Heath Lake
Introduction to the scheme
November 2021

What we will cover in this session

Agenda

1. Scheme overview
2. Summer surveys of the lake
3. Desilting options
4. Future management plans
5. Public engagement
6. Programme and next steps
7. Steps you can take to help protect Heath Lake
8. Discussion
9. Useful contacts

Introducing the team

Thames Water	Role
Izabela Wdowinska	Project Manager
Chris Rochfort	Technical Environmental Lead
John Manyanga	Technical Assurance
Aghogho Amelia Asagba	Stakeholder & Communications Executive

Wokingham	Role
Duncan Fisher	Ecology officer
Simon Bartlam	Conservation officer

Jacobs	Role
Jon Barnes	Jacobs Technical lead
Mark Mathews	Jacobs Stakeholder lead

1. Scheme overview

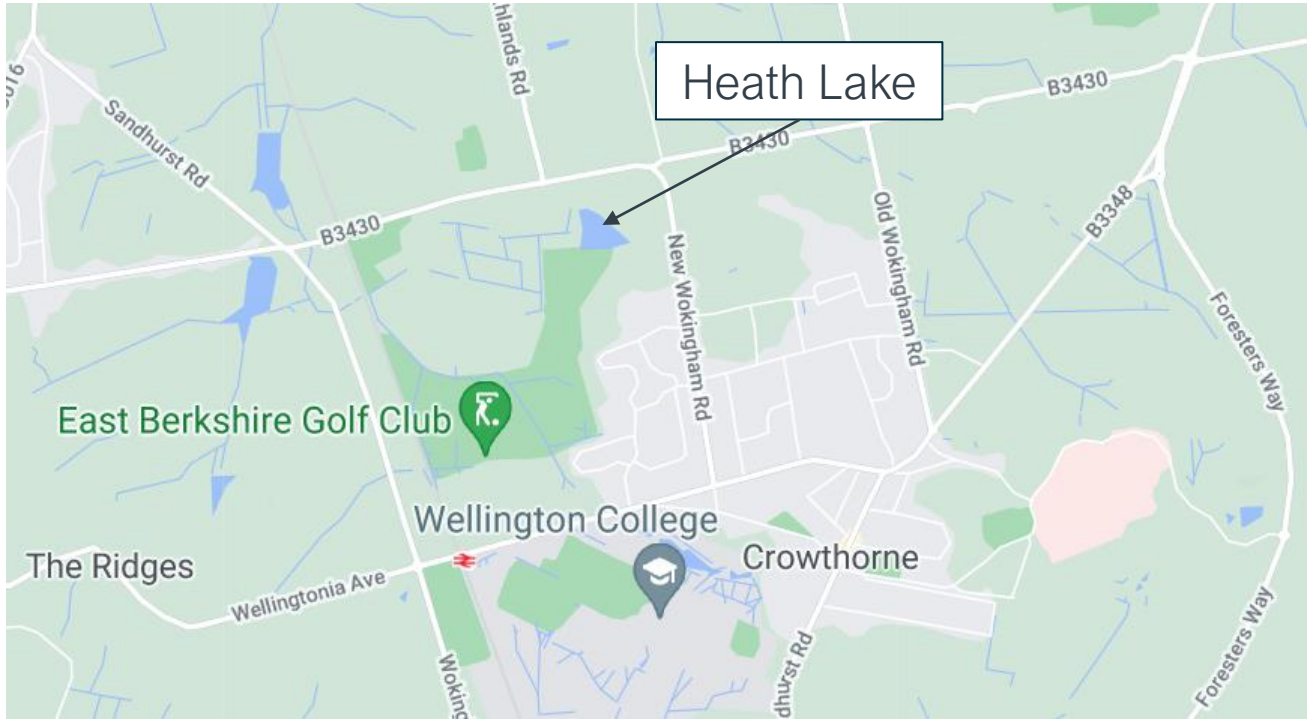
Heath Lake SSSI

Heath Lake is situated to the north of Crowthorne in the parish of Wokingham Without.

