

Rouken Glen, East Renfrewshire, Scotland

Application date: 8-10 March 2016

Summary

Aim: To significantly reduce the concentration of phosphorus in the water column and to control the release of phosphorus from the sediments that cause poor water quality and algal blooms.

Description: Ornamental Lake

Size (ha): 2.4

Max. depth (m): 1.6

Average depth (m): 1.2

Dosage (tonnes): 22.05

The Lake



Figure 1: Aerial view of Rouken Glen Pond, Scotland (Google Earth Pro, 2018).

Rouken Glen Pond is an ornamental lake located within Rouken Glen Park in East Renfrewshire, Scotland. It was constructed in 1924 and is primarily used for recreational purposes. In recent years, the pond has experienced poor water quality resulting in excessive growth of aquatic vegetation, the proliferation of algae and poor biodiversity.

The Treatment

Phoslock was applied to the Rouken Glen Pond to reduce phosphorus levels in the water column and control the release of phosphorus from sediments. A total of 22.05 tonnes was applied on 8-10/03/2016. The phosphorus concentration measured in the water column prior to the application ranged from 100-200 $\mu\text{g/L}$ during summer and 30 $\mu\text{g/L}$ in winter. The significant difference between summer and winter phosphorus concentrations suggested that internal phosphorus loading from sediments was occurring during the summer months, presumably as a result of low oxygen conditions near the sediment water interface. In the weeks prior to the application, the water level had been lowered so that other works planned for the lake could be undertaken. When the Phoslock application commenced, the lake was being refilled however the water level was still about 80 cm lower than normal. Phoslock was applied from several locations around the lake and on the islands to obtain an even coverage of the lake. A slightly higher dosage was applied near the lake's main inflow. This was done as the lake was filling up during the time of the application, causing a continuous current away from the inlet. Hence a higher amount was applied near this area to compensate for the amount of Phoslock that was flowing to the other sides of the inflow area. An even amount was applied in other areas around the lake.



Figure 2: Photos of Rouken Glen Pond prior to and during the application of Phoslock.

Conclusion

Phoslock was applied to Rouken Glen in March 2016. Minimal water sampling was undertaken after the application of Phoslock, however the water quality was observed to significantly improve after the application of Phoslock. In November 2016, Rouken Glen Park won the UK's Best Park as voted by YOU! 2016 at the Fields in Trust awards ceremony. Information about the Phoslock application was published in the Rouken Reporter publication and can be found at <http://www.roukenglenpark.co.uk/CHttpHandler.ashx?id=16509&p=0>

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