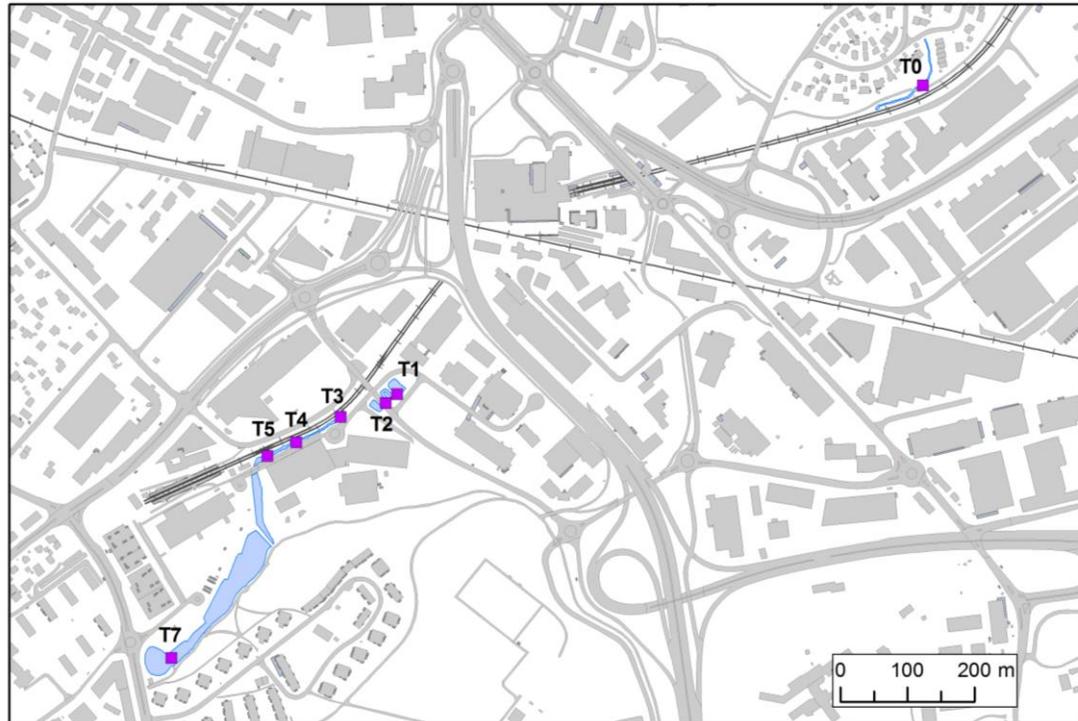


Drifting along: Initial colonisation by macroinvertebrates of a newly deculverted stream in an urbanised environment



