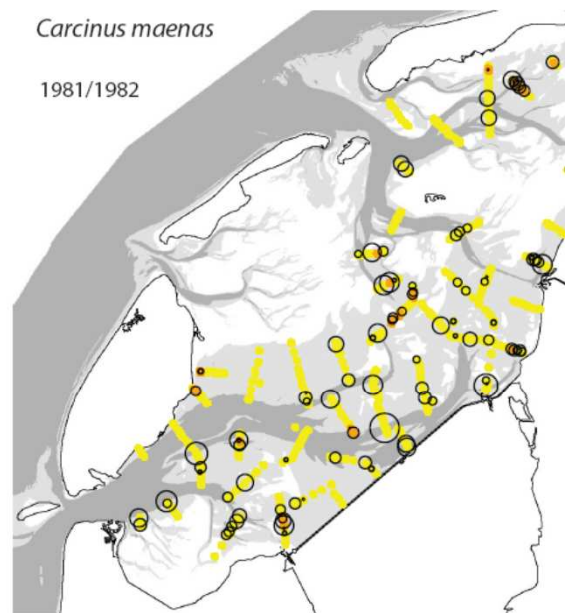
1981/1982



- 311.57
- 623.14
- 934.71
- 1246.28
- 1557.85

Carcinus maenas

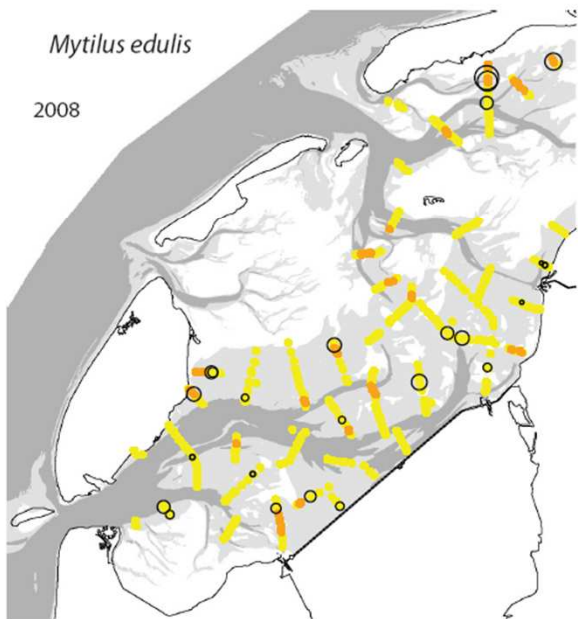
1981/1982



- 30.37
- 60.74
- 91.1
- 121.47
- 151.84

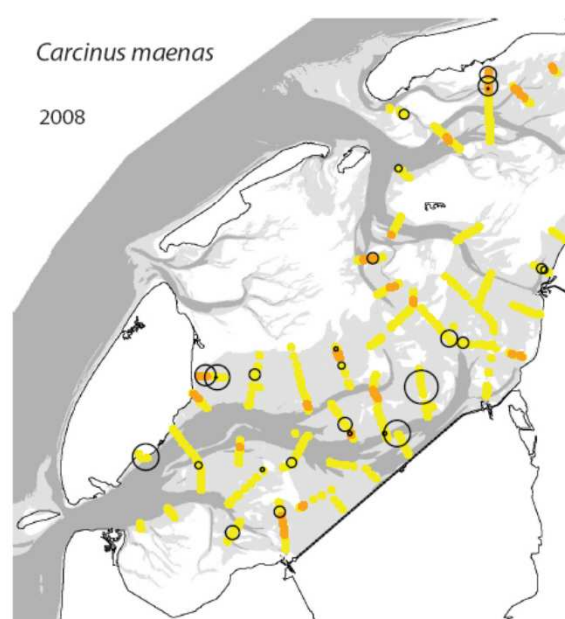
Mytilus edulis

2008



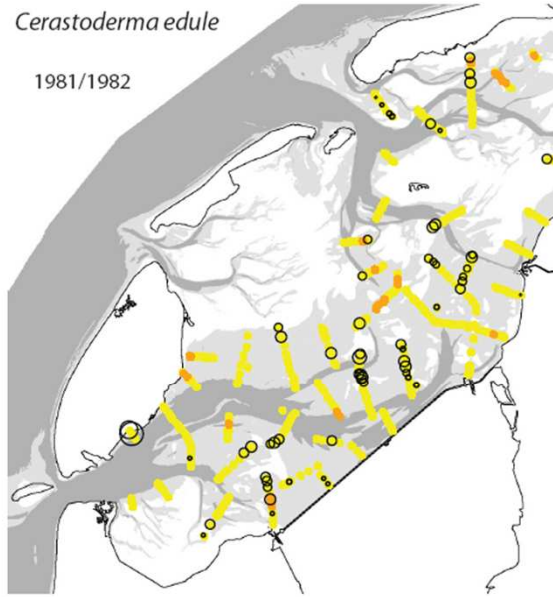
Carcinus maenas

2008



Cerastoderma edule

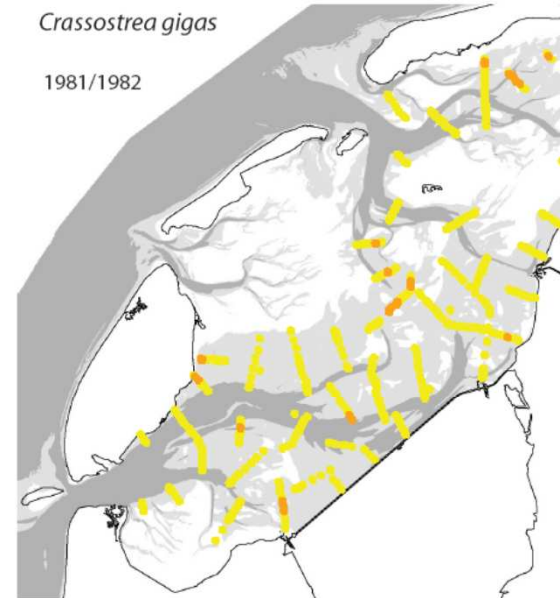
1981/1982



- 358.14
- 716.27
- 1074.41
- 1432.54
- 1790.68

Crassostrea gigas

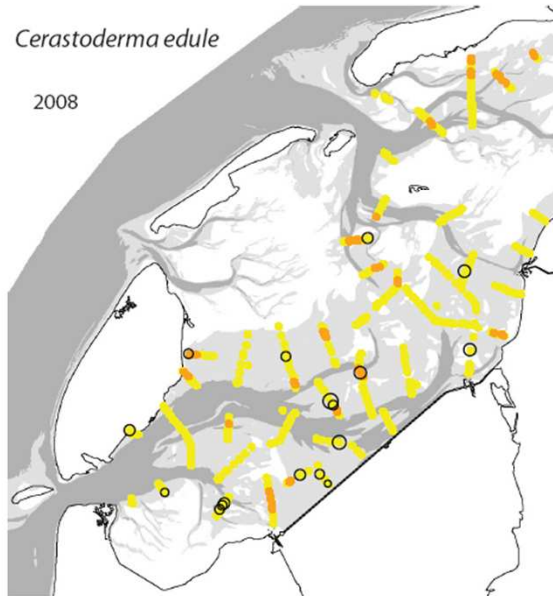
1981/1982



- 63.11
- 126.22
- 189.33
- 252.43
- 315.54

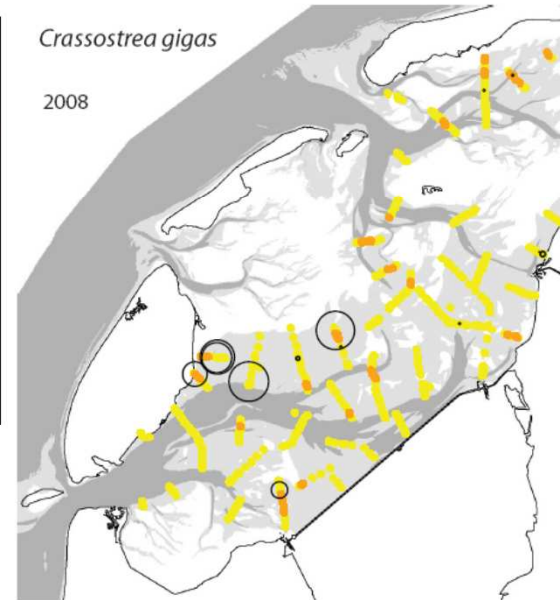
Cerastoderma edule

2008



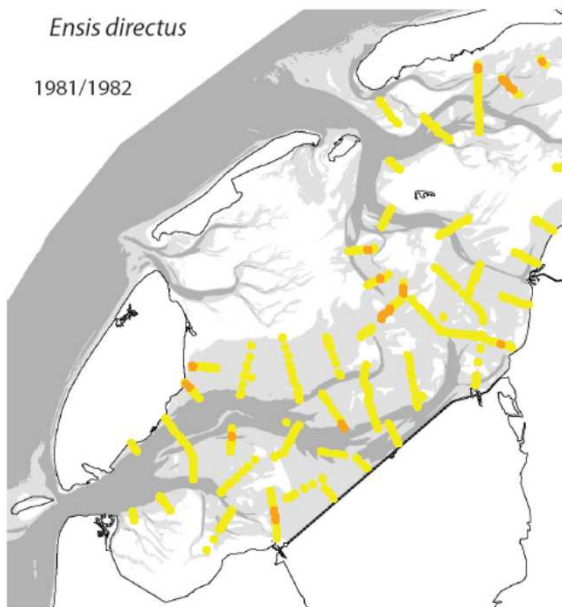
Crassostrea gigas

2008



Ensis directus

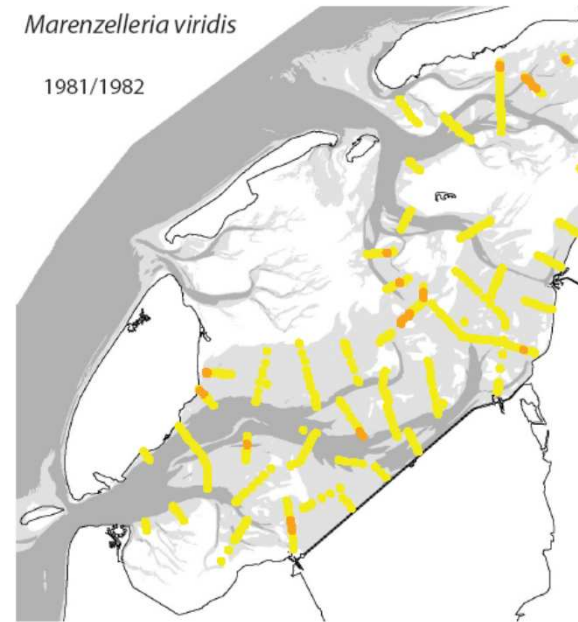
