THESIS TITLE	Variation in functional morphology of an aquatic invader
RESEARCH QUESTION	Does morphology of invasive round goby (*Neogobius melanostomus*) differ between invasion events and what does this mean for feeding competitive interactions with native species?
SUPERVISOR	Leo Nagelkerke
LOCATION	ZODIAC building, Wageningen
PERIOD	Any time

SHORT DESCRIPTION

This is an ongoing project, which, in principle, can be started at any time (after some preparation)

Biological invasions are one of the biggest challenges of our time. Due to these human-mediated introductions of alien species, native species are in danger of extirpation and ecosystems could potentially shift to an alternative stable state. Functional feeding characteristics of both invasive and native species are an important factor that determine the interactions between native and alien species.

Within this MSc thesis project we want to find out whether a known invasive fish species, the round goby (*Neogobius melanostomus* or zwartbekgrondel in Dutch), adjusts to the novel environments it encounters. Round goby encounter different food types during their invasion, at varying abundance and with diverse competitors: this could trigger adjustments in their functional feeding traits that allows them to establish at these new locations. We will compare the functional morphology of different populations of round goby to see if they indeed adjust to local conditions, or that their 'normal' generalist feeding morphology is sufficient to allow invasion of a wide range of ecosystems. The outcomes of this study will eventually aid risk assessment and other management tools of biological invasions.

You will perform functional morphological measurements on round gobies from populations across Europe and North-America, and compare the populations using existing statistical methods. Furthermore, you will combine these measurements with a phylogeny to determine whether a genetic basis exists behind found differences in feeding traits. We strive to get the final results published in a scientific journal.

RESEARCH AIM/ SCOPE

The overall research aim of this project is to find out whether morphological adaptation to local circumstances can be instrumental in the invasion of alien species. This knowledge might be used for the risk assessment of potential new invaders.

REQUIREMENTS

- Interest in functional morphology, fish biology and/or biological invasions.
- Steady hand and precise working attitude
- Affinity with quantitative methods (R, or similar)

OTHER INFORMATION

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