

Clissold Park Ponds

Introduction

This paper outlines the background to the eradication of Topmouth Gudgeon at Clissold Park and provides information to assist in a decision on whether restocking of fish should be undertaken at the ponds. Three options are set out but recommendations are not made, as a decision will be made based on feedback from stakeholders.

Background

An Environment Agency eradication operation took place in early 2015 to remove all fish from the two ponds and the New River at Clissold Park. The operation was designed to destroy more than 100,000 Topmouth Gudgeon, an invasive and damaging non-native fish species. The operation removed a number of carp, roach and ornamental goldfish in the process.

The operation was a success, with all Topmouth Gudgeon being removed from the ponds. Now that the operation is complete, a number of park users have requested that the ponds are restocked with fish. A decision is required on whether restocking should take place.

The Clissold Park ponds have not been managed as fisheries in the past, with most of the fish having been introduced illegally (by people dumping fish in the water), or naturally (such as through the carrying of fish eggs on ducks' feet). The stretch of the New River in Clissold Park has not historically contained fish (apart from goldfish put in by park users), and there are no plans for this to be re-stocked as part of any future management scheme. Fish have a significant impact on the ecology of water bodies, so careful thought needs to be given to their future management.

Hackney Council has a number of statutory obligations in relation to biodiversity and is required to comply with the 'Biodiversity Duty' as set out in the Natural Environment and Rural Communities (NERC) Act 2006. This means that biodiversity should be considered in all aspects of how the organisation functions. Hackney Council's Biodiversity Action Plan (BAP) includes action plans for wetland habitats, with the overall aim being to ensure that wetland and waterway sites are managed positively for biodiversity, increasing and enhancing the biodiversity value of these habitats wherever possible.

Advice has been sought from a number of sources to inform this paper, including the RSPB, the Environment Agency (EA), Froglife, Wildlife Trusts (specifically a recent study by the Suffolk Wildlife Trust on pond habitats), the Freshwater Habitats Trust, as well as advice from biodiversity specialists.

Options

A number of options are possible:

- 1) Re-stock both ponds with fish;
- 2) Re-stock one pond with fish;
- 3) Do not re-stock either pond with fish.

Re-stocking

Water bodies across the UK tend to be stocked with fish for angling or for their ornamental value. Angling will not be permitted at Clissold Park due to the logistics and cost implications, so any re-introduction of fish would be for ornamental or aesthetic purposes only.

Many park users are used to seeing fish in Clissold Park and have requested that the ponds are restocked for this reason. Users enjoy seeing the fish, and feel that they belong in Clissold Park.

Stocking fish would have to take place in late autumn or winter when oxygen levels are higher and fish are less active; this means that movement and stocking is less stressful for the fish. Fish have to be added to a water body gradually because adding a large number of fish all in one go can upset the balance of the ecology in the water, causing water quality and habitat problems.

The stocking of water bodies with fish is subject to stringent controls by the Environment Agency. Fish must be carefully health checked to ensure that they are healthy and that disease, parasites and invasive species are not brought to a water body. The sourcing of fish can be done in partnership with the EA, who can also advise on stocking density and species. Stocking and health checking may present a significant expense, so costs will need to be examined once options have been explored.

Apart from adding to the variety of species in an ecosystem (when managed properly), fish do not tend to add biodiversity value to ponds. In fact a recent study by the Suffolk Wildlife Trust has confirmed theories that fish – even small numbers of tiny stickleback – can significantly reduce the wildlife value of a pond. Generally, advice from experts is that fish should not be introduced, or should be kept separately, if native wildlife is to be encouraged in a pond.

Fish as predators

Most fish, even if omnivorous (eating plants and animals), are predatory. They are voracious predators of amphibian spawn and tadpoles and also eat insect larvae, worms, crustaceans and other fish; even very small fish can cause problems because they compete with tadpoles for food. Larger, invertebrate-feeding fish, such as carp, can significantly deplete populations of insects such as dragonflies and daphnia which means that these are not available as food for other creatures, and that algae levels can increase (because these invertebrates feed on algae).

It should be noted that frogs and toads can also cause problems for fish, particularly in the breeding season, when male frogs and toads grab anything that looks vaguely like a female, including fish. Usually fish are released unharmed but they can die when held by the gills for long periods of time.