It is one of a very few acid lakes in Berkshire, with a naturally low pH level which supports several rare plants.

It is a designated a Site of Special Scientific Interest (SSSI).

The SSSI status is at risk due to the cumulative impact of poor water quality, sediment build up, and the effect of tree encroachment on the number and diversity of aquatic plant life.



1. Heath Lake scheme overview

This scheme aims to improve the lake's water quality and ecology and return the lake to a ‘favourable condition’ with regards to its SSSI status:

- Achieve a reduction in **phosphorus** concentration.
- Improve the **natural sedimentation rate** in the lake by making adjustments in the surface water upstream of the lake.
- Achieving at least 3 characteristic **macrophyte species** present, and at least 2 characteristic marginal or emergent species present.

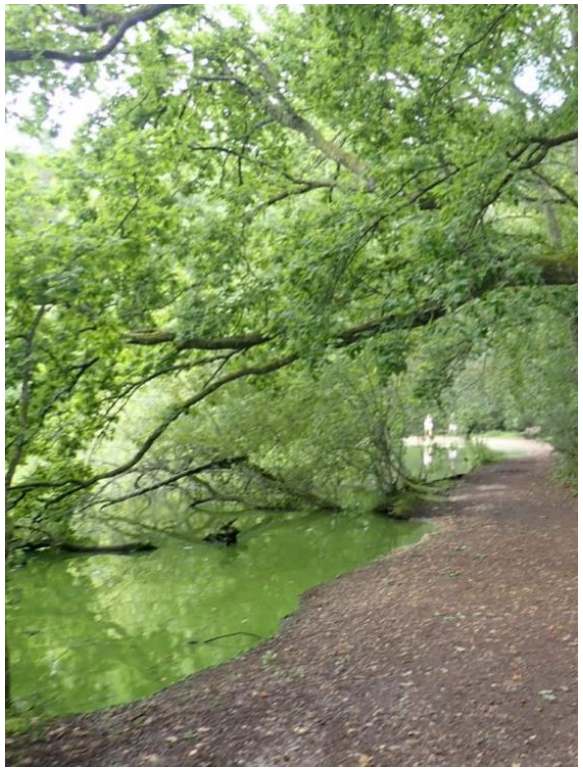
Achieve ‘**Good Ecological Status**’ under the Water Framework Directive (WFD). The WFD aims to prevent deterioration and enhance status of aquatic ecosystems.

1. Scheme overview

Project scope:

- **Remove sediment accumulations** from Heath Lake.
- **Install silt traps** to achieve a natural sedimentation rate.
- Review the need for, and extent of, tree & branch removal along the edge of the lake to **minimise build up of leaf litter** and reduce the effect of shading in the lake.
- Ongoing **maintenance plans** to be put in place to maintain the improved water quality standards, maintain tree cover, and maintain silt traps.
- Ongoing **monitoring of water quality**, the recovery of the target plant species and sedimentation levels post completion.

We are also investigating the highway drainage **surface water network** for sources of pollution, and will carry out works on the surface water network, including on New Wokingham Road, to prevent sediment entering Heath Lake.



2. Summer surveys

Overview

In Summer 2021, our surveyors examined the ecology and physical habitat of Heath Lake and the Local Nature Reserve. We are currently reviewing this survey data.

