



Bournemouth University have been commissioned by Borough of Poole to provide a 12-month research and monitoring programme on Poole Park Lakes.

The weekly water monitoring programme includes:

- Quality of water entering lakes via drains
- Flow gauging and calibrations of drain inputs
- Water level measurements
- Changes in water quality around the lake

Research includes:

- Lake depth survey and sediment volume mapping
- Study of flora and fauna species
- Study of sediment consistency
- Fish stock studies

The water coming into the lake is monitored on a weekly basis. This helps provide information about particular inputs which may be affecting water quality.

Monitoring fluctuations in:

- Temperature
- Electronic Conductivity
- Salinity
- pH
- Dissolved oxygen and
- Flow rate



Poole Park Lakes Research Project 2015



A better understanding of the lakes and drainage will lead to more informed management decisions and works that will improve the park for people and wildlife.



Help!

55 people are already part of the Facebook group: **Poole Park Lakes - Public Engagement with Science**. Please join them and record what you find such as bird sightings, pollution, litter, water height on the gauge board and anything else you would like to discuss.



What happens next?

The research continues through to the first week of **January 2016**, providing a full year of evidence and data.

Bournemouth University will summarise the research findings and make recommendations for future management, maintenance and capital work.

Spring 2016 Borough of Poole will assess these options and consider:

- How practical they are to implement,
- The costs involved, both of capital work and to maintain over the long-term
- The impact on the park, its users, wildlife and local communities.

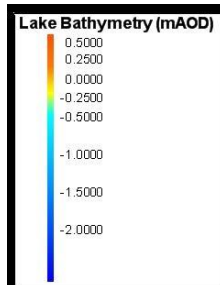
The design process for the whole HLF project is progressing and will include two phases of **public engagement in April and August 2016**.

This will include seeking the public opinion on our proposals for the future of the lakes.

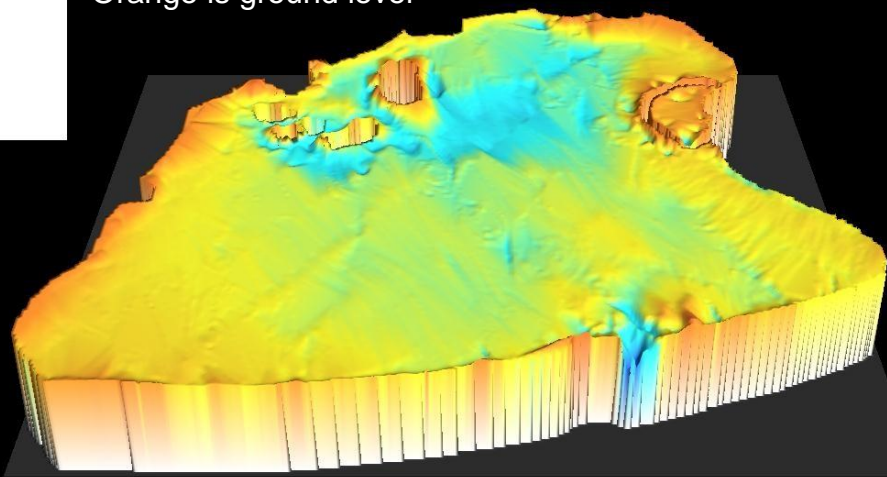
In December 2016 the second-stage bid to the Heritage Lottery fund will be made, hopefully leading to £2.7m of capital funds.

Results so far, example 1:

We now have an accurate map of the depth of water in the lake. This means, using our gauge boards, above right, that we know lake volume. If the gauge board reads 0.7, which is when the lake is fairly full, then it holds approx. 188,559m³ = 188,559,000 litres = 41,477,181 gallons!

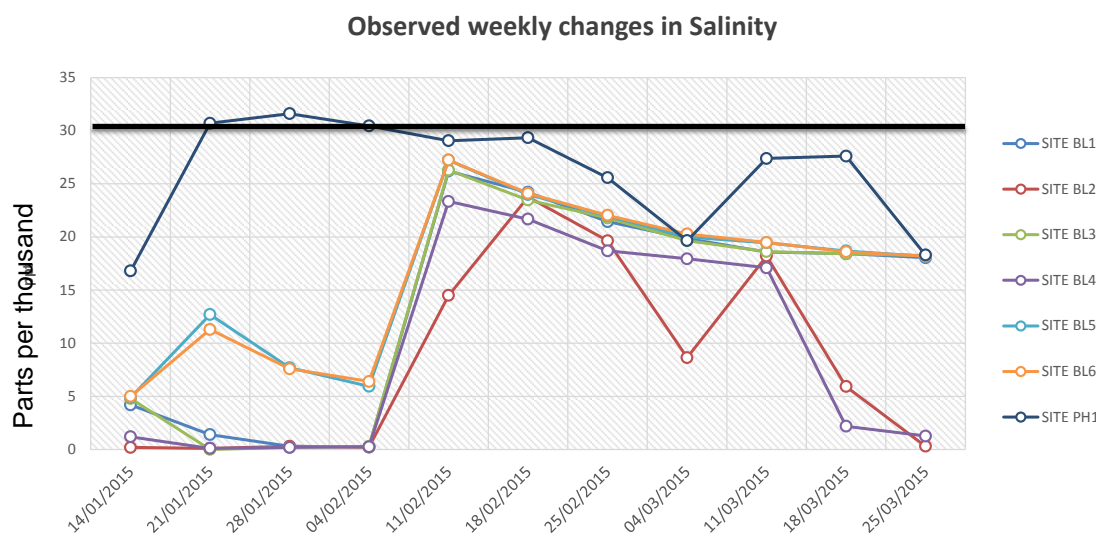


A bathymetric map of lake depth:
Blue represents the greatest depth, about 1m.
Green/Yellow is about 30-50cm depth
Orange is ground level



Results so far, example 2:

One of the weekly tests is to measure salinity in the boating lake. The graph below shows how this fluctuates over the course of 12 weeks. Imagine being a fish, crab or insect living in the water and trying to adapt to such a large range. BH 5 and 6 are in the middle of the lake; PH1 is Poole harbour.



Salinity ranges: Marine waters salinity of 30 to 35. Brackish seas or waters of 0.5 to 29

Options and aims for the future:

How and when to flush the lake

Flushing the lake more would help keep salinity high, but could import massive loads of sediment, algae or other material from the harbour. The research should provide advice on an evidence-based flushing regime.

Reed beds. If water can filter through reed beds, the water quality is improved and you create extra habitats for wildlife. New reed beds in the lake, along the edges or elsewhere within the catchment could all help. The research will tell us if it will or not.

Dig it up! Dredging silt would increase lake depth, reducing the impact of temperature, allow more water to drain from the lake and would provide the material for creating reed beds.

Get fresh! Thinning out the trees and vegetation from around the freshwater lakes, dredging the silt and creating new lake edges will improve the freshwater ponds for wildlife and people.

Improve habitats for wildlife
Retain boating and sailing activities