Effects of fish on the plant community

Several fish species can effectively kill off plant and animal communities by their feeding behaviour. Large fish such as carp feed by sifting and stirring the sediment at the bottom of ponds which makes water very muddy. This can have a negative impact on invertebrates and inhibits aquatic plant growth by destabilising the pond base to the point where aquatic plants cannot grow at all. The removal of plants by fish takes away food, shelter and breeding habitat for invertebrates and amphibians, meaning that the pond community is adversely affected.

It is likely that the carp have had at least some impact on plant life in the Clissold ponds; there is very little aquatic plant growth in our ponds, despite repeated attempts to establish it. This means that we have great difficulty with algal blooms (where the ponds go green). The presence of algal blooms causes problems for wildlife by affecting oxygen levels in the water; in severe cases, mortalities of fish and invertebrates can result.

Effect of removing fish on bird life

Swans, geese and ducks tend to eat aquatic plants, insects and snails. Not having fish in our ponds would probably improve the availability of food for these birds because aquatic plants should do better, and they are not competing with fish for insects.

Hérons eat fish, but also take amphibians, small mammals and birds as well as insects and crustaceans. Kingfishers eat fish, but they also take amphibians and aquatic insects. The feeding habits of these and other birds may have been affected by the removal of fish but an increase in amphibians and insects should balance this out (it is also relatively unlikely that these birds would have caught the very large carp previously present in the ponds).

Terrapins

Despite removal attempts, a significant population of red-eared terrapins is present in the Clissold Park ponds and this should be considered in any decision about future management. Native to America, this is an invasive species that was released illegally into the wild in the 1980's when they grew too large as pets. Their release into the wild is prohibited and there is also now a European import ban.

Terrapins can live for 30 years. They need 59-112 days of warm weather per year to breed successfully so reproduction has not been recorded in the UK, though increasing temperatures may allow this. Terrapins are opportunistic omnivores (meaning they eat plants and animals), and due to their size it is possible that they could predate on native amphibians, fish, water birds and invertebrates. They can therefore threaten and outcompete native species.

Trapping programmes have taken place at Clissold Park in the past but have not been entirely successful. It is possible that further trapping could take place to attempt to remove them from the park's water bodies and this should be considered.

Options Appraisal

Option 1: Re-stock both ponds with fish:

It is likely (as outlined above) the fish that were present in the Clissold Park ponds prior to the EA eradication operation had negative impacts on the biodiversity of the ponds due to their impact on animals and plants. It is therefore recommended that if one or both ponds are to be re-stocked, careful choices should be made to select species to reduce impacts as much as possible (less damaging species such as Crucian Carp, Roach or Rudd could be introduced); species selection could be done in consultation with the EA Fisheries Team who would advise us on stocking density and appropriate species.

The introduction of fish will undoubtedly have an impact on the native wildlife of the ponds, so park users would need to accept that numbers of amphibians, invertebrates, plants and possibly even water birds would be lower in the ponds in the park.

Option 2: Re-stock one pond with fish:

Stocking one of the two ponds would be a compromise, adding fish to the water for ornamental value but also allowing one pond to be a more valuable wildlife asset.

The west and east ponds in Clissold Park are connected to one another, and there an outlet towards Grazebrook Road. Advice from the EA is that if one pond is to be stocked, it should be the east pond. Stocking the west pond could have a water quality impact on the east pond (stocking the east pond would avoid this). The considerations for option 1 above for choice of species etc. apply to this option as well.

Option 3: Do not re-stock either pond.

The evidence above suggests that the presence of fish in the park ponds may have negatively affected the biodiversity value of these water bodies in the past. Hackney Council's BAP targets require us to enhance wetland habitats in the borough for native wildlife wherever we can. The evidence, particularly from the Suffolk Wildlife Trust's pond study, suggests that the presence of fish can significantly reduce the wildlife value of a pond. In order to encourage wildlife such as amphibians, invertebrates and birds effectively, not replacing fish stocks in the ponds should be considered. If this option is chosen aquatic plants could be added to the ponds and would stand a better chance of thriving in a fish free environment.

It should be noted that endeavours to enhance the biodiversity value of the ponds at Clissold Park may have upper limits because the ponds are 'man made'. The construction of the ponds (with materials such as concrete) means that they may not have the capacity to support as much wildlife as more natural ponds would, but any effort to enhance the environment is desirable.

Sources

Suffolk Wildlife Trust (Pond Study)

Environment Agency

Froglife

RSPB

Advice from biodiversity specialist colleagues