

Inventory and evaluation of data for the project to keep Hauser Kaibling snowmaking ponds biologically free of algae

- People involved in the project:

Daniel Bader - Project Manager Bader Group

Environmental analyses Baumgartner & Partner GmbH & Co KG - Mag. Baumgartner, Dr. Hörner

igbk engineering consortium - DI BSc Stefan Ribitsch

Herbert Landl - Operations Manager, Hauser Kaibling Beschneigungsteiche, Seilbahn und Liftges.m.b.H.

- Info on the Hauser Kaibling ponds:

1st inspection of the ponds: **13.05.2019** incl. dive and video recording

In the course of the surveys it was also found that mussels and snails are also present in high numbers.



The characteristics of the 3 ponds were submitted by Mr. DI Ribitsch Stefan on **02.07.2019**:

T1: 70,000m³, water depth 13m

T2: 45,000m³, water depth 10m

T3: 64,000m³, water depth 11m

There has already been contact with other operators. Depending on the description of the application, these operators are willing to have tests carried out in their systems.

The Schwarze Lacke, the Ennsling pond and the Kaiblingalm reservoir were inspected.

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Regarding the ponds, we got access for testing after the site visit. For 3 snowmaking ponds at Hauser Kaibling and also possibly a pond at the golf course in Schladming.

After contacting the company Umweltanalysen Baumgartner, we found out from their documents with Ms Baumgartner and Dr Hörner that the algae formation in the ponds mainly consists of stoneworts, green algae and the water plant milfoil.

These are different plants, but they all need phosphorus to thrive.

Our task is to keep the phosphorus content below 0.03 mg/litre through a variety of environmental measures, so that no growth can progress.

We needed 4 pieces of the LiveGreen algae prevention system information carriers aligned in the north-south axis for each of the 3 irrigation ponds.

15.07.2019 Placement of the information carriers in the ponds, 4 pieces per pond aligned in the north-south axis.



18.07.2019.: Fish deployment in the pond (Schwarze Lacke pond)



Control visit on **15.10.2019** with the diver and operational staff.

Schwarze Lacke: Lake altitude 1200 m



The diver did not see any signs of algae in the pond at all.

The water temperature was 9° C and we took 2 of the information carriers previously deployed for examination. The outside of the information carriers were slightly slimy with segment.

Ennsling-Teich: Lake altitude 1700 m



The diver saw the same algae populations and scale as from the video recording of the last dive on 15/07/2019.

Polyculture stocking:

The operators found the introduction of polyculture stocking into the Schwarze Lacke pond very good and you can see the success of these fish not only eating the algae but also pulling it off. The algae then float up, float on the surface and have to be skimmed off by the staff. The decimation of snails and mussels was also evident. With this polyculture stocking, reproduction is not possible in such cold waters. The special composition of the individual fish is called polyculture stocking.

May 2021 - Release of all three snowmaking ponds on Hauser Kaibling and subsequent inspection to check for the presence of algae, mussels and snails:

No algae were visible in any of the ponds. Neither in those with polyculture stocking, nor in those where we have anchored our information carriers in the north-south direction.

In the ponds with polyculture stocking, it was also observed that there was a strong decimation of mussels and snails.

Inspection of the ponds with Mr Bader, Mr Ribitsch and Mr Landl

Polyculture stocking was carried out on 25.06.2021 in the Ennsling Pond and in the Schwarze Lacke.