1981/1982



- 95.09
- 190.19
- 285.28
- 380.38
- 475.47

Marenzelleria viridis

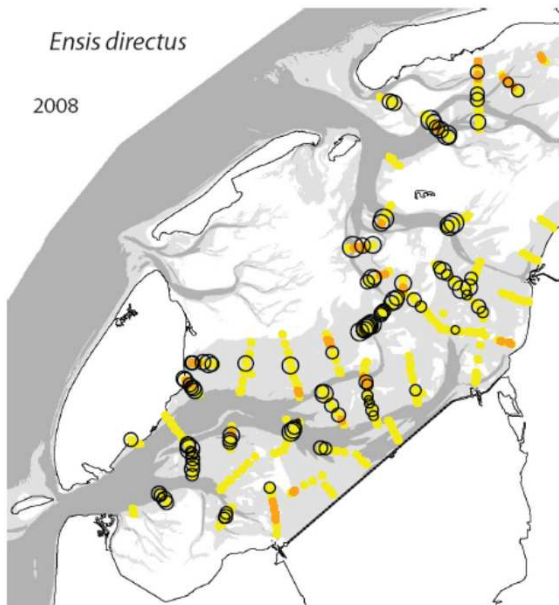
1981/1982



- 18.5
- 37.01
- 55.51
- 74.01
- 92.51

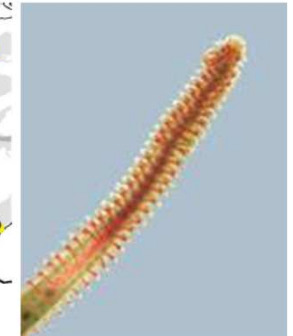
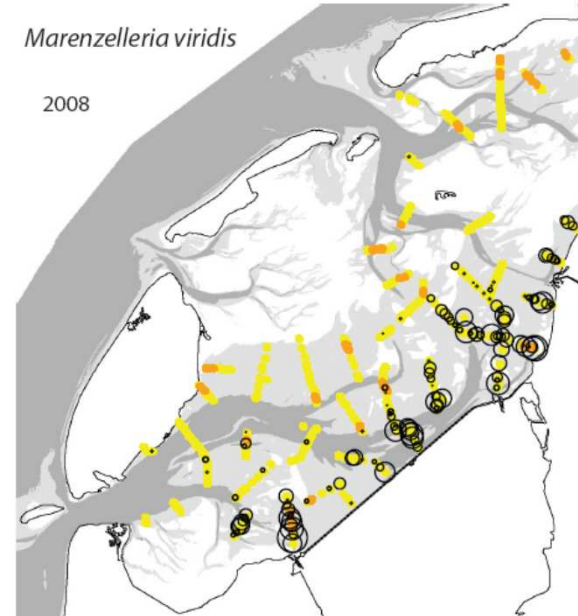
Ensis directus

2008



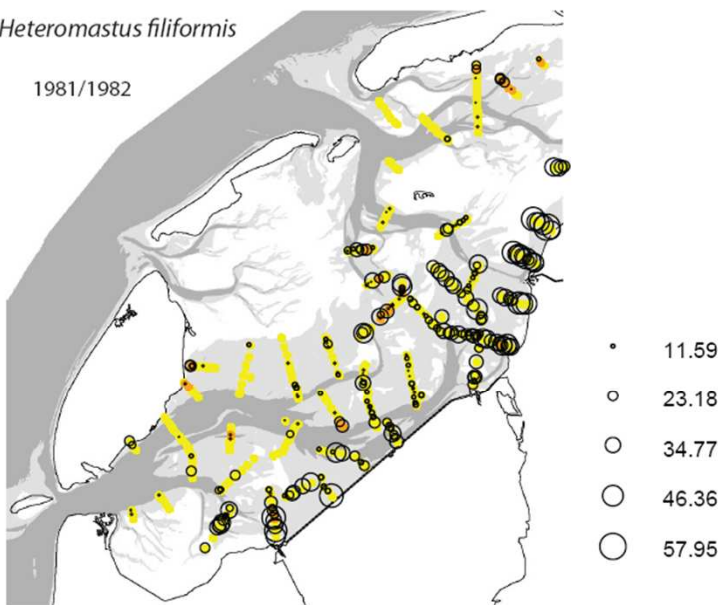
Marenzelleria viridis

2008



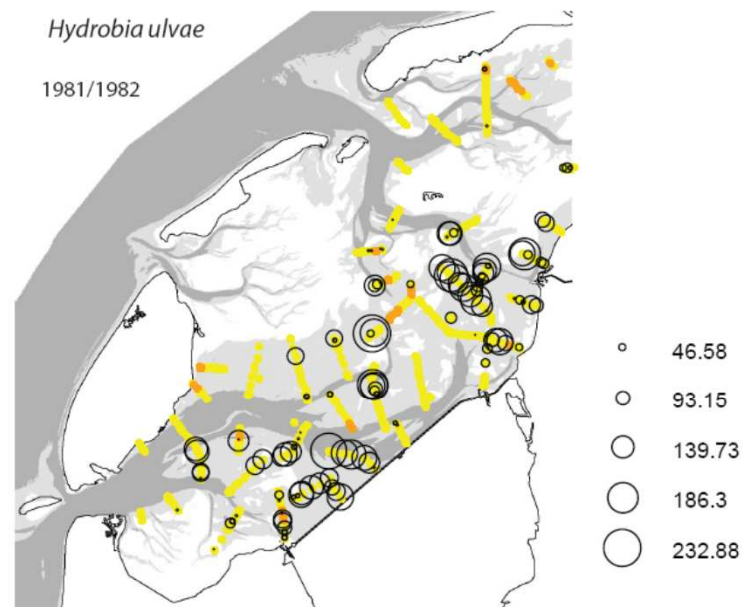
Heteromastus filiformis

1981/1982



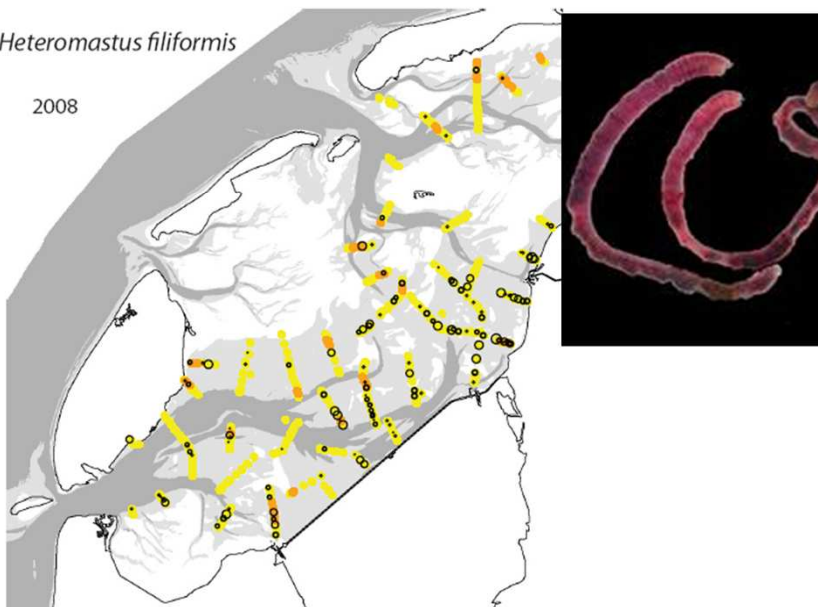
Hydrobia ulvae

1981/1982



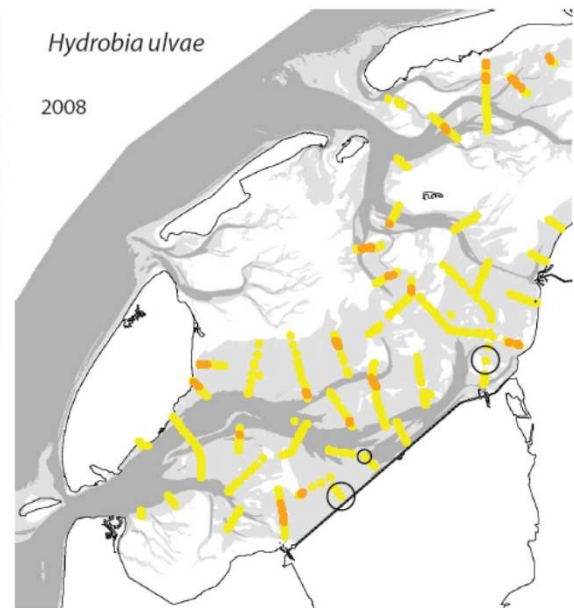
Heteromastus filiformis

2008



Hydrobia ulvae

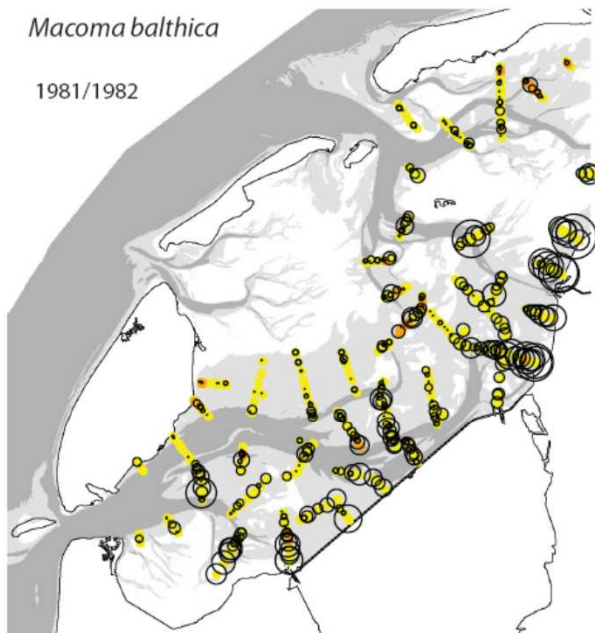
2008





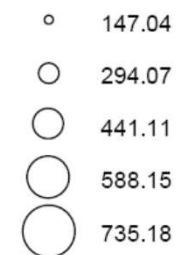
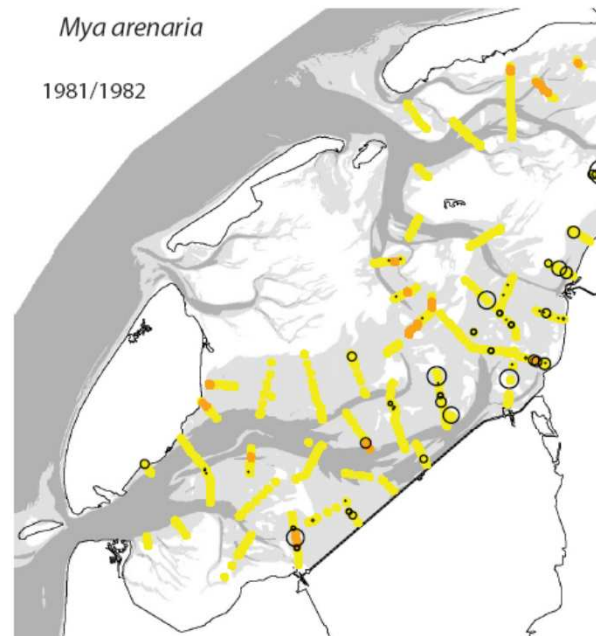
Macoma balthica

