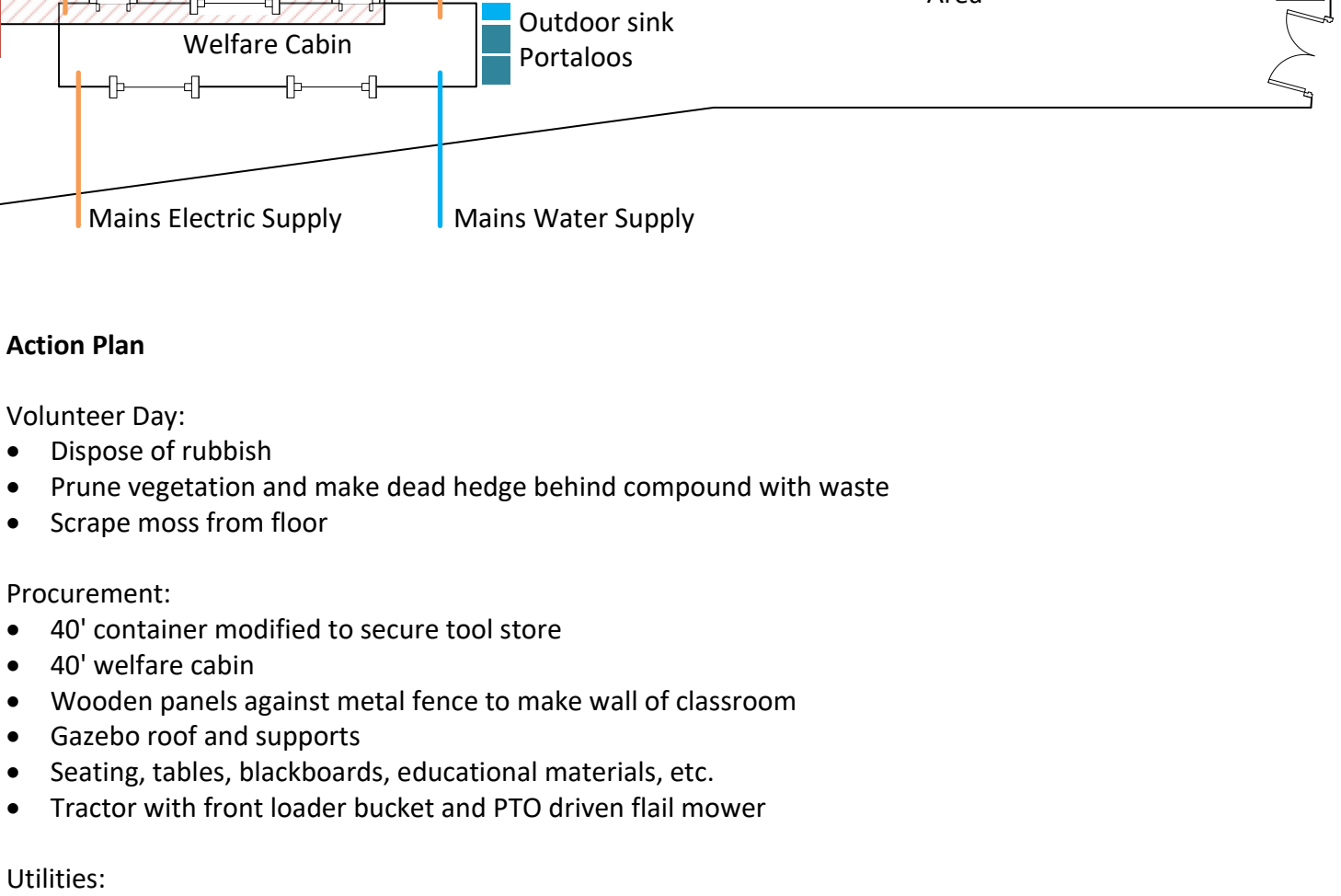


# Compound

NEWT's compound at Moor Lane, Newbury, is a secure fenced concrete base compound with good vehicle access. This will be NEWT's HQ for:

- Storage of tools, materials and equipment
- A hub to run volunteer days
- Facilities for school and community group use



## Action Plan

### Volunteer Day:

- Dispose of rubbish
- Prune vegetation and make dead hedge behind compound with waste
- Scrape moss from floor

### Procurement:

- 40' container modified to secure tool store
- 40' welfare cabin
- Wooden panels against metal fence to make wall of classroom
- Gazebo roof and supports
- Seating, tables, blackboards, educational materials, etc.
- Tractor with front loader bucket and PTO driven flail mower

### Utilities:

- Water to welfare unit and outdoor sink for hand washing, insulated pipes
- Electric supply to welfare unit, RCD, MCB; with tail to tool storage and classroom lighting

NB: When these become available.

# Nature Reserve Phase 1

## 1) Compound

Plans as per compound design above. Which is a prerequisite that facilitates us being able to do the rest.