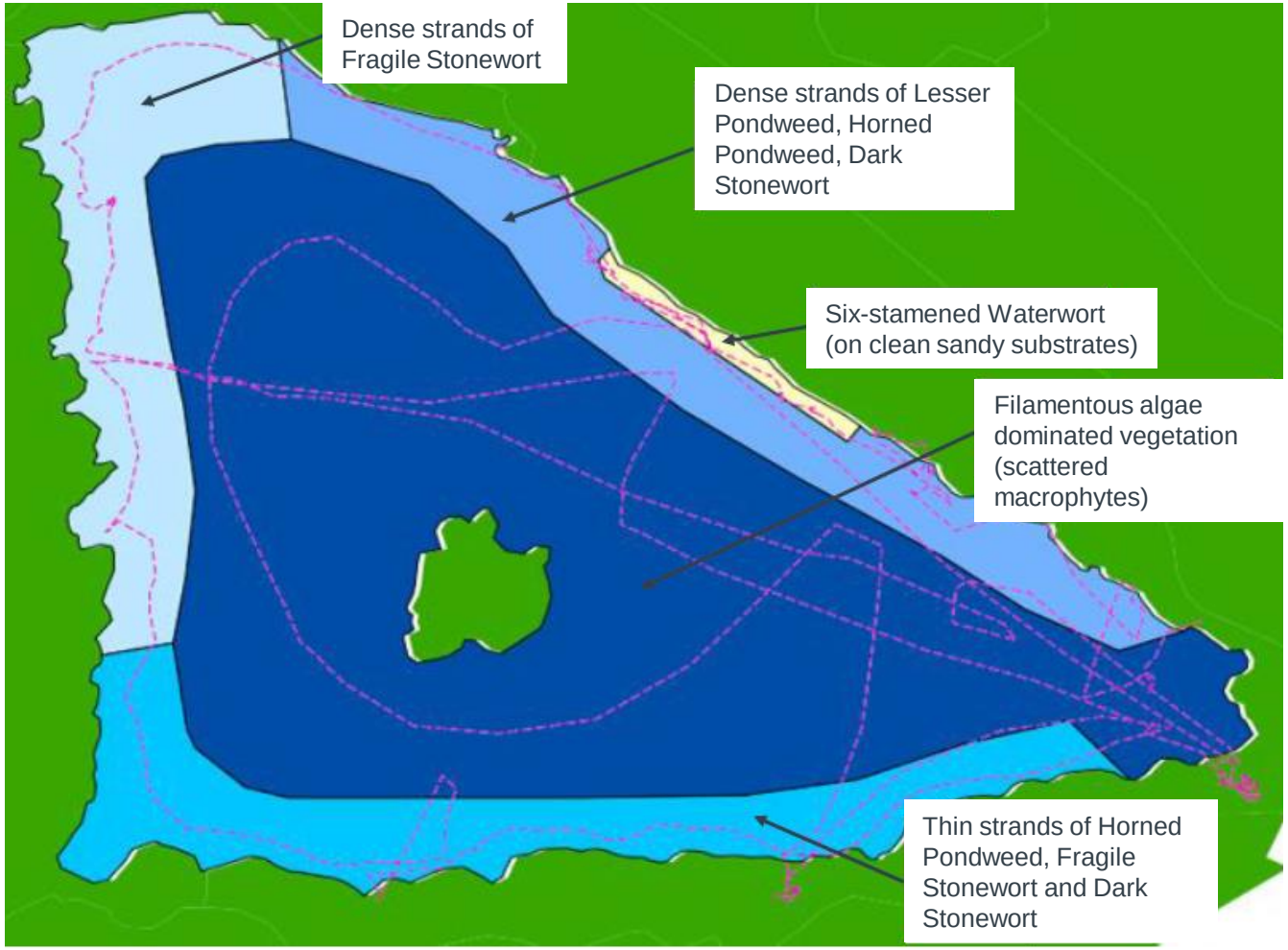
- **Lake bathymetry** and **sediment quality** to determine amount of lake sediment and presence of any contaminants
- **Terrestrial** and **aquatic plant** surveys to determine the presence of designated species
- Presence of **fish** species and **Great Crested Newts**
- **Arboricultural** surveys of trees within the Local Nature Reserve
- **Aquatic invertebrate** and **diatom** surveys to determine the effect of water quality and nutrients on the ecology of the lake
- **Dry weather** and **wet weather water quality surveys** on the surface water network, to survey for any sign of pollution e.g. misconnections.