1981/1982



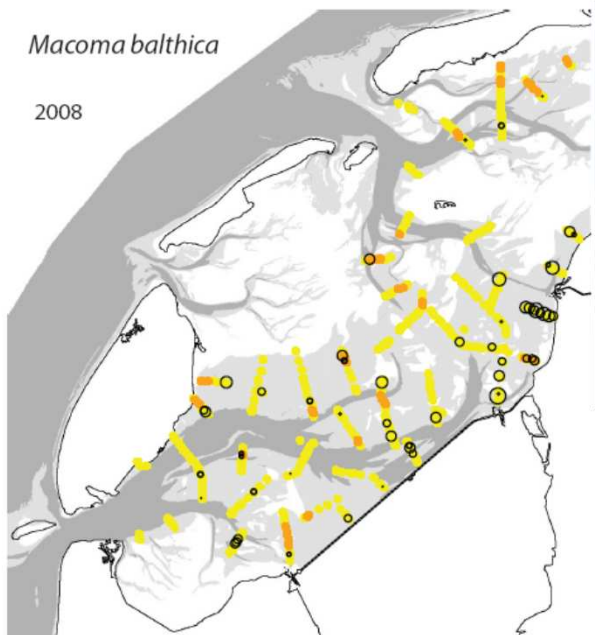
Mya arenaria

1981/1982



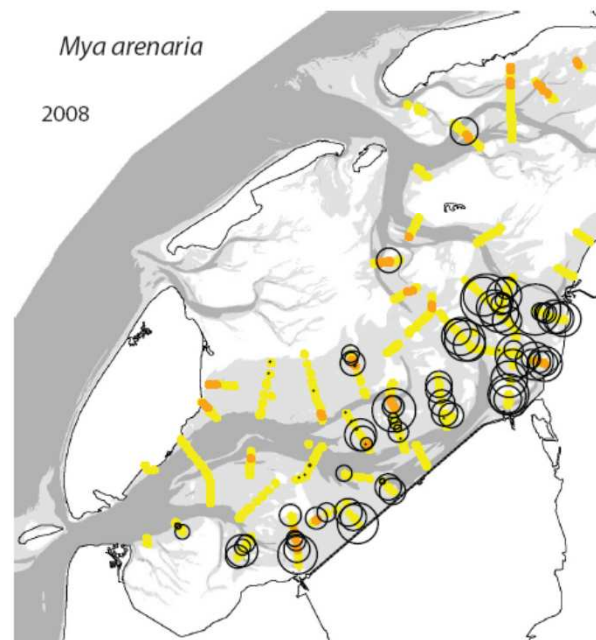
Macoma balthica

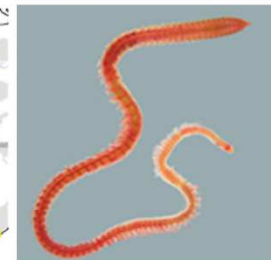
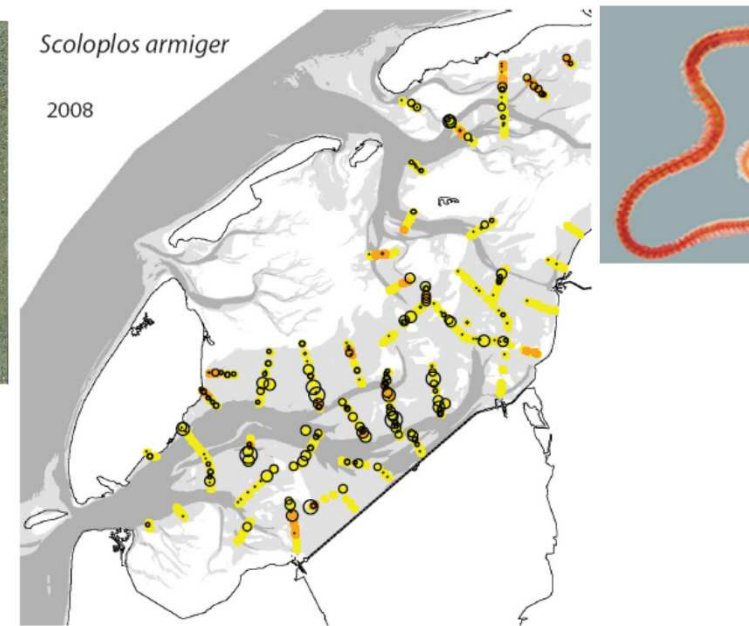
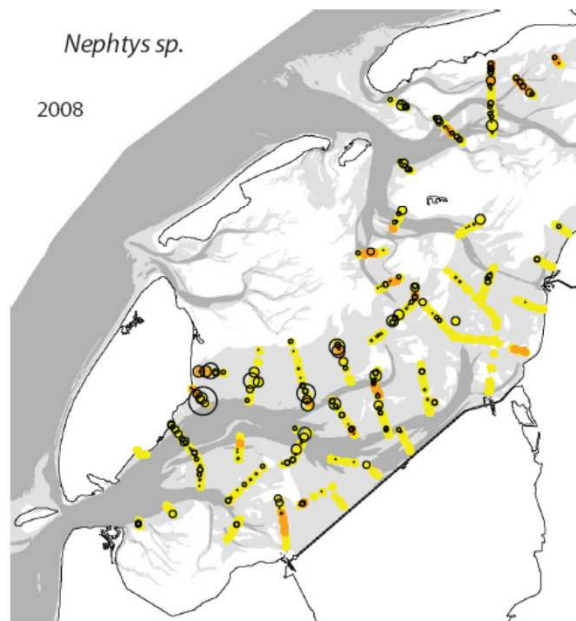
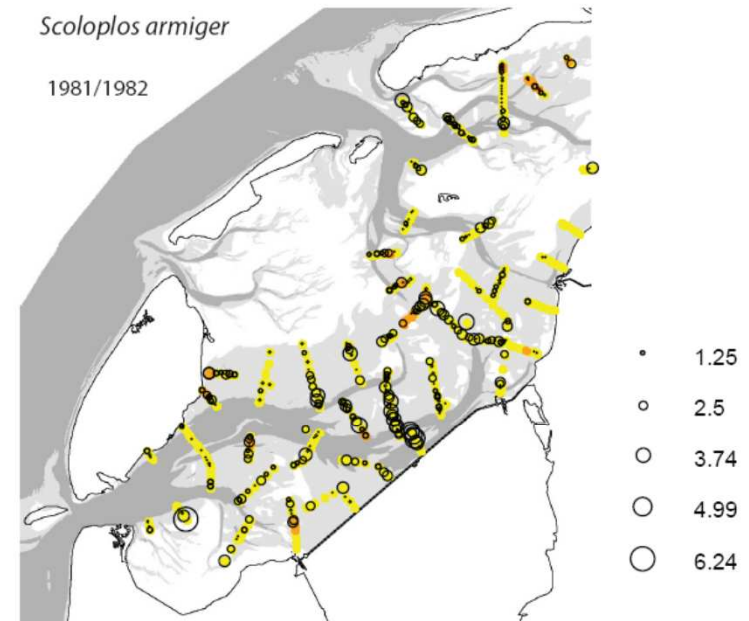
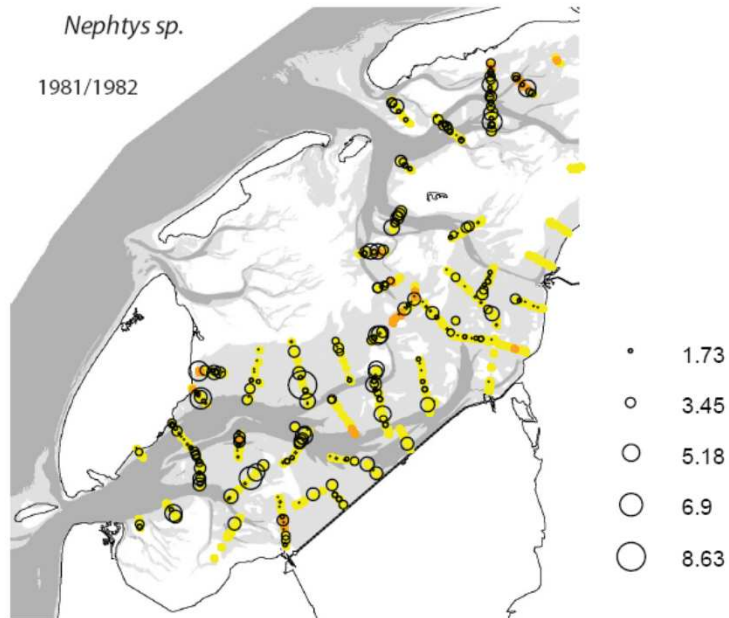
2008



