



36th Congress of the International Society of Limnology
7 – 10 August 2022 | www.sil2022.org



SIL2022 – Meeting Drausy Technology:

Oxygenation of the soil environment of surface waters — experiences and potentials of linear micro-invasive aeration in the course of climate change

Meet Cordula Jäger – Managing Director of Drausy GmbH – a specialist in the remediation of water bodies by creating aerobic surface conditions at the bottom of the water body.



Treatment of artificial stagnant ponds – can air remediate a water body?



Lakes, rivers, ponds and wetlands are important habitats in their own right - a long-term and sustainable management is presented under the aspects of water conservation, water maintenance, protection of biotopes, enrichment of the quality of life for humans and reduction of climate-damaging gases.

Most of the artificially created water bodies are unable to regenerate naturally - they produce organic sludge, silting up, and becoming a nuisance for residents due to their unpleasant odors and unsightliness. In addition, climate change is causing an increase in methane emissions.

Low water levels, high temperatures, inputs from flora, fauna and infrastructure place a considerable burden on urban still waters: the consequences are silting up, siltation, algae growth, fish mortality and odor nuisance.

By changing the milieu at the bottom through linear aeration, sludge and the resulting gases are broken down and avoided. A reactivation of the biocoenosis can be observed on the aerobic bottom of the water body.

In our biological treatment, microorganisms break down the pollutants in the water - Aeration supplies oxygen to the bacteria, which is needed to treat and stabilize the water.



Treatment of artificial stagnant ponds – can air remediate a water body?



Method:

The linear micro-invasive aeration system Drausy® Professional provides a remedy - it is able to discharge the smallest discharge quantities of liquids and gases over long distances **with only one feed**. As a result, the ambient environment becomes oxygen-rich and biological processes are triggered:

The Drausy® linear aeration system works on the bottom of a lake. It can be recognized by the light line of air bubbles on the surface.

When aerating with the Drausy® system, the natural self-purification effect of the water body is supported by oxygen input to achieve a decomposition of the organic substances in the sludge and free water.





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Area-wide microinvasive aeration along the entire stream surface transforms the environment from low-oxygen to high-oxygen.

Results:

- Degradation of organic matter
- Permanent binding of pollutants and nutrients to the aerated sediment
- Avoidance of algae and cyanobacteria
- Enrichment of waterbody with oxygen
- Prevention of harmful greenhouse gases





Treatment of artificial stagnant ponds— **SHOULD WE** remediate a water body?



To what extent these types of surface waters can be regarded as greenhouse gas sinks or greenhouse gas emitters and to what extent treatment promotes water ecology through oxygen input or whether there are aspects that speak against treatment.

Yes or no: biological treatment or natural siltation of a water body?

Yes or no: Are biotopes in urban stillwaters worth protecting?

Yes or no: Quantification of greenhouse gas emissions from artificial surface waters and assignation to the CO₂ balance?



Treatment of artificial stagnant ponds— **SHOULD WE** remediate a water body?



Yes or no: biological treatment or natural siltation of a water body?

Pro treatment:

- Healthy environment for species
- Keep waterbody as climate factor in urban areas
- Keep and care about beautiful landscape

Against treatment:

- Change urban environment with a completely different approach: integrate flood areas and water basins along lake chains and rivers



Treatment of artificial stagnant ponds— **SHOULD WE** remediate a water body?



Yes or no: Are biotopes of manmade stillwaters worth protecting? Still valuable?

Pro biotopes:

- Biocenosis develops with time – the speed of climate change and eutrophication effects life under water – if minimal effort can keep the established natural environment alive and bring back waterbalance, treatment is seen as positive

Against established biotopes:

- Invasive species that change biotopes by natural processes already harm established biotopes – the natural change of climate cannot be stopped anyway



Treatment of artificial stagnant ponds— **SHOULD WE** remediate a water body?



Yes or no: QuantiGreenhouse gas emissions from artificial surface waters – should they count into the footprint?

Pro avoidance of methane production:

- methane emission from still waters accounts for a significant part of greenhouse gas production on earth - emitted gas amounts are already measured and quantified - methods to prevent climate gas emission should be credited to the CO2 footprint



Treatment of artificial stagnant ponds— **SHOULD WE** remediate a water body?



Yes or no: Quantification of greenhouse gas emissions from artificial surface waters and assignation to the CO₂ balance?

Against avoidance of methane production:

- the amount of pond sediment removed plays a relevant economic role in pond management - especially the organic-containing mass that produces gases. Only when the prevention of greenhouse gas emissions is rewarded, the issue is managed and implemented in a market economy.



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Thank you for your participation! –
Contact us for further discussion!

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