

Recent use of molecular methods to revisit taxonomically problematic diatom species revealed severe limitations of morphological species concept. Characterization of diatom species which was based solely on the morphology of their frustules often generated too broad species boundaries which inevitably lead to wrong conclusions about their ecology and distribution. Widespread opinion that many diatom species are cosmopolitan generalists resulted in a theory that dispersal of diatoms is not limited by geographical distance. However, a number of recent studies showed that dispersal of diatoms is governed by the same rules which matter for macroorganisms.

Proposed master thesis addresses the topic of diversity and dispersal in diatom species complex *Frustulia rhomboides* sensu lato in Europe and New Zealand. Results suggest that: (1) although revealed molecular variability in this complex shows clear ecological and biogeographical signal, it is not correlated in morphology. This is another support to general need for adoption of different species concept in diatoms.

(2) A considerably uneven ratio in species diversity of genus *Frustulia* found in ecological similar habitats in Europe and New Zealand supports the idea that diatom dispersal is limited and stressed the need for studies dealing with biogeography.