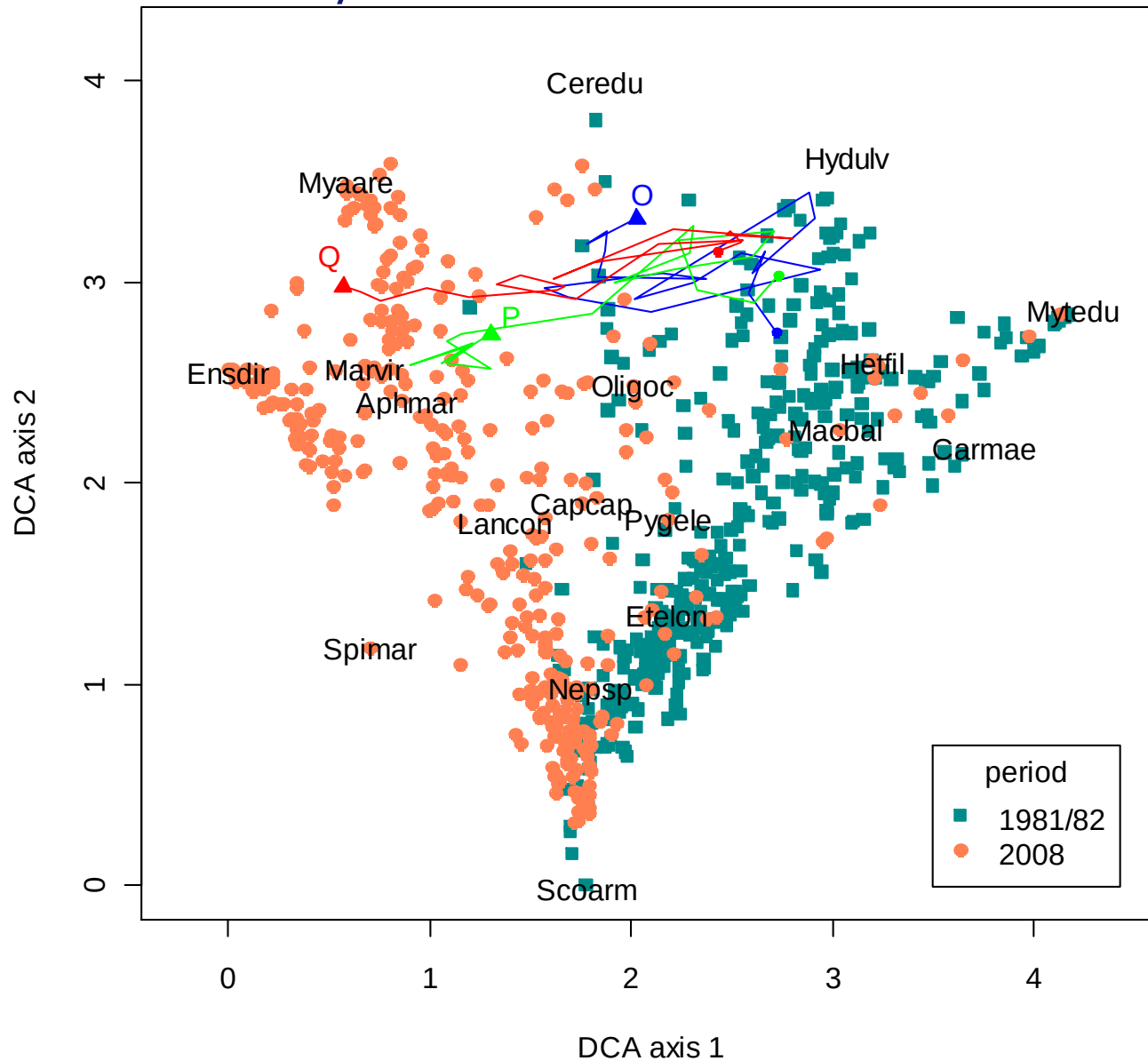
Mya arenaria

2008

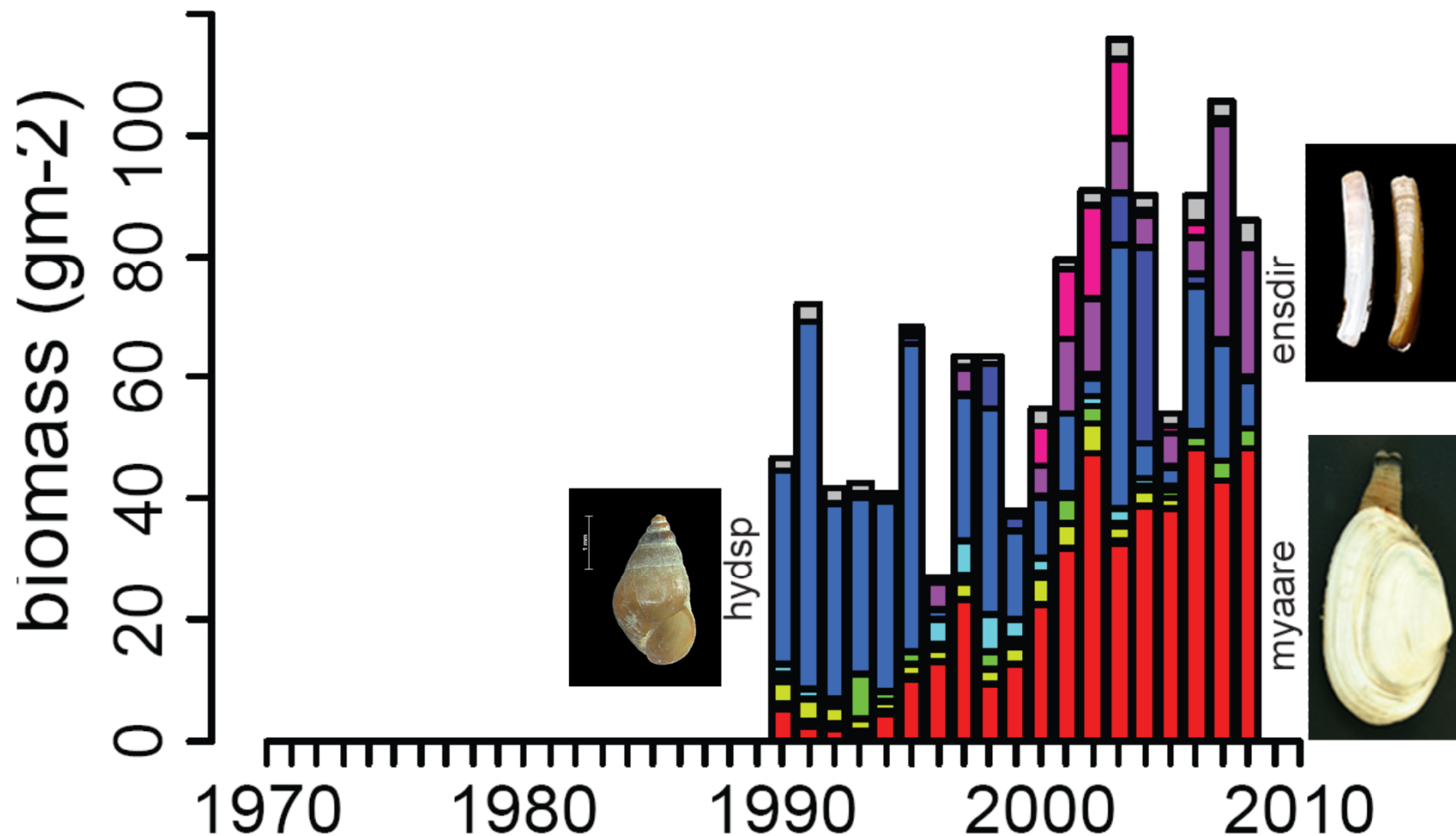




Verandering bodemdierengemeenschap tussen 1981/82 en 2008

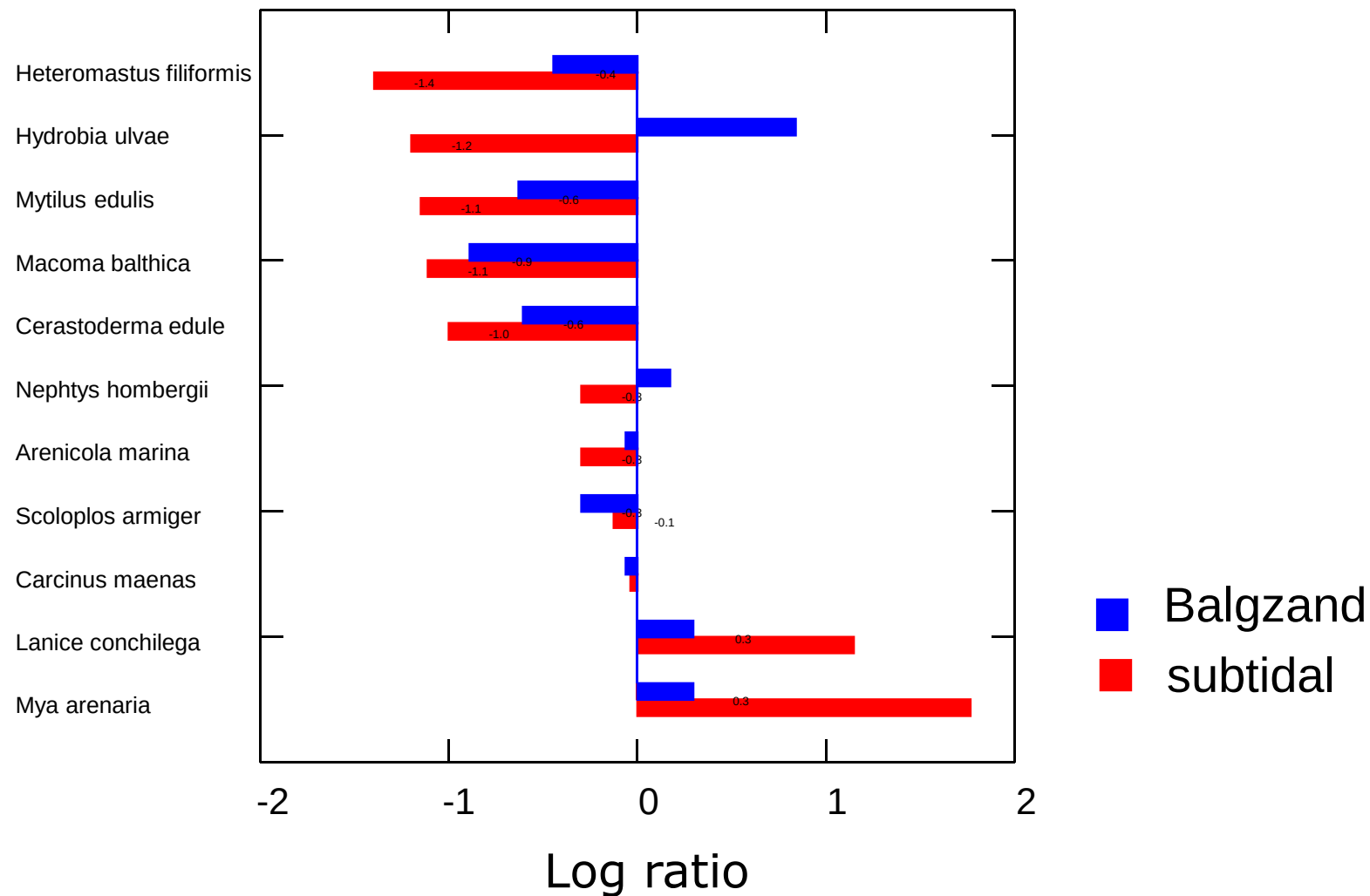


Verandering in gemeenschap op vaste monsterlocaties door de tijd

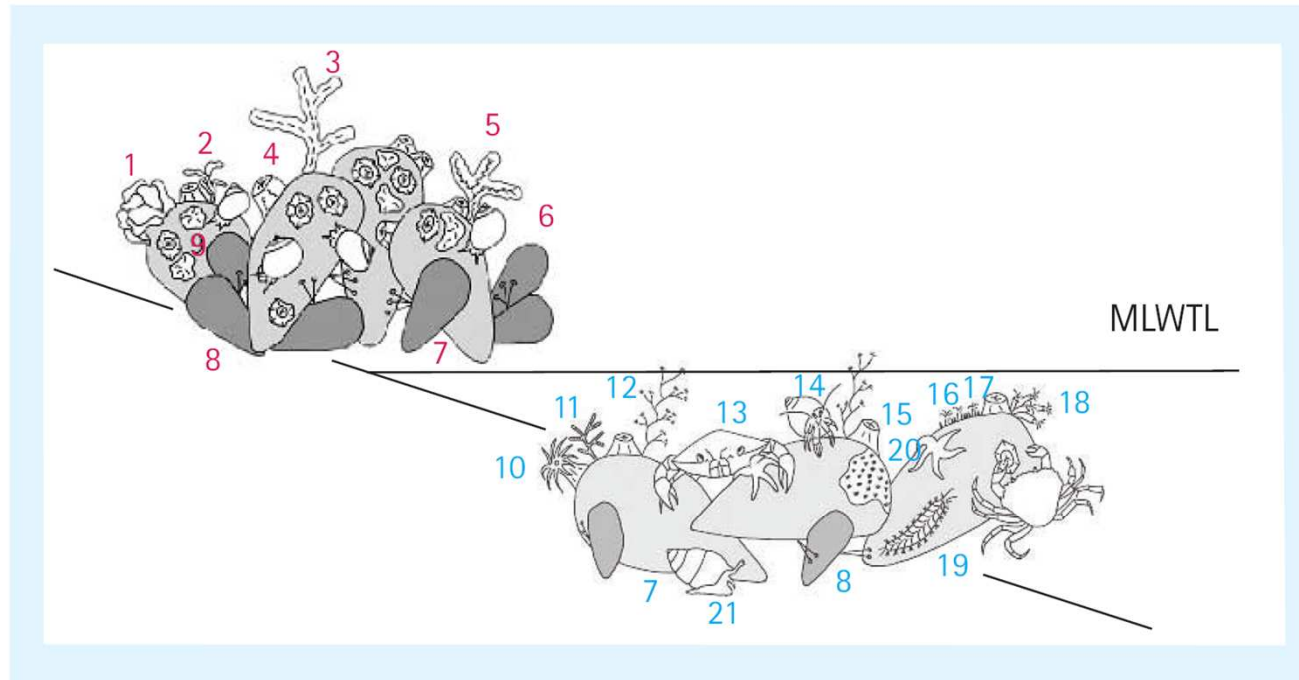




Verandering biomassa tussen 81/82 en 2008 intertidal en subtidal



Biodiversiteit mosselbanken



- 1 *Chondrus crispus* (Rhodophyta); 2 *Enteromorpha spec.* (Chlorophyta); 3 *Fucus vesiculosus* forma *mytili* (Phaeophyta); 4 *Semibalanus balanoides* (Cirripedia); 5 *Bryopsis plumosa* (Chlorophyta); 6 *Littorina littorea* (Gastropoda); 7+8 *Mytilus edulis* (Bivalvia), 7 adult, 8 juvenile; 9 *Ralfsia verrucosa* (Phaeophyta); 10 *Metridium senile* (Anthozoa); 11 *Stylonema alsidii* (Rhodophyta); 12 *Obelia longissima* (Hydrozoa); 13 *Carcinus maenas*, adult (Crustacea); 14 *Eupagurus bernhardus* (Crustacea); 15 *Balanus crenatus* (Cirripedia); 16 *Asterias rubens*, juvenile (Echinodermata); 17 *Hydractinia echinata* (Hydrozoa); 18 *Bowerbankia sp.* (Bryozoa); 19 *Harmothoe sp.* (Polychaeta); 20 *Alcyonidium mytili* (Bryozoa); 21 *Buccinum undatum* (Gastropoda), (after Buschbaum and Saier, 2003).

