Feeding activity and diet composition of round goby (*Neogobius melanostomus*) in the coastal waters of SE Baltic Sea

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Introduction

Round goby (*Neogobius melanostomus*)
Abundance dynamics of round goby in the Lithuanian coastal waters of the Baltic Sea

Monitoring data of the Fisheries Service under the Ministry of Agriculture of the Republic of Lithuania
Role of round goby in the food web of the Baltic Sea coastal ecosystem

Round goby changes invaded ecosystem by reducing abundances of its feeding objects, competing for food resources with native demersal fish and bird species and becoming an important component in the diet of piscivorous fish, birds and mammals.
Study site and sampling
Main prey items of round goby

Saduria entomon
Hediste diversicolor
Amphipoda
Balanus improvisus
Macoma balthica
Cerastoderma lamarcki
Pisces sp.
Mytilus trossulus
Changes of feeding activity of differently sized female and male round gobies during May-October 2012.
Ontogenetic and seasonal dietary changes of the round goby

PERMANOVA results of season effect on the diet composition of differently sized individuals.

<table>
<thead>
<tr>
<th>Size group</th>
<th>Pseudo - F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50 mm</td>
<td>1.137</td>
<td>0.304</td>
</tr>
<tr>
<td>50 - 99 mm</td>
<td>1.132</td>
<td>0.270</td>
</tr>
<tr>
<td>100 - 149 mm</td>
<td>2.457</td>
<td>0.012</td>
</tr>
<tr>
<td>150 - 199 mm</td>
<td>2.145</td>
<td>0.047</td>
</tr>
<tr>
<td>≥200 mm</td>
<td>1.691</td>
<td>0.183</td>
</tr>
</tbody>
</table>
Seasonal dietary changes of the round goby. Spring

Size groups, mm

- 100 - 149
- 150 - 199
- ≥200

Index of Relative Importance, %

- Other prey
- Pisces
- Amphipoda
- Crangon crangon
- Polychaeta
- Balanus improvisus
- Mytilus trossulus
- Macoma balthica

Other prey
Pisces
Amphipoda
Crangon crangon
Polychaeta
Balanus improvisus
Mytilus trossulus
Macoma balthica
Conclusions

- Feeding activity of round goby varied depending on body size, sex and stage of the reproduction period;
- Ontogenetic dietary shift from zooplankton, meiobenthos and amphipods towards mollusks occurred at the size of 100 mm;
- Diet composition of round gobies <100 mm and ≥200 mm was relatively constant, while individuals of the intermediate 100-200 mm length had more variable ration, which changed depending on the season;
Thank you for your attention