

Role of the round goby (*Neogobius melanostomus*) in the food web of the Baltic Sea exposed coastal waters



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The aim of my PhD studies is to determine the impact of invasive fish - the round goby (*Neogobius melanostomus*) on benthic communities and food web in the Lithuanian Baltic Sea coastal waters.



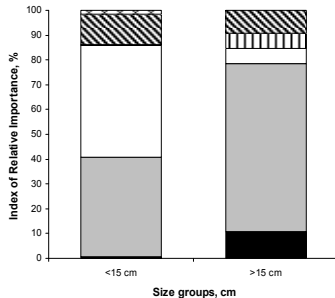
Round goby (*Neogobius melanostomus*)

1. Determine feeding patterns of round goby and its impact on benthic fauna

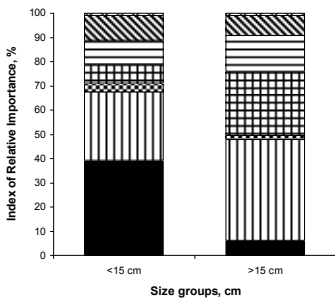
Main methods:

- Sampling and analysis of soft and hard bottom fauna;
- Stomach content analysis;
- Stable isotope analysis.

Diet composition of round goby in heterogenous rocky biotope



Diet composition of round goby in homogenous sandy biotope

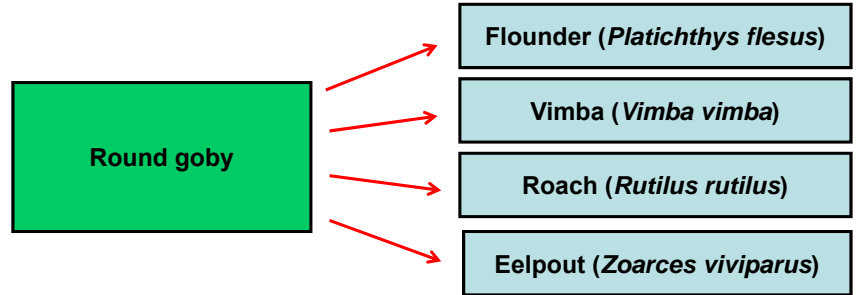


Prey items found in the gut contents of round goby



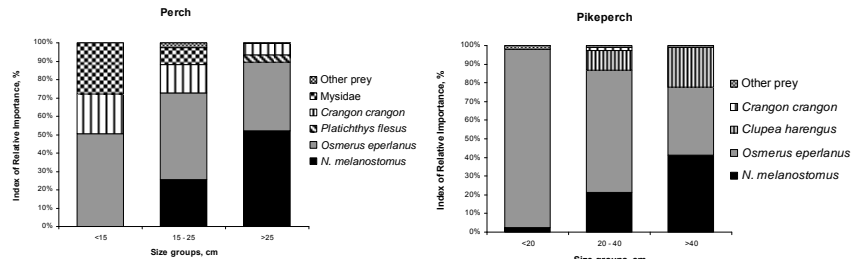
2. Assess competitive trophic relations among round goby and other demersal fish species

Main methods: gut content and stable isotope analysis.

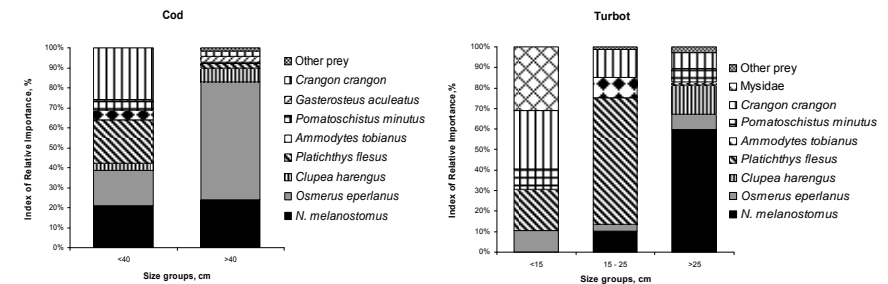
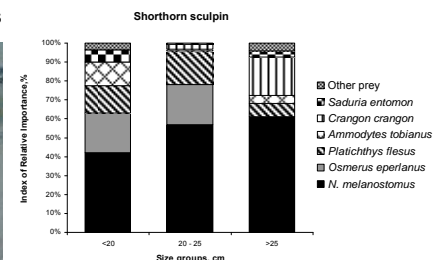
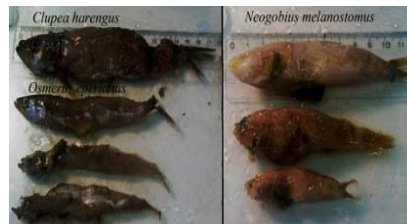


3. Determine relative importance of round goby in the diet of ichthyophagous fish

Main methods: Stomach content and stable isotope analysis.



Main fish prey species of piscivorous predators



4. Evaluate behavioral and trophic interactions between round groups goby and eelpout under experimental conditions

Main method: laboratory experiments.

Abundance of eelpout declined dramatically after expansion of round goby in the Lithuanian coastal waters of the Baltic Sea.

Hypotheses:

- Round gobies out compete eelpouts in food and habitat competition;
- Round gobies prey on small juvenile eelpouts actively reducing their abundance and ability to replenish population with new sexually matured individuals.