Soorten geassocieerd met mossels



Venerupis



Carcinus



Petricola



Alitta succinea



Sagartia troglodytes

Sessile soorten



Crepidula



Barnacles



Metridium

Bryozoans



Tunicates



Hydroids



Mobile soorten



Asterias



Hemigrapsus



Harmothoe

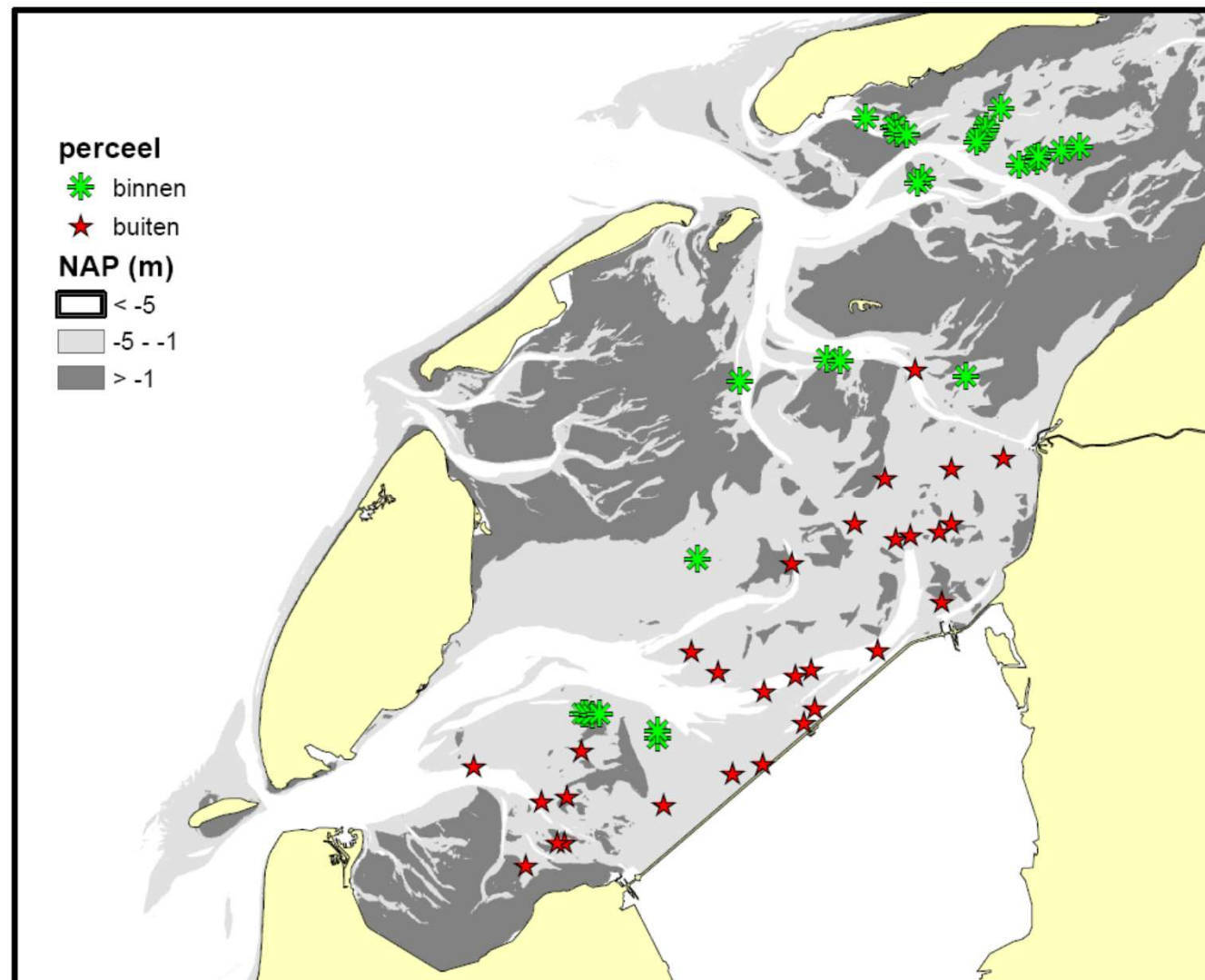


Eulalia

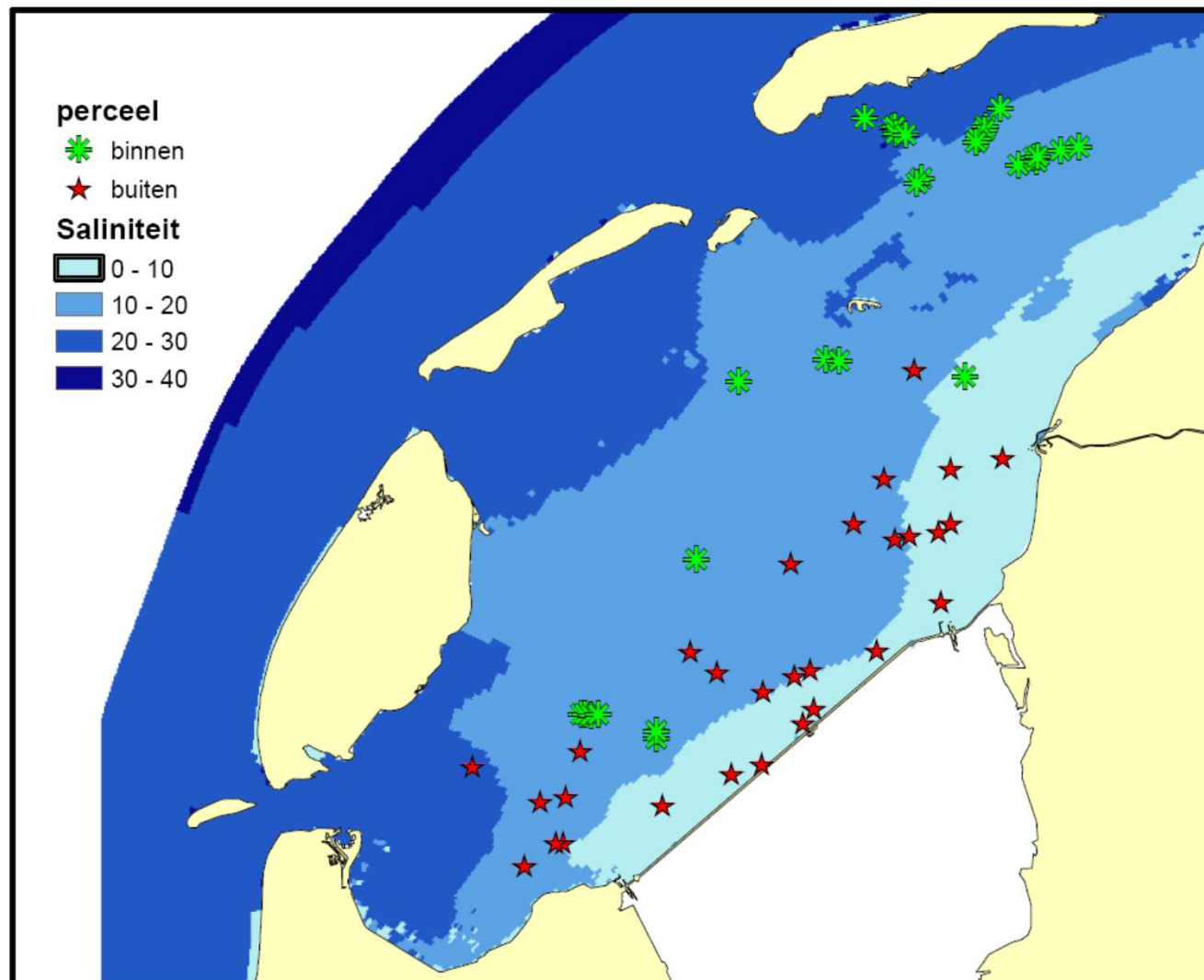


Amphipods

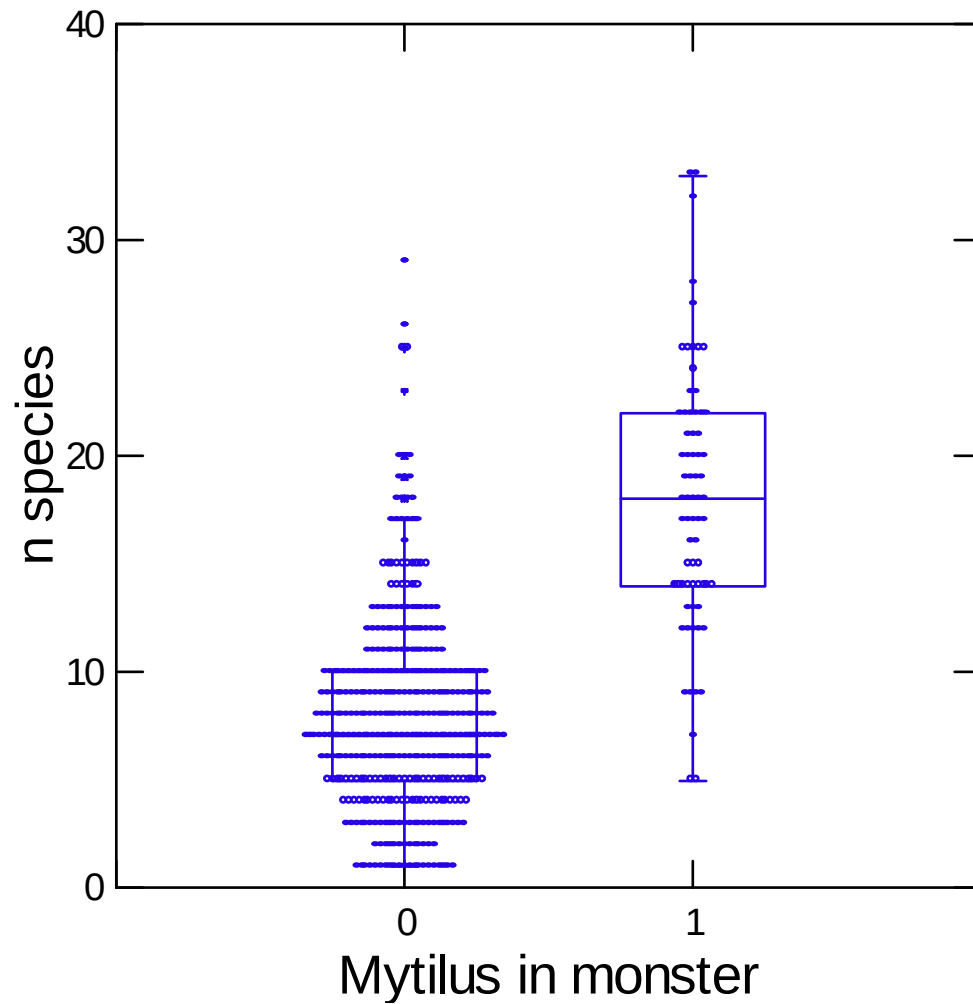
Aangewezen mosselvoorkomens binnen en buiten percelen



