

Introduction of Ponto-Caspian crustaceans for fish food enrichment purposes led to local species extinction and reduced trophic efficiency in a central European lake

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1 BACKGROUND

- **Dusia** – large, deep, mesotrophic lake which previously contained 3 “glacial relict” and 2 other peracarid crustacean species
- To improve fish food base during the 1960s the lake was stocked with 5 Ponto-Caspian peracarid species

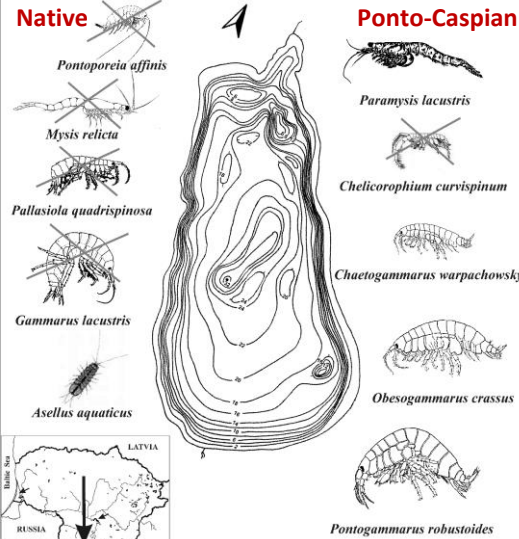
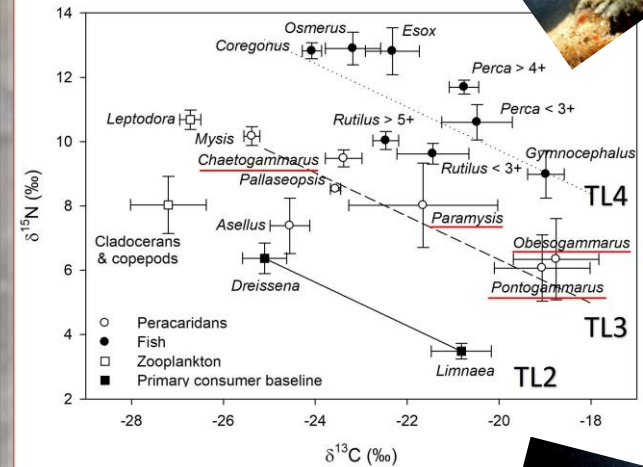
2 METHODS

- Conventional hydrobiological studies
- Stable isotope analysis of contemporary and museum material

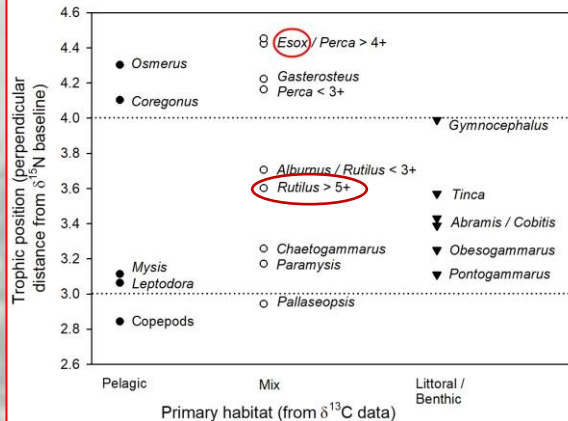
3 KEY FINDINGS

- Currently all three “glacial relict” crustacean species in Lake Dusia are most likely extinct
- Ponto-Caspian peracarid crustaceans are readily consumed by fish
- Comparison of archived samples of fish scales and baseline animals against recent SI results suggest the food chain length was lengthened by the introductions of non-native species
- This is mostly likely driven by the voracious and predatory nature of introduced species, which themselves feed on other crustaceans

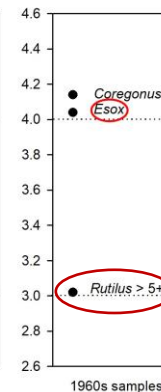
Current Lake Dusia food web



Current trophic position



Archival samples (1960s)



4 TAKE-AWAY

- Introduction of Ponto-Caspian species contributed to the extinction of protected “glacial relict” crustaceans
- Introduction of Ponto-Caspian fodder crustaceans is ill advised, as they are likely to increase food chain length and decrease energy transfer efficiency

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