

Competence Center for Climate Change Digital Twin for Earth Forecasts and Societal Redressement: DTECLIMATE"

## SP2: ACT4D-EUTROPHICATION MONITORING OF LAKE SIUTGHIOL - BOAT TRIP FOR SAMPLING PRELEVATION



The researchers conducted a field campaign on the lake to gather 30 data points for validating an AI algorithm. The morning began with foggy, cool, and humid conditions, but visibility improved by around 8 a.m., while the heat and humidity persisted throughout the day.

Sampling locations were distributed across the entire lake to ensure full surface coverage. Although the initial plan included collecting water samples at multiple depths (surface, 1.5 m, and 4 m), measurements were ultimately taken at the surface and at 3 m.

In addition, 10 FPK/ZPK samples were collected using a vertical net across a 4-meter water column, ensuring representative coverage of the lake.

Observations showed greenish water in open areas, while zones with wave activity appeared noticeably clearer.



**Point 1**

Surface

Water temperature 28.51 °C, Air temperature 28.40 °C,  
pH 9.31,  
conductivity 2145 µS/cm, dissolved O<sub>2</sub> 11.37 mg/l.  
4 m

Water temperature 27.67 °C, pH 9.16,  
conductivity 2182 µS/cm, dissolved O<sub>2</sub> 4.5 mg/l.

**Point 2**

Surface

Water temperature 28.7 °C, Air temperature 28.20 °C,  
pH 9.16,  
conductivity 2158 µS/cm, dissolved O<sub>2</sub> 11.29 mg/l.  
4 m

Water temperature 26.74 °C, pH 9.316,  
conductivity 2056 µS/cm, dissolved O<sub>2</sub> 4.15 mg/l.

**Point 3 (FPK/ZPK)**

Surface

Water temperature 28.18 °C, Air temperature 29.10 °C,  
pH 9.34,  
conductivity 2116 µS/cm, dissolved O<sub>2</sub> 10.71 mg/l.  
4 m

Water temperature 26.74 °C, pH 9.316,  
conductivity 2056 µS/cm, dissolved O<sub>2</sub> 4.15 mg/l.

**Point 4**

Surface

Water temp. 29 °C, air temp. 28.9 °C, pH 9.37,  
conductivity 2112 µS/cm, dissolved O<sub>2</sub> 11.49 mg/L.  
3 m

Water T 27.12 °C, pH 9.12,  
conductivity 2071 µS/cm, dissolved O<sub>2</sub> 2.14 mg/l.

**Point 5 (FPK/ZPK)**

Surface

Water temperature 28.8 °C, Air temperature  
28.10 °C, pH 9.34,  
conductivity 2110 µS/cm, dissolved O<sub>2</sub> 11.83 mg/l.  
3 m

Water temperature 26.73 °C, pH 9.12,  
conductivity 2125 µS/cm, dissolved O<sub>2</sub> 1.80 mg/l.

**Point 6**

Surface

Water temperature 29.02 °C, Air temperature  
38.80 °C, pH 9.16,  
conductivity 1808 µS/cm, dissolved O<sub>2</sub> 12.14 mg/l.  
4 m

Water temperature 26.28 °C, pH 9.12,  
conductivity 2072 µS/cm, dissolved O<sub>2</sub> 0.47 mg/l  
(this is not a mistake; this was indeed the value)



**Point 7 (FPK/ZPK)**

Surface

Water temperature 29.06 °C, Air temperature 28.60 °C, pH 9.30,  
conductivity 2137 µS/cm, dissolved O<sub>2</sub> 11.82 mg/l.  
3 m

Water temperature 26.69 °C, pH 9.16,  
conductivity 1959 µS/cm, dissolved O<sub>2</sub> 2.85 mg/l.

**Point 8**

Surface

Water temp. 29.04 °C, Air temp. 29.20 °C, pH 9.33  
conductivity 2031 µS/cm, dissolved O<sub>2</sub> 11.99 mg/l.  
4 m

Water temperature 26.33 °C, pH 9.03,  
conductivity 2102 µS/cm, dissolved O<sub>2</sub> 1.50 mg/l.

**Point 9**

Surface

Water temperature 28.86 °C, Air temperature 29.80 °C, pH 9.25  
conductivity 2012 µS/cm, dissolved O<sub>2</sub> 11.48 mg/l.  
4 m (loaded)

Water temperature 26.44 °C, pH 9.16,  
conductivity 2107 µS/cm, dissolved O<sub>2</sub> 3.91 mg/l.

**Point 10 (FPK/ZPK)**

Surface

Water temperature 32.3 °C, air temperature 28.1 °C,  
pH 9.34  
conductivity 1910 µS/cm, dissolved oxygen 11.8 mg/L.  
4 m

Water temperature 26.16 °C, pH 9.07  
conductivity 2102 µS/cm, dissolved O<sub>2</sub> 1.24 mg/l.

**Point 11**

Surface

Water temperature 29.10 °C, Air temperature 27.80 °C, pH 9.35  
conductivity 2110 µS/cm, dissolved O<sub>2</sub> 12.33 mg/l.  
4 m

Water temperature 26.91 °C, pH 9.21,  
conductivity 2092 µS/cm, dissolved O<sub>2</sub> 6.49 mg/l.