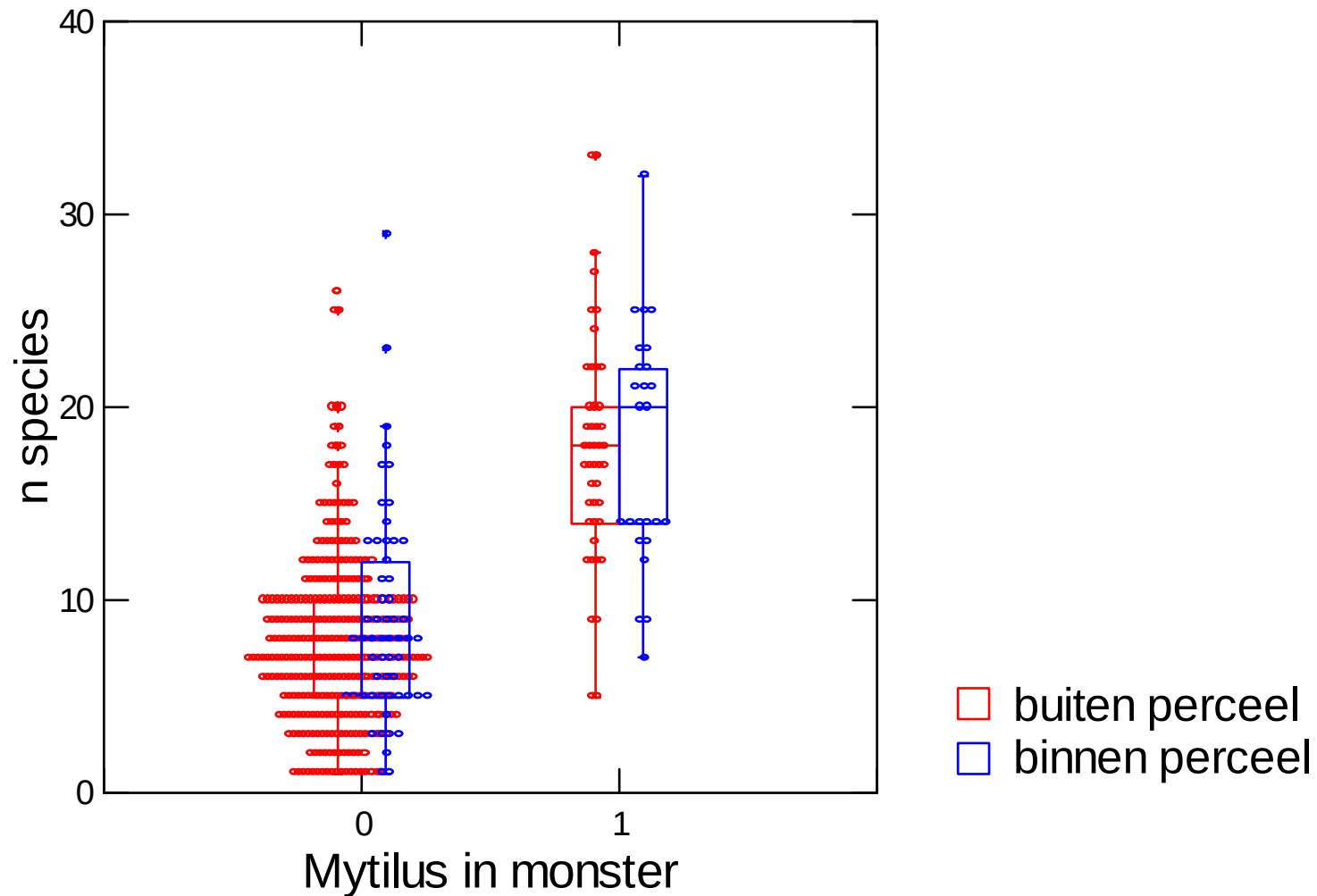
Zoutgehalte en aangewezen mosselvoorkomens binnen en buiten percelen



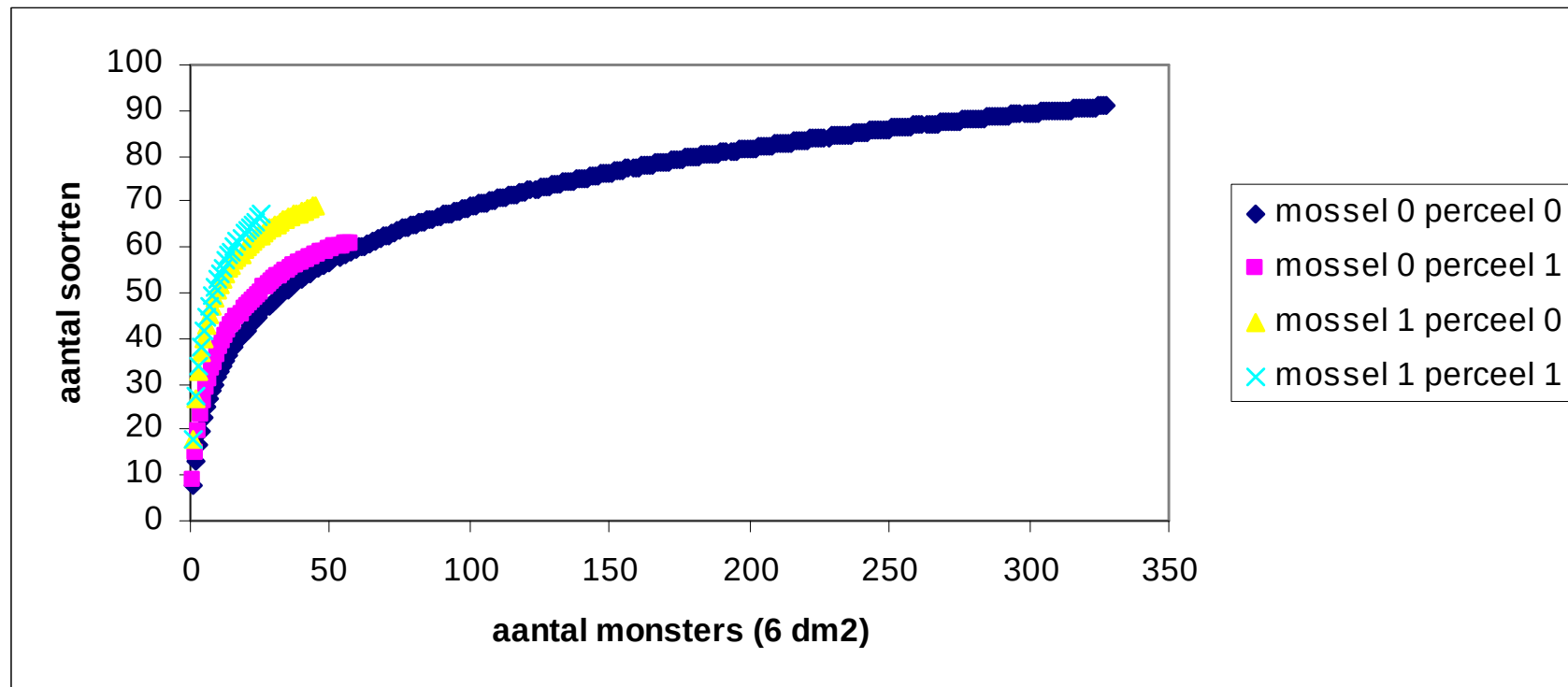
Aantal soorten per monster van 6 dm² met en zonder mossels



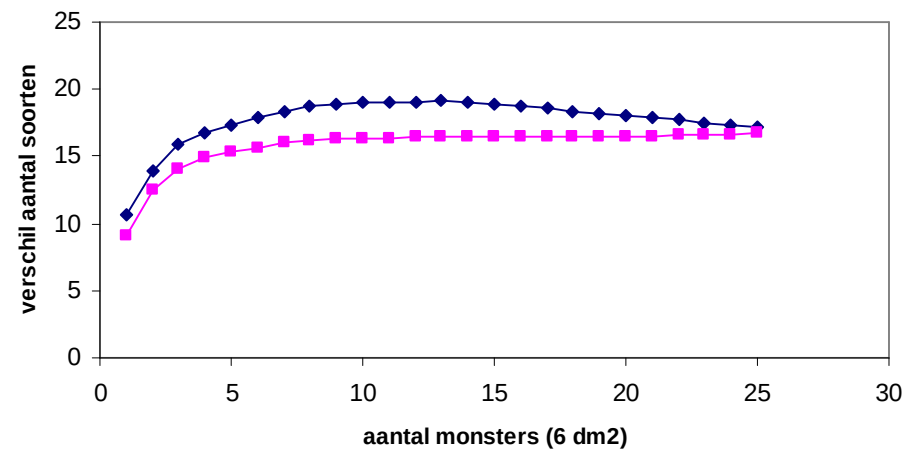
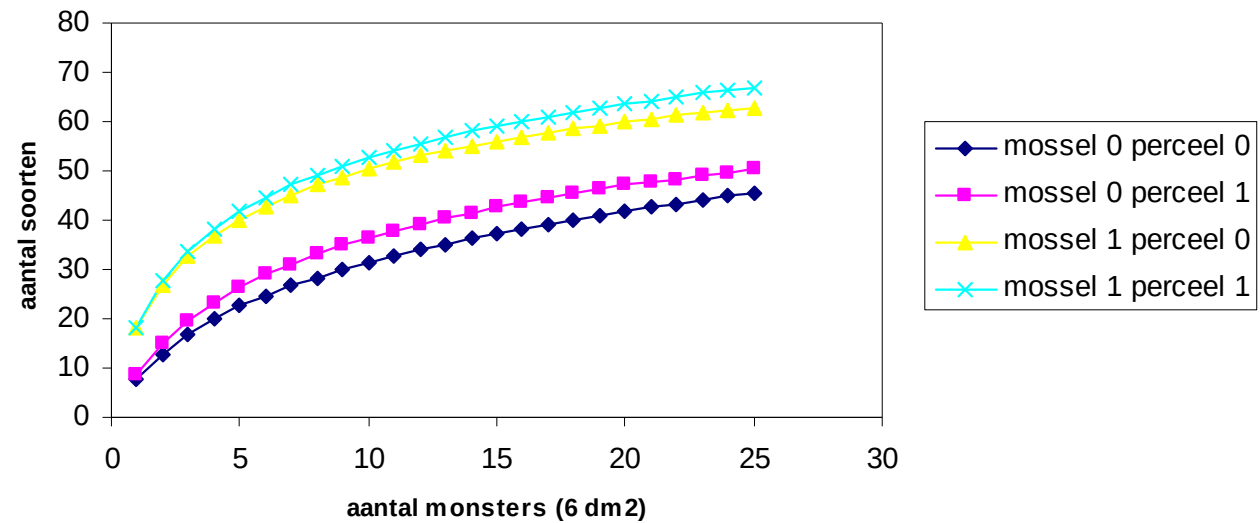
Aantal soorten per monster van 6 dm² met en zonder mossels binnen en buiten perceel