2. Summer surveys: Aquatic vegetation

2 day boat survey in June 2021

Our findings:

- 2 of the 6 designated SSSI species (six **stamened waterwort and lesser pond** weed)
- Six stamened waterwort and lesser pond weed restricted to **north eastern margin** in clear water
- 12 of the 14 **marginal/wetland species** described on the SSSI citation recorded



Macroinvertebrate survey findings:
From our June 2021 macroinvertebrate survey we found the notable '**Trumpet ramshorn**' in the lake.

2. Summer survey: Terrestrial vegetation

- Surveyed June 21
- UK Habitats assessment methodology

- **132 plants species** (119 vascular)
- **16 species** are considered notable
- **6 invasive** non-native species

3. Desilting options

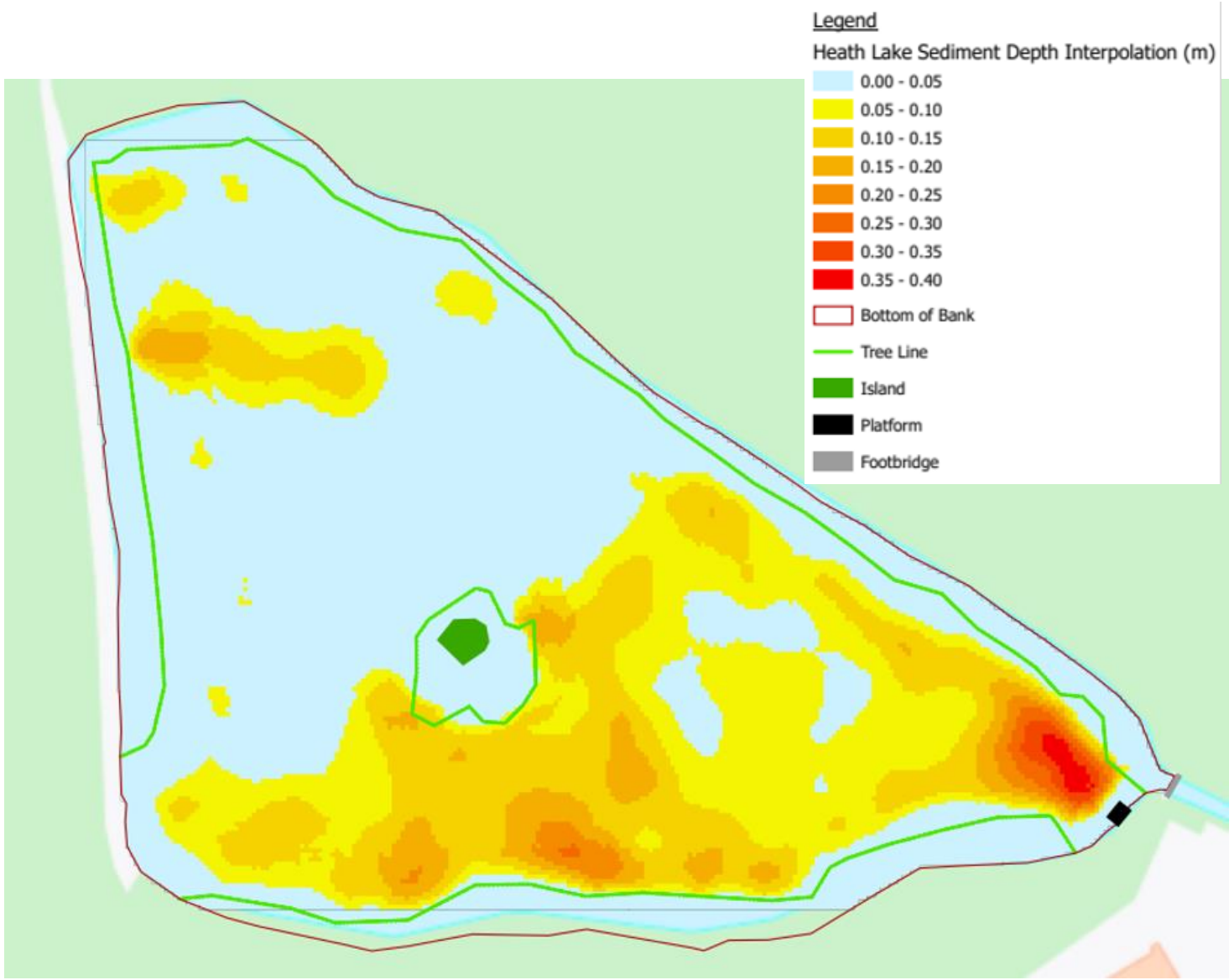
Benefits of desilting

Heath Lake is **less than 1.5m deep**. Silt depth varies across the lake.

The lake's water quality has been affected by a **build up of sediment** at the bottom of the lake.

This is predominantly due to **surface water carrying silt and pollutants** into the lake and **plant matter breaking down** on the lakebed.

This has resulted in a **reduction in the number and diversity of aquatic plants** the lake sustains and leading to the lake failing to meet national environmental objectives.



Bathymetry survey image showing the depth of silt across the lake

3. Desilting options

Overview

We are assessing a range of **desilting options** for the lake, which include:

- **Access and site compound** options – for example existing or old car park
- **Silt removal methods** – for example excavator or pump
- **Transportation options** – for example pump or lorry
- **Disposal options** – for example around the nature reserve or to landfill

3. Desilting options

Removing the silt

- Desilting of the lake occurred in the late 1990's and we need to desilt the lake again.
- Options we are considering include:
  - Partial **drain down** of the lake
  - **Dredging or excavating**: Examples include
    - Land excavator
    - Amphibious excavator
    - Truxor digger
  - **Pumping**
  - **Silt separation**: Examples include:
    - Separation tanks
    - Dewatering bags
    - Presses

The final option chosen will be the one that best meets the project objectives and minimises the impact on the local community and environment.

3. Desilting options

Disposal method options

- Create/enlarge **existing island** with silt in combination with gabion baskets
- Create an **additional embankment** (bund) at the west of the lake, creating a pedestrian deck
- **Even distribution** on the site – either directly from pipeline or via bags which allow water to drain through
- **Off-Site: local**: Offered to local golf course for landscaping, and local farms/agricultural sites
- **Off Site: Landfill**