**Point 12**

Surface

Water temperature 9.06 °C, Air temperature 28 °C, pH 9.34  
conductivity 2169 µS/cm, dissolved O<sub>2</sub> 14.24 mg/l.  
4 m

Water temperature 27.48 °C, pH 9.25  
conductivity 2097 µS/cm, dissolved O<sub>2</sub> 6.25 mg/l.

**Point 13**

Water temperature 28.59 °C, air temperature 28.90 °C, pH 9.25  
conductivity 2126 µS/cm, dissolved oxygen 11.78 mg/L.

3 m

Water temp. 26.66 °C, pH 9.21  
conductivity 2061 µS/cm, dissolved O<sub>2</sub> 5.80 mg/l.

**Point 14 (FPK/ZPK)**

Surface

Water temperature 28.47 °C, Air temperature 31.10 °C, pH 9.25  
conductivity 1954 µS/cm, dissolved O<sub>2</sub> 11.38 mg/l.  
4 m

Water temp. 26.29 °C, pH 9.16,  
conductivity 1954 µS/cm, dissolved O<sub>2</sub> 2.5 mg/l.

**Point 15 (pH sensor no longer recording....)**

Surface

Water temp 28.96 °C, Air temp 29.50 °C, pH -  
conductivity 1846 µS/cm, dissolved O<sub>2</sub> 11.69 mg/L.  
3 m

Water temp 29.4 °C, pH -  
conductivity 1969 µS/cm, dissolved O<sub>2</sub> 13.7 mg/l.

**Point 16**

Surface

Water temperature 28.3 °C, air temperature 28.70 °C,  
pH -  
conductivity 2045 µS/cm, dissolved O<sub>2</sub> 12.26 mg/l.  
4 m

Water temp. 26.39 °C, pH -,  
conductivity 2105 µS/cm, dissolved O<sub>2</sub> 10.67 mg/l.

**Point 17 (FPK/ZPK)**

Surface

Water temperature 28.11 °C, Air temperature 29.70 °C, pH -,  
conductivity 1869 µS/cm, dissolved O<sub>2</sub> 11.39 mg/l.  
3 m

Water temperature 28.01 °C, pH -  
conductivity 1990 µS/cm, dissolved O<sub>2</sub> 9.35 mg/l.

**Point 18 (FPK/ZPK)**

Surface

Water temp. 28.17 °C, Air temp. 30.40 °C, pH -  
conductivity 1990 µS/cm, dissolved O<sub>2</sub> 11.42 mg/l.  
3 m

Water temperature 28.1 °C, pH -  
conductivity 2045 µS/cm, dissolved O<sub>2</sub> 9.96 mg/L.

**Point 19** (due to a technical problem, starting from this point the samples were taken only from the surface)  
Surface  
Water T 27.76 °C, Air T 27.80 °C, pH - conductivity 2074  $\mu\text{S}/\text{cm}$ , dissolved O<sub>2</sub> 10.28 mg/l.

**Point 20**  
Surface  
Water T 27.68 °C, Air T 27.90 °C, pH - conductivity 2074  $\mu\text{S}/\text{cm}$ , dissolved O<sub>2</sub> 10.58 mg/l.

**Point 21 (FPK/ZPK)**  
Surface  
Water temp. 27.62 °C, Air temp. 28.0 °C, pH - conductivity 2085  $\mu\text{S}/\text{cm}$ , dissolved O<sub>2</sub> 9.56 mg/l.

**Point 22**  
Surface  
Water T 27.60 °C, Air T 30.50 °C, pH - conductivity 2007  $\mu\text{S}/\text{cm}$ , dissolved O<sub>2</sub> 10.57 mg/l.

**Point 23**  
Surface  
Water T 28.55 °C, Air T 29.06 °C, pH - conductivity 2093  $\mu\text{S}/\text{cm}$ , dissolved O<sub>2</sub> 11.82 mg/l.

**Point 24**  
Surface  
Water temperature 28.63 °C, Air temperature 30.20 °C, pH - conductivity 2175  $\mu\text{S}/\text{cm}$ , dissolved O<sub>2</sub> 11.54 mg/l.

**Point 25 (FPK/ZPK)**  
Surface  
Water temp. 28.7 °C, Air temp. 29.30 °C, pH - conductivity 2107  $\mu\text{S}/\text{cm}$ , dissolved O<sub>2</sub> 12.77 mg/L.

**Point 26**  
Surface  
Water T 27.75 °C, Air T 28.30 °C, pH - conductivity 2083  $\mu\text{S}/\text{cm}$ , dissolved O<sub>2</sub> 9.37 mg/l.

**Point 27 (FPK/ZPK)**  
Surface  
Water T 27.63 °C, Air T 28.60 °C, pH - conductivity 2053  $\mu\text{S}/\text{cm}$ , dissolved O<sub>2</sub> 9.18 mg/l.

**Point 28**  
Surface  
Water temperature 27.83 °C, Air temperature 27.50 °C, pH - conductivity 2092  $\mu\text{S}/\text{cm}$ , dissolved O<sub>2</sub> 11.38 mg/L.