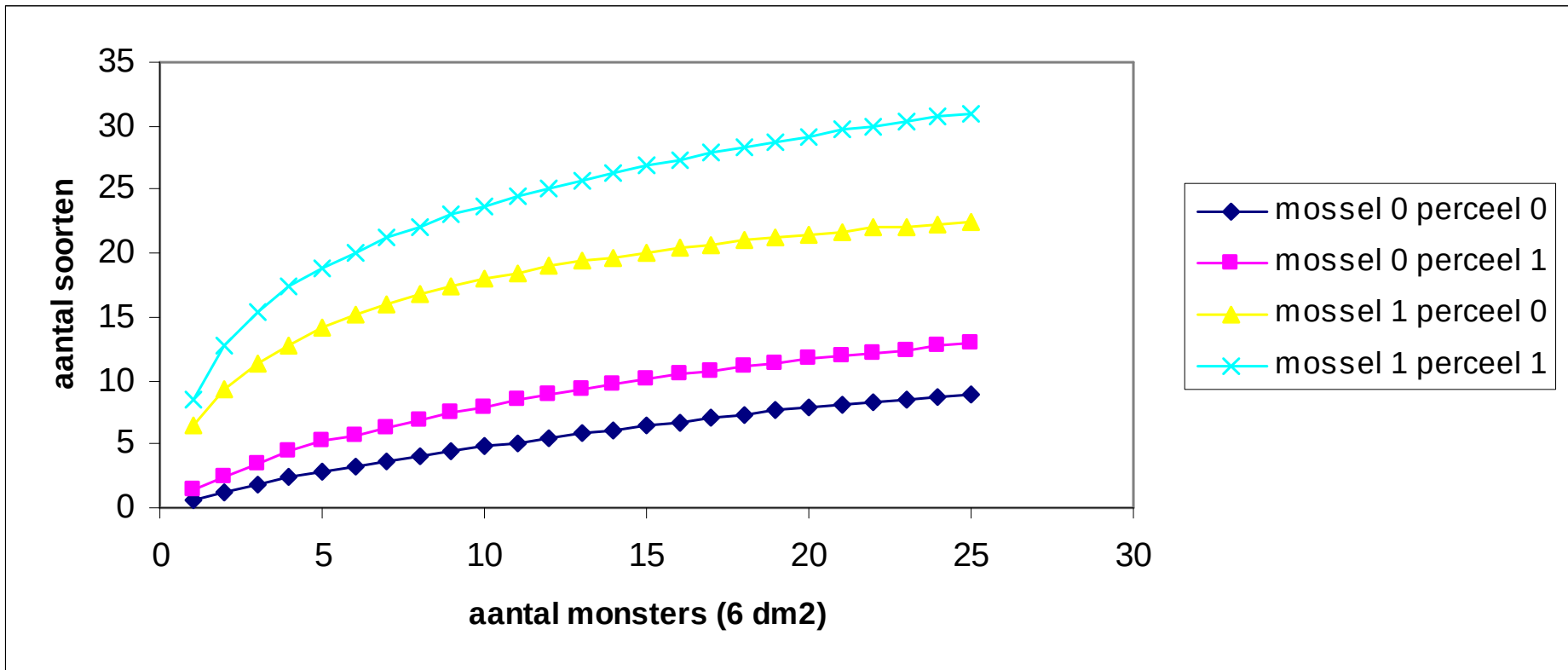
Aantallen soorten met en zonder mossels



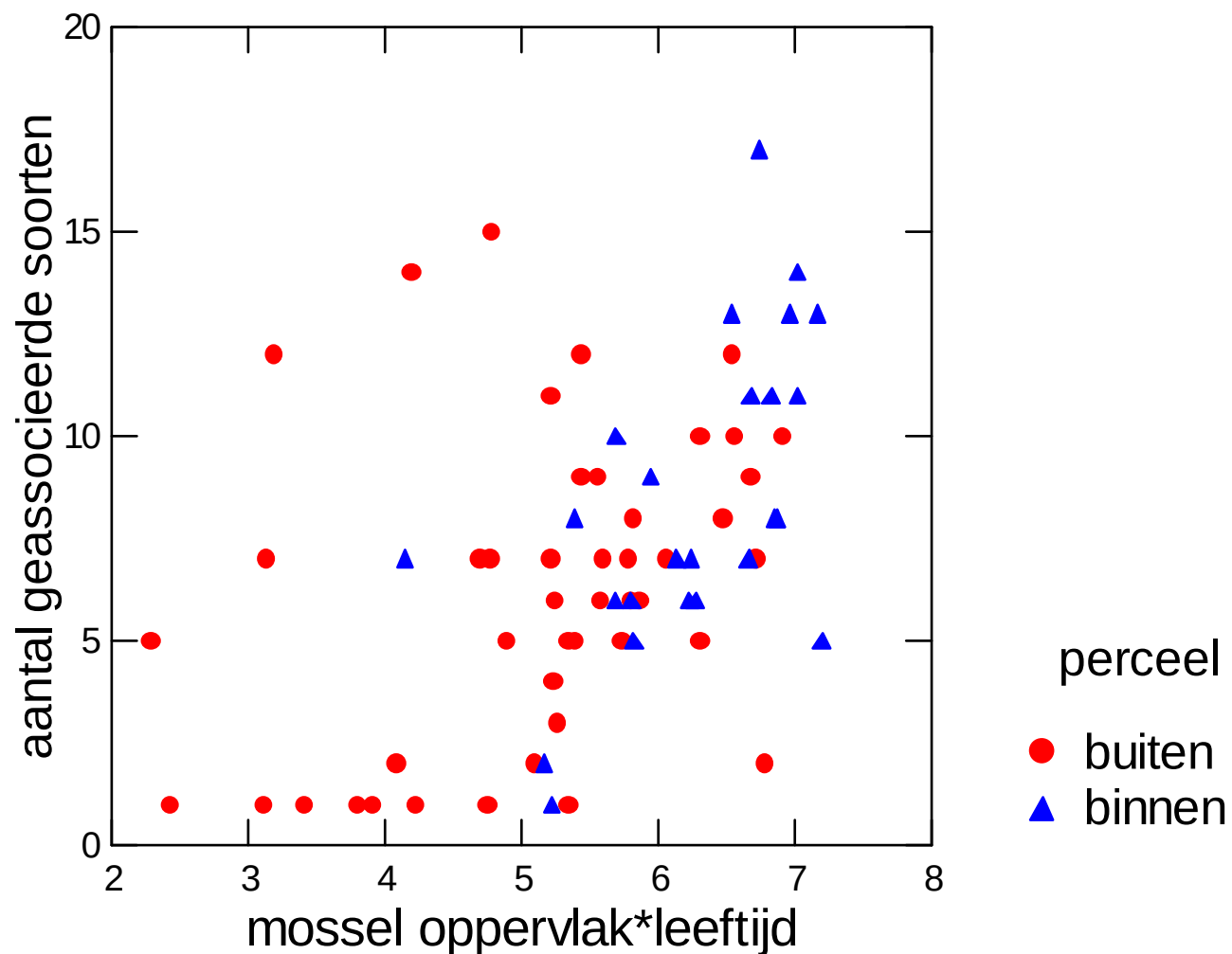
Aantallen soorten met en zonder mossels



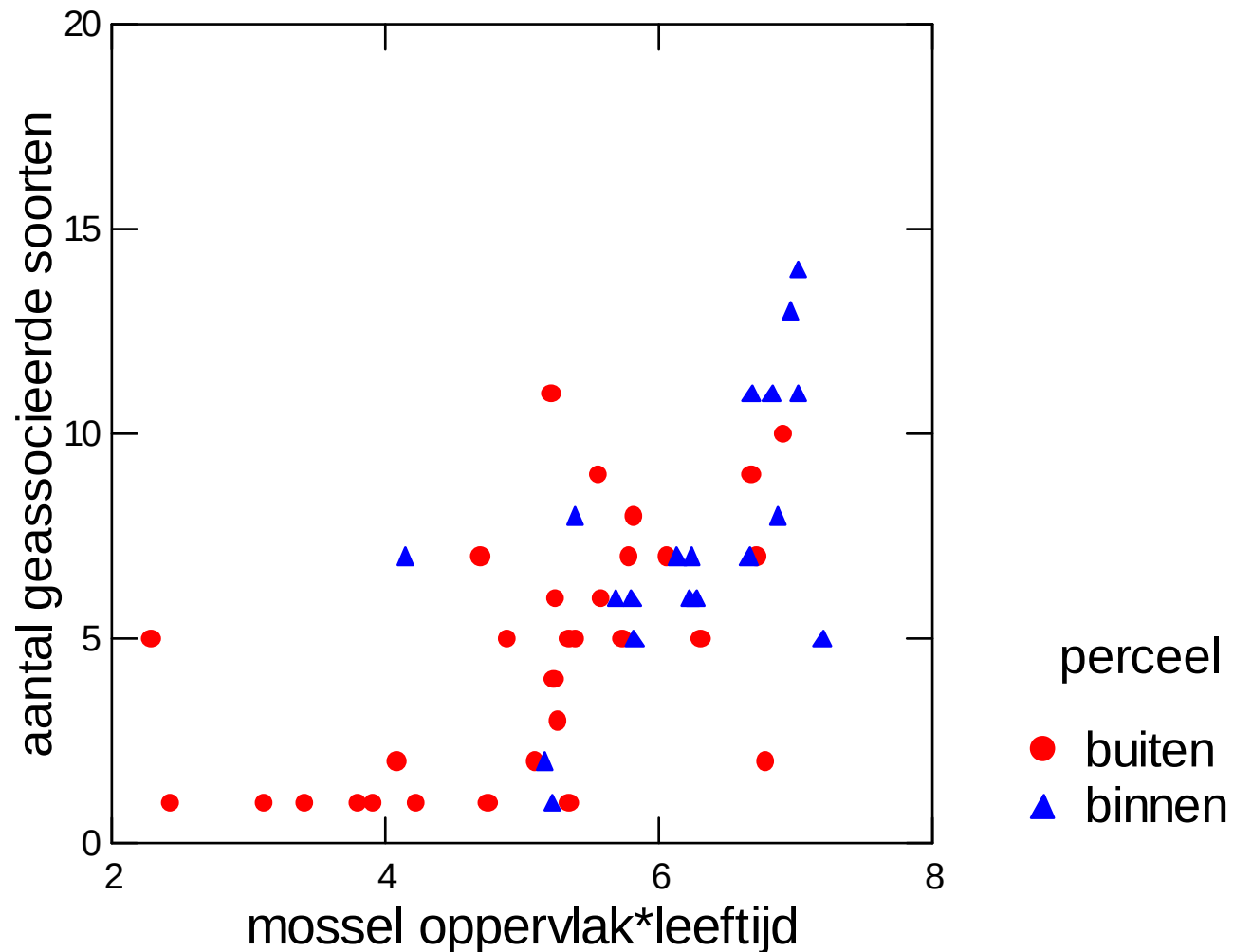
Met mossels geassocieerde soorten



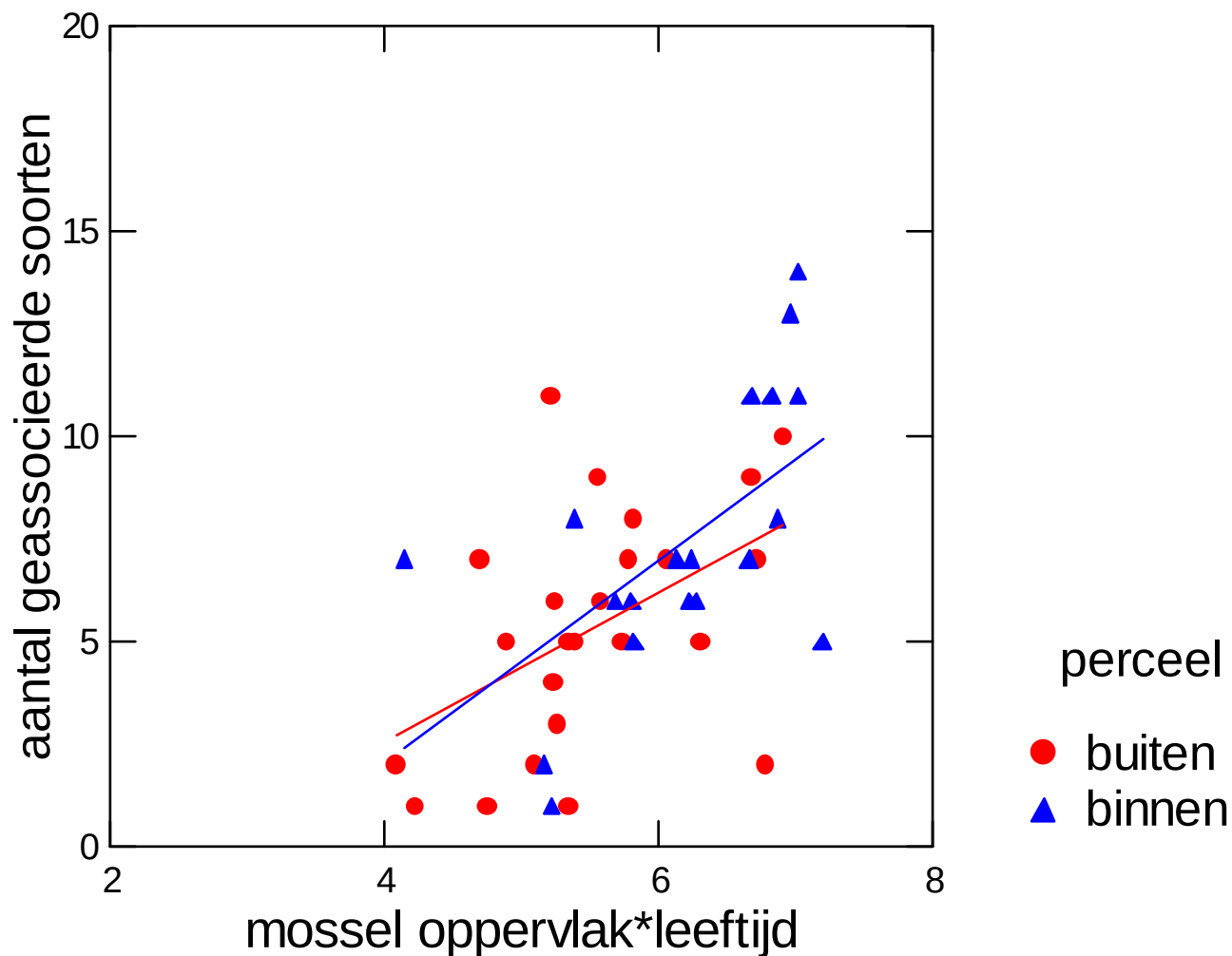
Geassocieerde soorten afhankelijk van oppervlak en leeftijd mosselen



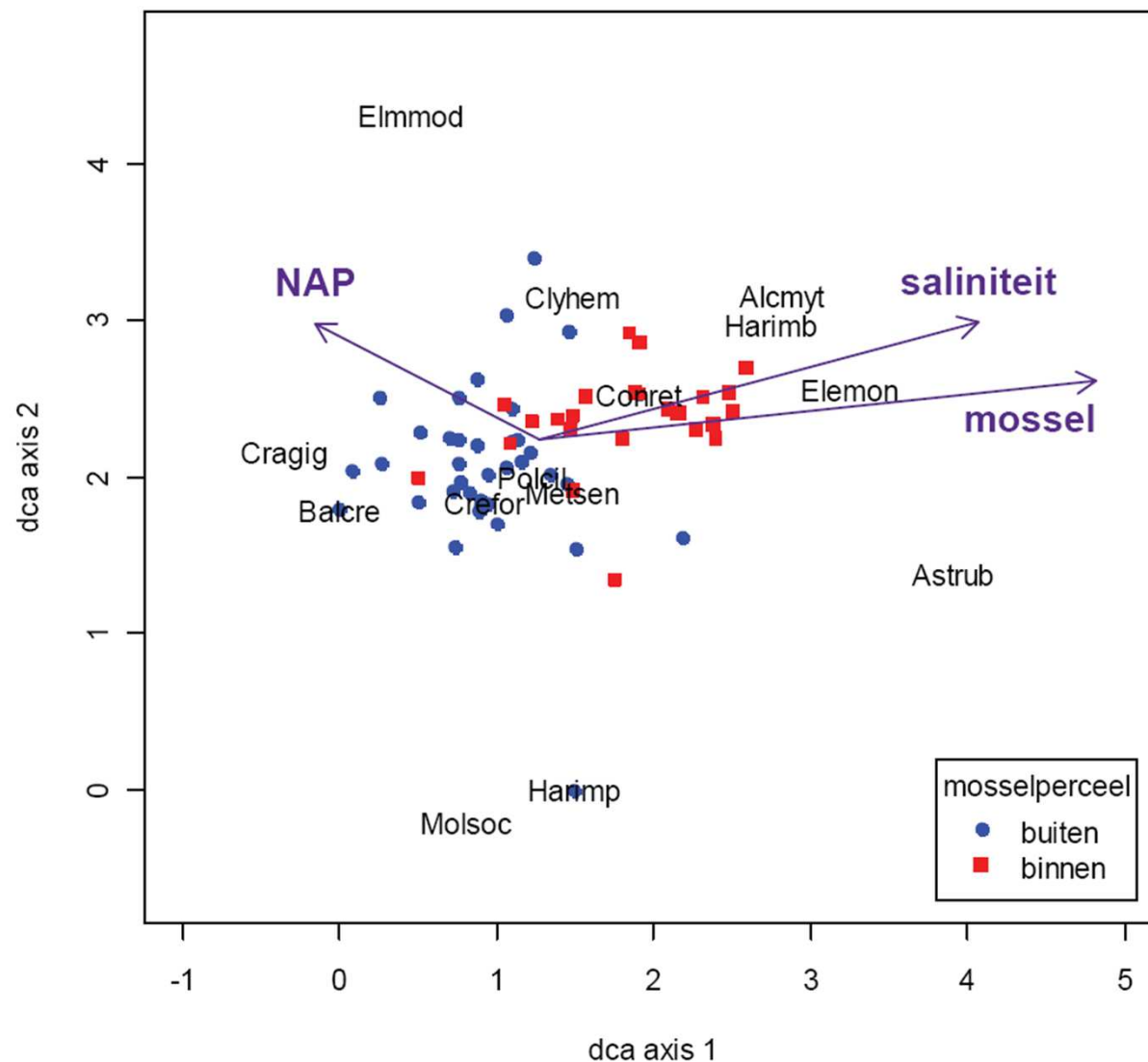
Geassocieerde soorten afhankelijk van oppervlak en leeftijd mosselen minus oester



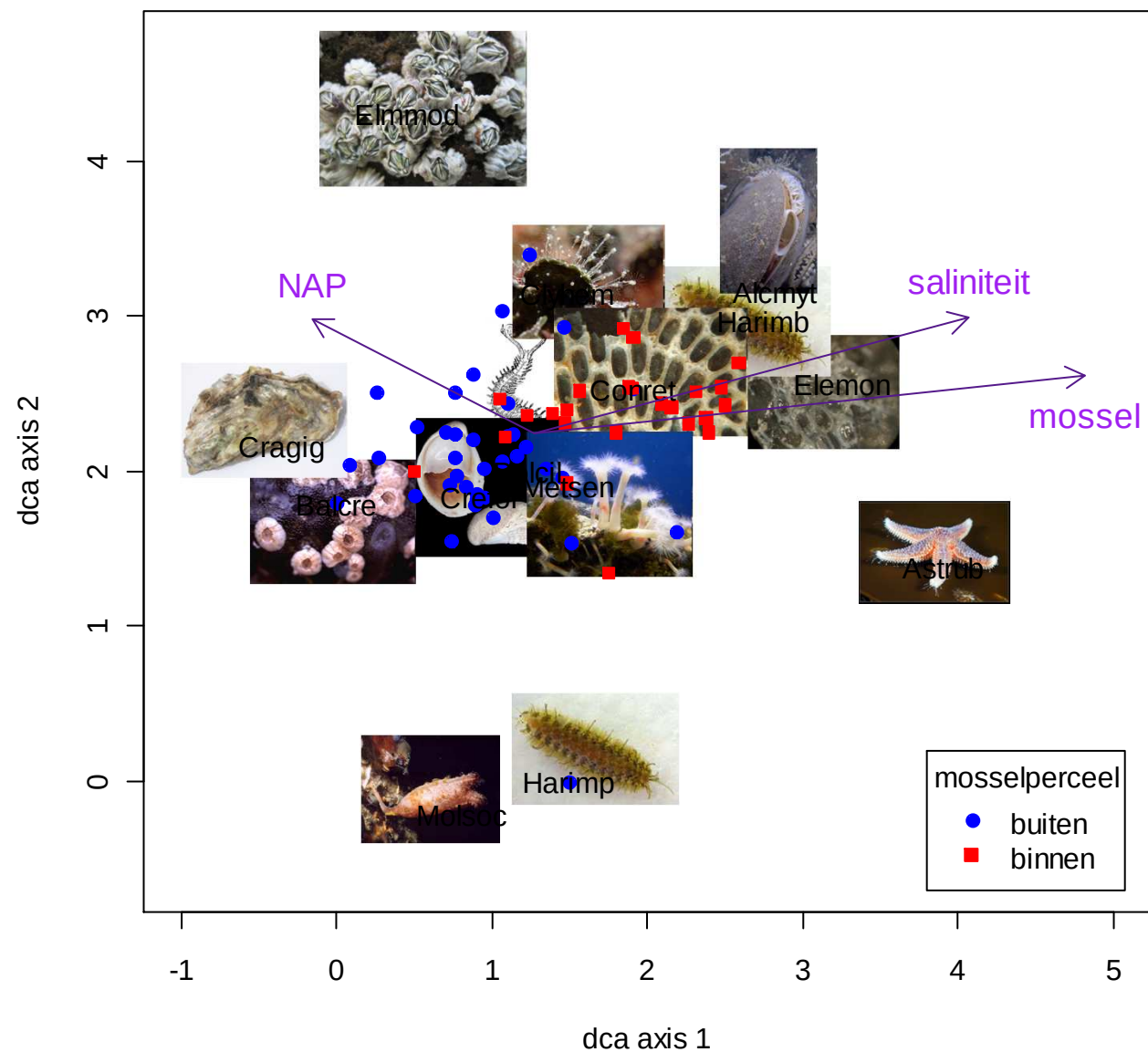
Geassocieerde soorten afhankelijk van oppervlak en leeftijd mosselen minus oester



Samenstelling met mossels geassocieerde soorten binnen en buiten percelen



Soortensamenstelling binnen en buiten percelen





Conclusies

- Macrozoobenthos in de sublitorale westelijke Waddenzee is zeer sterk veranderd sinds 1981/82
 - Invasieve soorten
 - Toename suspensionfeeders afname depositfeeders
- Soortenrijkdom geassocieerd met mossels
 - Weinig verschil binnen en buiten percelen in aantal soorten
 - Wel andere soortensamenstelling binnen en buiten percelen
 - Maar vergelijking is lastig

