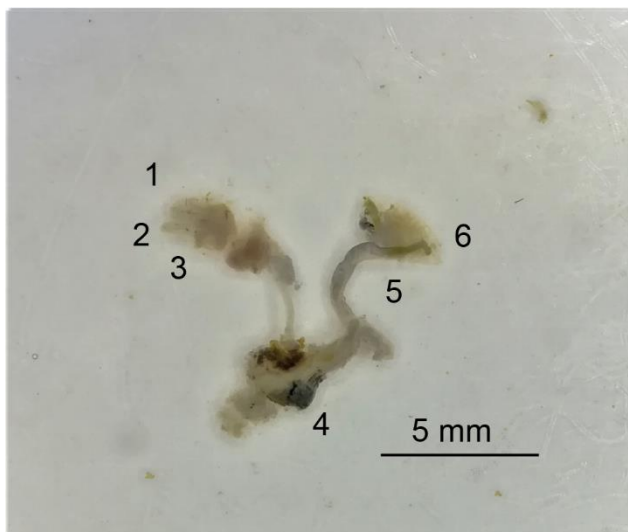


- S1:** Lake Schmaler
Luzin, north end
- S2:** Lake Schmaler
Luzin, south end
- S3:** Carwitzer Lake
- S5:** Ludwigsburg,
Greifswalder
Bodden
- S6:** Hiddensee,
Vitter Bodden

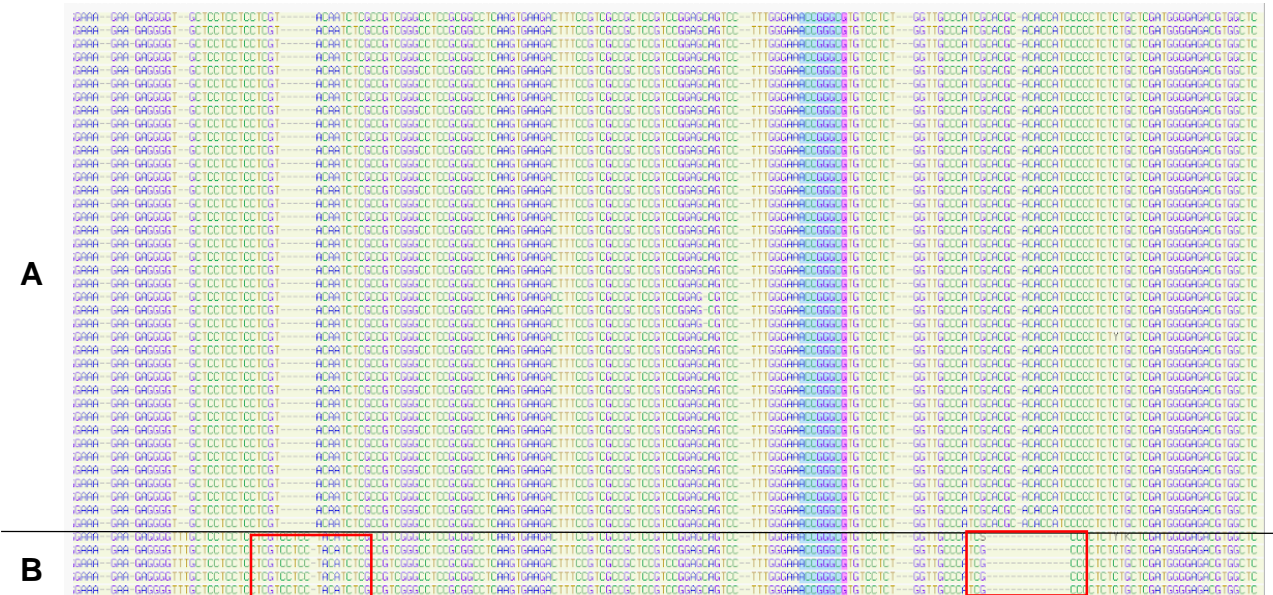
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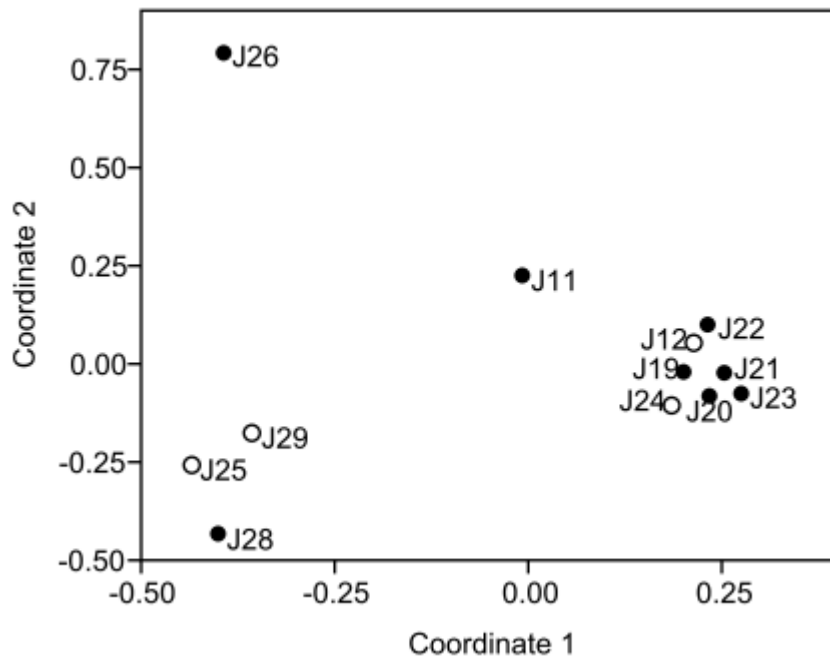
Supplementary Figure 1. Sampling locations of *Theodoxus fluviatilis* in Germany.



Supplementary Figure 2. Morpho-anatomy of the digestive tract of *Theodoxus fluviatilis* and the different gastrointestinal compartments: anterior tract (1 - buccal mass, 2 - pharynx, 3 - oesophagus, 4 - stomach) and posterior tract (5 - intestine, 6 - anus).



Supplementary Figure 3. Sequence motifs (red frame) of *Theodoxus fluviatilis* ITS2 sequences. (A) main phylogenetic lineage (B) four sequences from Lake Schmalzer Luzin (south).



Supplementary Figure 4. Principle Coordinate Analysis (PCoA) of *Theodoxus fluviatilis* microbiome samples from Lake Schmalzer Luzin. Samples from the potential subpopulation are empty dots other are filled dots (see Figure 2).

Supplementary Table 1. Preparation of artificial seawater (ASW).

| Artificial water salinity for transfer steps | Amount of aquarium salt in g per 10 L of artificial water |
|---|--|
| Salinity 0.5 | 5 |
| Salinity 2.5 | 25 |
| Salinity 6 | 60 |
| Salinity 8 | 80 |
| Salinity 12 | 120 |
| Salinity 16 | 160 |
| Salinity 18 | 180 |
| Salinity 22 | 220 |
| Salinity 28 | 280 |