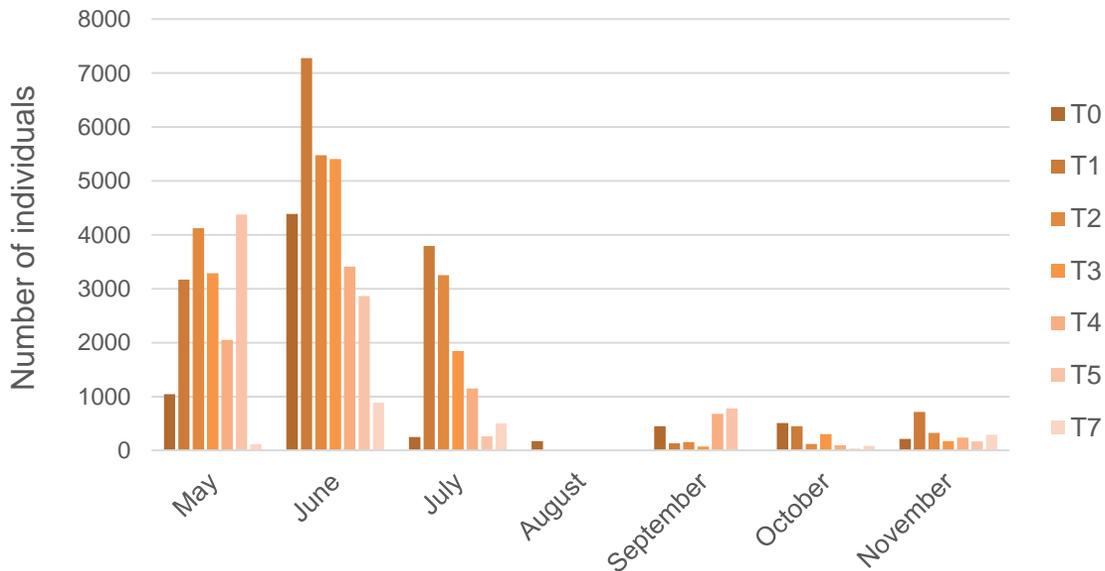
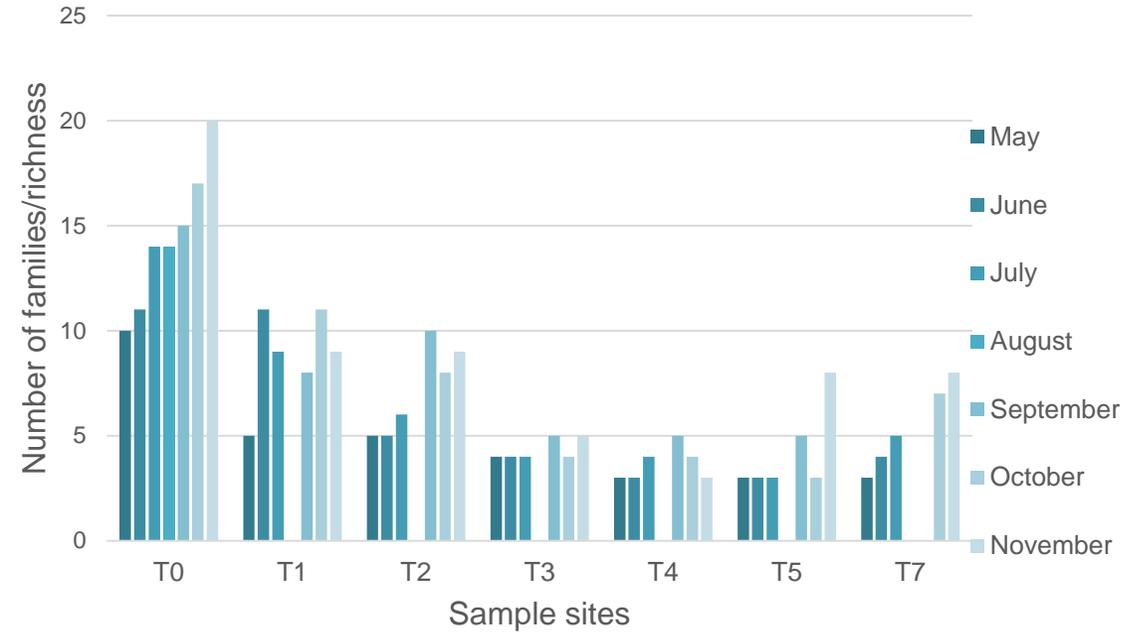
Image credit: Norconsult

