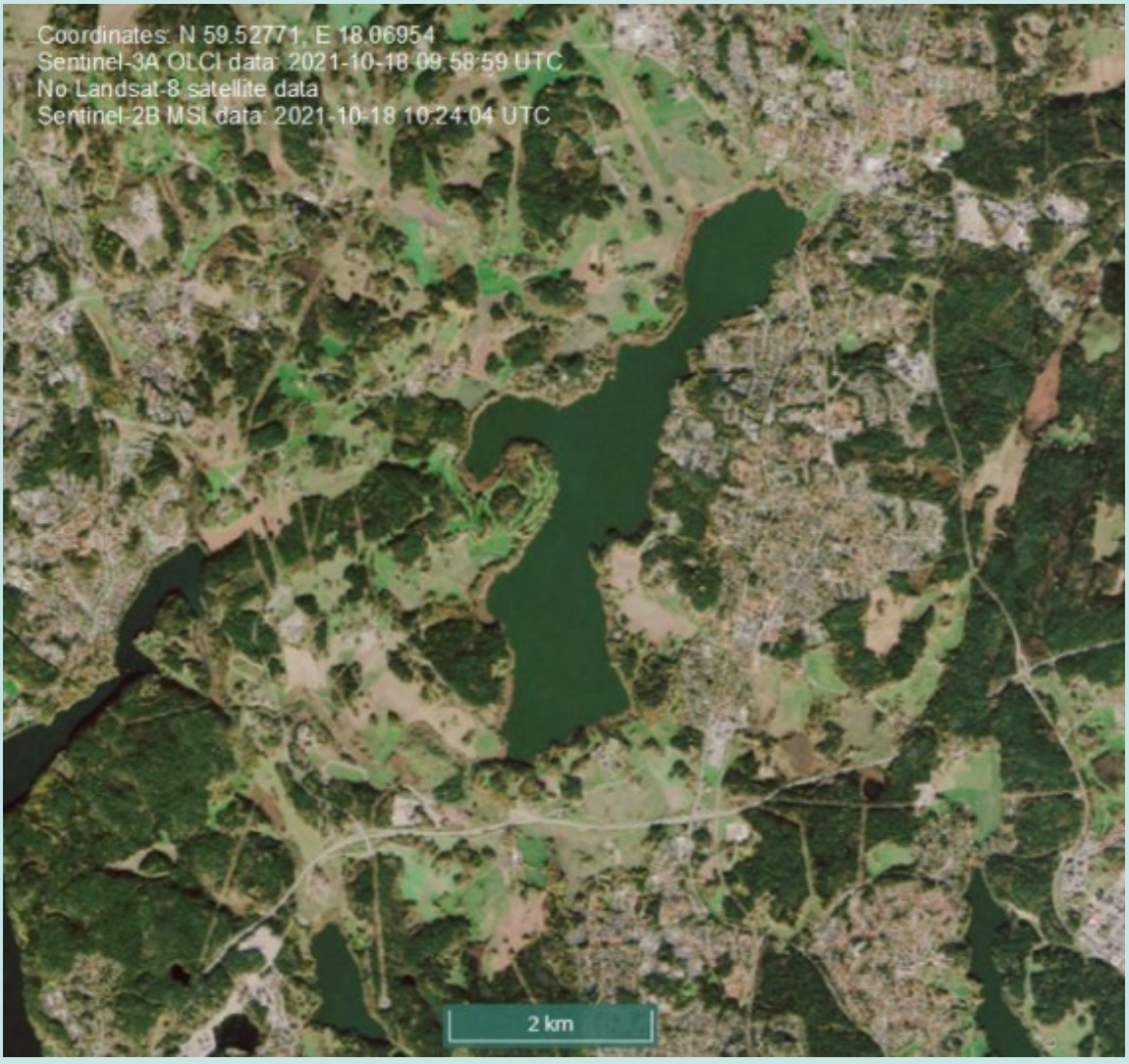
BSAP Fund

Low flow dredging in Kyrkviken, Lake Vallentuna 2021



Vallentuna and Täby municipality

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Executive summary of the project

Lake Vallentuna is situated 20 km north of Stockholm, in Täby and Vallentuna municipalities. It is a shallow eutrophicated lake, with a maximum depth of 5,5 meter and is affected of over fertilization partly originating from the internal nutrient load in the sediment. During the autumn of 2021, a project with low flow dreading was conducted in north part of Lake Vallentuna, Kyrkviken. The project aimed to evaluate the autonomous system for low flow dredging that the municipalities bought 2020. The systems reliability is deemed good but the dredging site was too shallow. The depth was barely one meter which resulted in a very small amount of collected phosphorus, only 0,79 kilograms were retrieved and the internal leakage of phosphorus decreased by 1,5 kg. However, this was achieved during the test drive of the system which took about 6,5 hours. Due to the shallow waters the amount of accessible sediment was lesser than estimated which caused the sediment to be depleted. After that, the municipalities decided to continue the project to evaluate the systems reliability over time. In total, the system was active in 389 hours and should have retrieved 48 kg of phosphorus. A constructions improvement has been developed to enable the system to operate in shallow waters if it is desirable in the future.

Vallentuna and Täby municipality funds this project with the support of Baltic Sea Action Plan Fund, which is managed by Nefco and the Nordic Investment Bank.

The report was written by the project leader, Eric Tell, Nordic Nutrients AB, on behalf of Vallentuna municipality and Täby municipality. Frida Hellblom (Vallentuna) and Tomas Ragnell (Täby) have review the text and are equally responsible for the content