4. Future management and monitoring

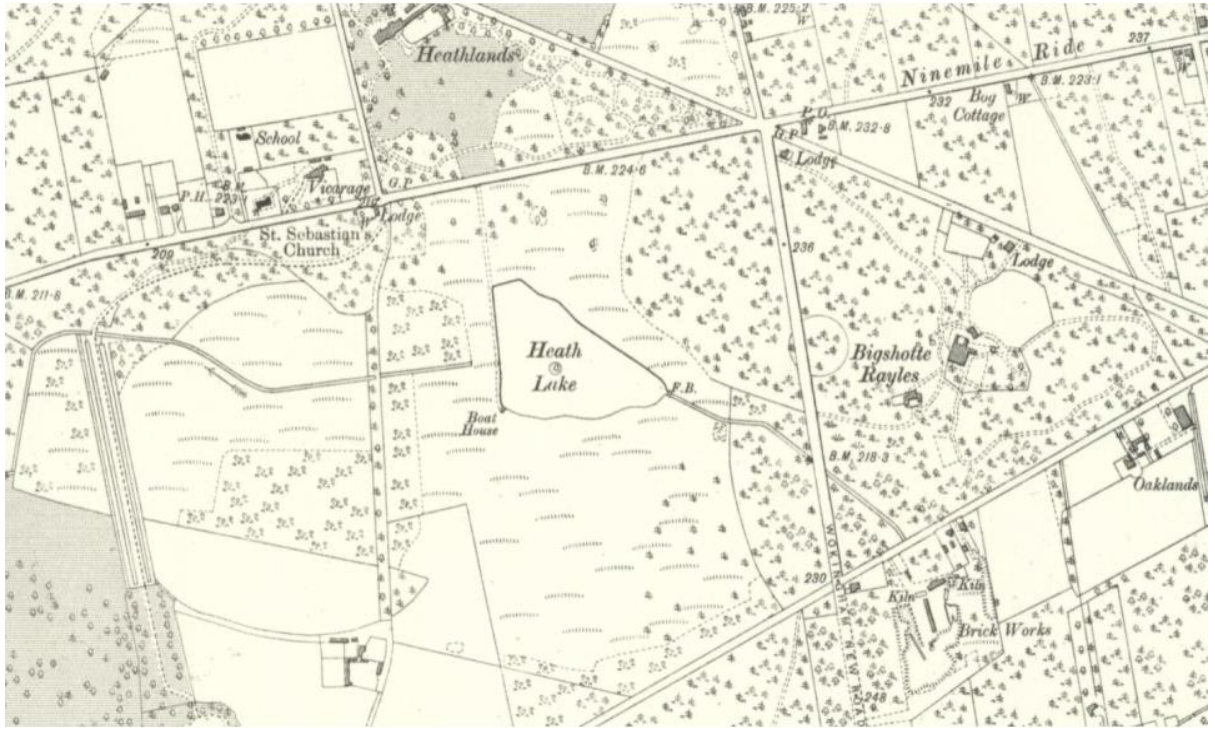
Our plans for the future

Along the lake edge, we are looking at options to improve **existing wildlife habitats and new viewpoints** across the lake.

This will also support improvements to the **water quality** of the lake by reducing over shadowing.

We will also be producing:

- **Maintenance plans** to be put in place to maintain the improved water quality standards.
- Ongoing cleaning and maintenance plans for the **sediment removal units** installed on the surface water network.
- A schedule for **monitoring water quality**, the recovery of the target plant species and sedimentation levels post completion.