Introduction



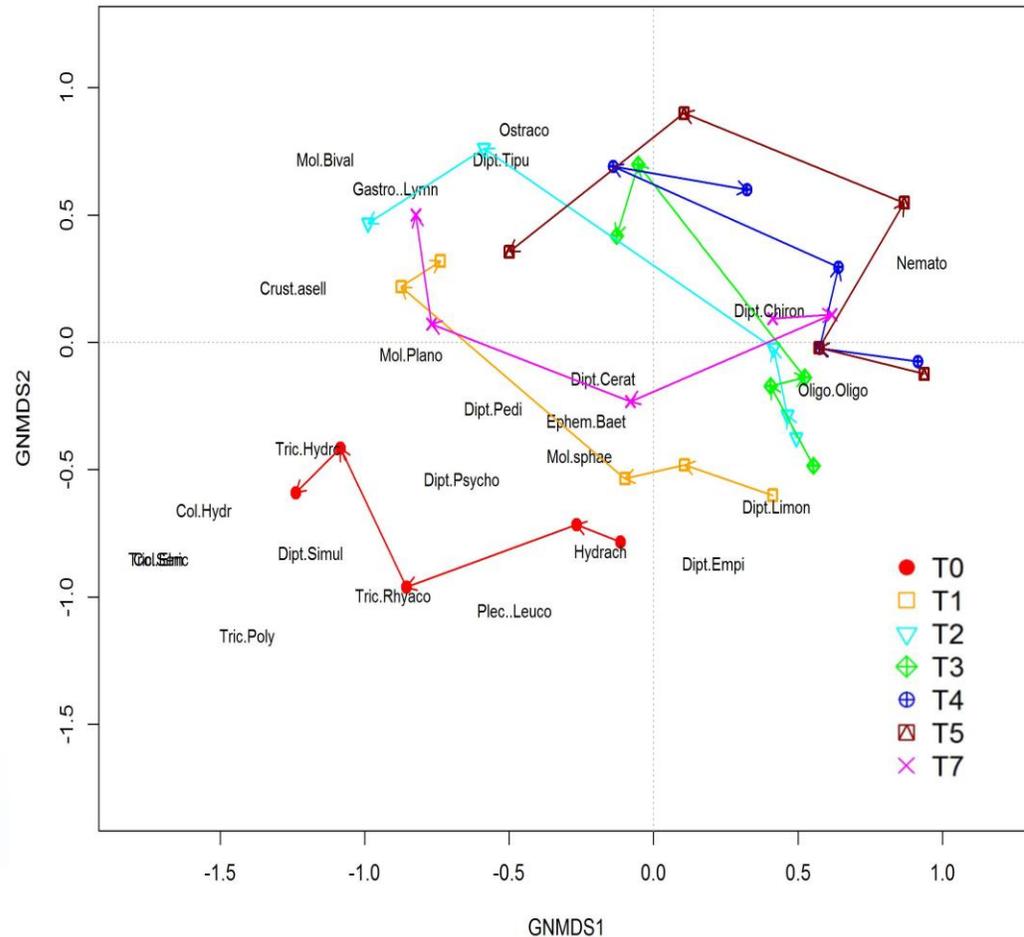
- A previously culverted section of Hovinbekken has recently been restored as a natural water purification facility.
- Little is known how aquatic invertebrates may develop in such a newly created ecosystem.
- To determine how macroinvertebrates may react in the initial year following restoration, one upstream reference (T0) and six restored sites (T1 – T7) were sampled monthly in 2016, May – Nov.
- Dry period in Aug – Sept, due to maintenance work gave the opportunity to test how flow interruptions may affect macroinvertebrates.
- Samples were collected using a Surber sampler.

Key results



- All sites showed increased richness. Richness increased most at the upper restored sites and at the reference site.
- All families found in the restored reach were found at the reference site.
- Families belonging to the Diptera order contributed most to diversity in the restored reach.
- Total number of individuals was generally highest at the upper two restored sites and populations generally increased until June/July, then dropped significantly.
- *Chironomidae* and Oligochaeta contributed most to number of individuals.

Key results



- NMDs ordination shows that the reference site had a different taxa assemblage compared to the restored reach.
- Ordination shows that sites T1 and T2 (closest to T0), are the sites most closely resembling the reference site.
- ANOVA models confirmed that sites T1 and T2 are sites most closely resembling T0.



Discussion

- Appears initial colonisation occurred rapidly, and predominantly via drift from the upstream reference site.
- The reference site appears to be the only source of colonists. The local species pool seems to be important for the initial colonisation of newly created streambeds.
- Barriers to colonisation may reduce the rate of colonisation and richness that may be found in the restored reach, and are thus important factors to consider.
- The dry period (Aug-Sept) appears not to have severely effected biodiversity, possibly due to the pools and wetlands being used as refuges.



Image credit: phys.org