

Littorella uniflora on the upper shore of Lake Zurich

- Human impact on the ecology and distribution of an endangered species

By Laura Bauer – representing Switzerland



The aquatic plant *Littorella uniflora* (European shoreweed) is very sensitive to changes in the aquatic ecosystem of lakes.

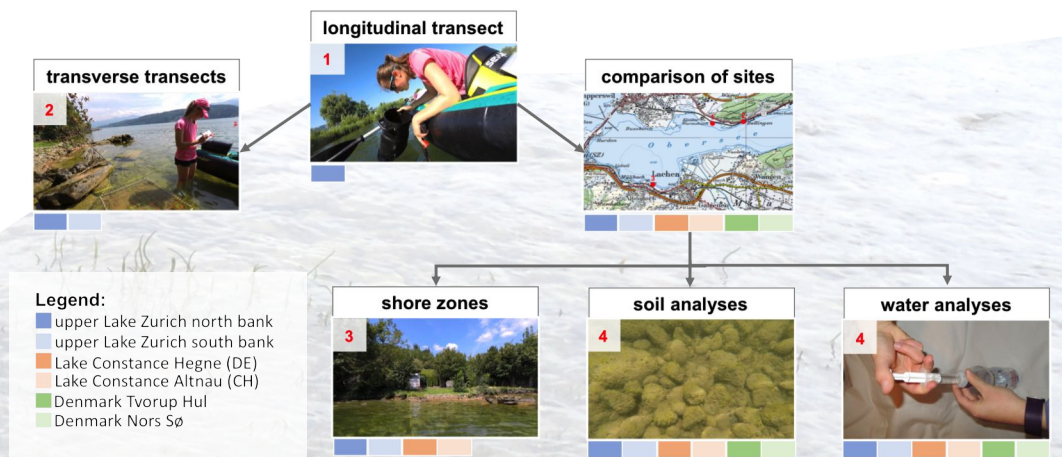
With my project I aimed to characterise the ecological conditions under which the species grows in the upper Lake Zurich and analyse the influence of human interaction on its survival. It serves as an example of the complexity and fragility of this type of water system.

Littorella uniflora (L.) Asch. is able to grow both on land and under water.

This gives the plant an ecological advantage over more dominant, higher-growing plants in the shore area of nutrient-poor lakes.

My project includes a broad spectrum of different investigations.

The longitudinal transect on the north bank of the upper Lake Zurich led to the discovery of a new population of *Littorella uniflora* (Identified North Bank Population = INBP).



INBP (north bank)



Altendorf (south bank)



Hegne (Lake Constance)



Altnau (Lake Constance)



Compared sites at the upper Lake Zurich and Lake Constance.

What are the main findings?

- The populations on the upper Lake Zurich stay submerged during the year due to insufficient water level fluctuations. This has a negative effect on the survival of *L. u.* **Its ecological advantage is eliminated and it can not reproduce via seeds.**
- Low diversity may have a positive impact on the populations as **competitive pressure is reduced.**
- Soil composition has no obvious influence on the plants at the sites studied. **The low nutrient content of the water is compatible for *L. u.* to grow.**

Conclusion

In addition to natural factors, the populations of *L. u.* are also influenced by the consequences of human intervention. The pruning of reed belts decreases competition and creates more space for *L. u.* to grow. **Control over water level fluctuations in Lake Zurich have a negative affect on the reproduction cycle of *L. u.***

Littorella uniflora itself may not seem important at first glance, but it is part of our **biodiversity** and serves as an example for how impactful and **critical** the intervention of human development can be on nature.

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