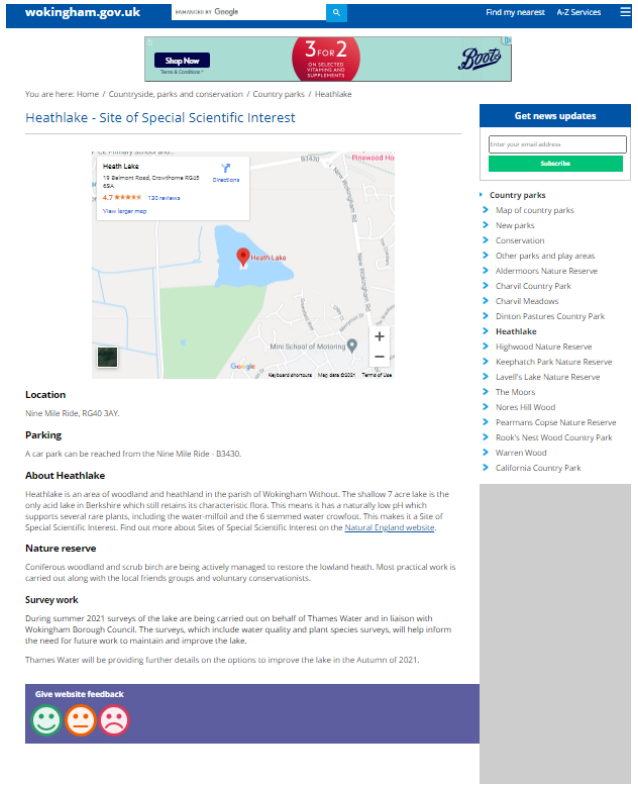


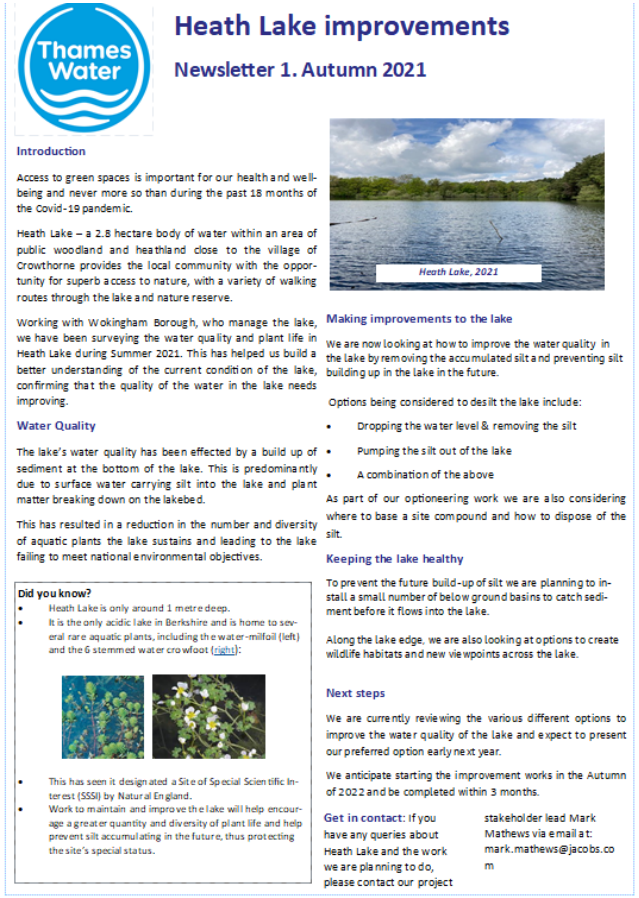
1912 Ordnance Survey map. During 20th Century the trees that previously maintained their distance converged on the lake from all sides.

5. Public engagement

Keeping you informed

- Information **notices** around lake
- Thames Water project **website** page
- Updates on Wokingham **Council website** page
- Online **newsletters**
- **Email** updates to stakeholders
- Future **drop ins**
- Project team stakeholder **lead contact**





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6. Programme and next steps

- **Assessing** the desilting options – Autumn 2021
- **Future management** discussions – November / December 2021
- **Interim report** to the Environment Agency and Natural England in January 2022
- **Local community updated** Spring and Summer 2022
- **Work to start** in the Autumn of 2022
- **Work completed** by the Spring of 2023
- **Monitoring and maintenance** obligations post completion.

7. Protecting Heath Lake

Steps you can take

- **Detergents** and other harmful chemicals can wash into the surface water drains, flow into the lake and impact the lake's water quality.

- It is important that local residents and businesses are careful about what goes into the **surface water system**
  - for example helping to avoid soapy water from ending up in the surface water drains from washing cars on driveways.

- **Visitors** to the lake should also be careful when walking along the lake edge, sticking to paths and avoiding disturbing the lake shore, where the rare plants have their habitat.

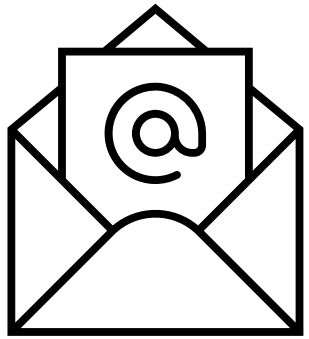
8.
Discussion

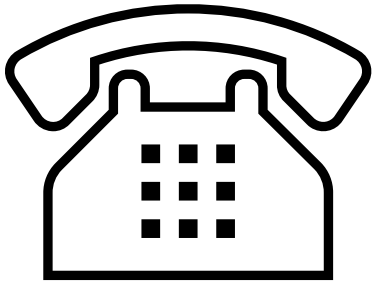
9. Useful contacts

- Any queries about our plans, please contact mark.mathews@jacobs.com or call 01189 467809.

- For any other queries relating to Heath Lake please contact Wokingham Borough Council on 0118 9342016 (Option 2) or by email: countryside@wokingham.gov.uk

- For any other Thames Water queries please contact us on 0800 316 9800 or customer.feedback@thameswater.co.uk





Thank you