



*Wimbledon Park Survey to
Detect the Presence of Eels*

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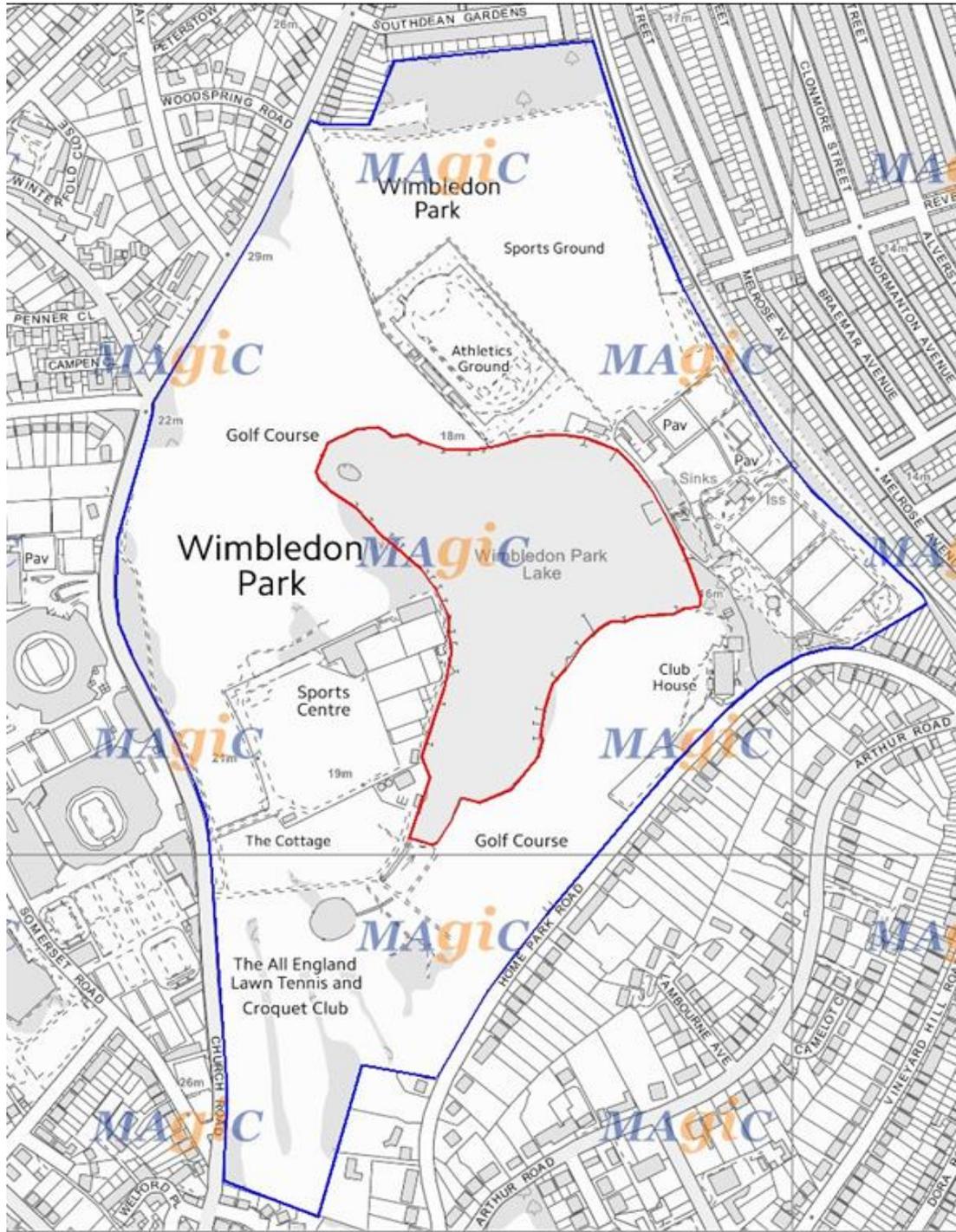
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1. Introduction

AGA Group was approached by Martin Boyle of the London Borough of Merton to conduct a survey on the presence of eels (*Anguilla Anguilla*) within Wimbledon Park Lake. Wimbledon Park Lake covers approximately nine hectares and is one of the largest lakes in South London. It is also listed as Grade II in the English Heritage Register of Parks and Gardens of Special Historic Interest. The lake is fed by a number of streams originating from Wimbledon Common and the overflow from the lake flows into the River Wandle. The boundary of the Park and the location of the Lake are outlined in blue and red respectively in *Figure 1* below. The All England Lawn Tennis Club owns the majority of Wimbledon Park and leases it to the golf club. London Borough of Merton owns the sports ground and hold the CEFAS registration for the lake.

AGA visited the site on 3rd September 2018 in order to conduct a survey on the presence of eels (*A. anguilla*). During the visit the following predators were noted; cormorants (*Phalacrocorax carbo*) and herons (*Ardea cinerea*). Subsequently AGA has provided some rationale for the low stocking density of eels (*A. anguilla*).



Map produced by MAGIC on 9 October 2017.
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Figure 1 Map outlining Wimbledon Park boundary in blue and the Lakes boundary in red (MAGIC, 2018).

2. Method

The aim of the survey was to assess the presence of eels (*A. anguilla*) within the lake. Size and weight measurements were taken for any eels (*A. anguilla*) caught during the survey, which was completed using the method of electro-fishing. The electro-fishing equipment used was electro-catch- lake set 600v. The electrofishing technique creates an electric circuit in the water that interferes with the central nervous system of the fish. This stuns the fish and enables them to be scooped up using a hand net. This choice of method was preferred because eels (*A. anguilla*) are especially susceptible to electro-fishing currents due to their elongated bodies; this creates a large surface area for the electric current to stun the fish. After the fish are stunned, they quickly recover within a short period of time.

During the survey AGA encountered some limitations with the effectiveness of electro-fishing. As a result of the water turbidity the effectiveness of electro-fishing decreased, with a decrease of conductivity. Electro-fishing works best in clear water which allows the current to take advantage of increased conductivity, so it travels more freely.

3. Results

A total of five eels (*A. anguilla*) were observed within the lake (*Table 1*) with an average length of 0.72m and weight of 938g. It is believed that these fish were mature with one or two juvenile.

Table 1: Length and weight of each individual eel (*A. anguilla*) observed during the survey.

Number	Length (m)	Weight (g)
1	1	1216
2	0.5	652
3	1.1	1463
4	0.6	836
5	0.4	527

4. Analysis

Overall the eel (*A. anguilla*) population within Wimbledon Park is low, it was noted that other fish populations were abundant during the survey such as silver fish and juvenile carp (*Cyprinus carpio*).

While undertaking the survey cormorants (*P. carboand*) and herons (*A. cinerea*) were spotted around the lake, which are natural predators of the eel (*A. anguilla*). The presence of these predators may have an effect on the eel population. If the recruitment of eels (*A. anguilla*) are low this predation can have significant consequences on juvenile populations.

Eels (*A. anguilla*) are currently categorised as critically endangered, resulting in dwindling populations within the whole EU. Eels (*A. anguilla*) can take up to 20 years to mature and begin to spawn. This makes it vital to protect and enhance any population of eels to ensure juvenile survival enabling maturity to be reached. Thus it is important to sustain a good ecological habitat for the eels to survive within Wimbledon Park Lake.