## 2) Tiny Forest

- Basic maintenance
- Ongoing scientific monitoring

## 3) Existing paths

- Make safe by removal of debris and barbed wire
- Basic maintenance to keep tidy and safe

## 4) Information and education boards

- Content creation and illustration
- Procurement and installation of boards

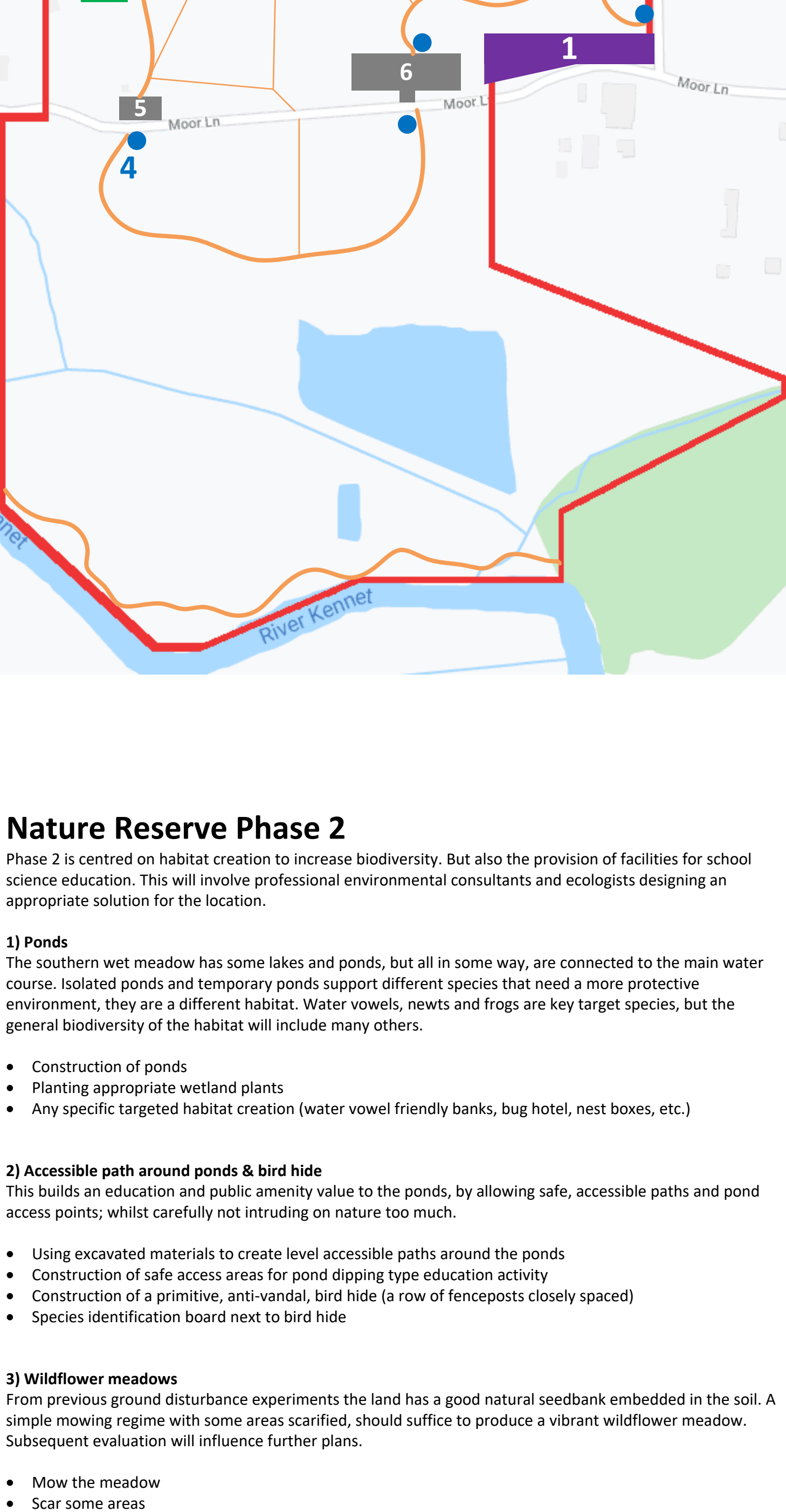
## 5) Disabled drop off point and vehicle access to lower meadow

- New forest style carpark
- Short fence of posts to create vehicle barrier on perimeter
- Simple single bar vehicle gate for our own access to meadow

## 6) Very basic car park

- Short fence of posts to create vehicle barrier on perimeter
- Simple single bar vehicle gate for our own access to meadow
- Open up and form access road from Moor lane
- Flail grass

# Nature Reserve Phase 1 - Map



# Nature Reserve Phase 2

Phase 2 is centred on habitat creation to increase biodiversity. But also the provision of facilities for school science education. This will involve professional environmental consultants and ecologists designing an appropriate solution for the location.

## 1) Ponds

This area is naturally wet meadow has some lakes and ponds, but all in some way, are connected to the main water course. Isolated ponds and temporary ponds support different species that need a more protective environment, they are a different habitat. Water voles, newts and frogs are key target species, but the general biodiversity of the habitat will include many others.

- Construction of ponds
- Planting appropriate wetland plants
- Any specific targeted habitat creation (water vole friendly banks, bug hotel, nest boxes, etc.)

## 2) Accessible path around ponds & bird hide

This builds an education and public amenity value to the ponds, by allowing safe, accessible paths and pond access points; whilst carefully not intruding on nature too much.

- Using excavated materials to create level accessible paths around the ponds
- Construction of safe access areas for pond dipping type education activity
- Construction of a primitive, anti-vandal, bird hide (a row of fenceposts closely spaced)
- Species identification board next to bird hide

## 3) Wildflower meadows

From previous ground disturbance experiments the land has a good natural seedbank embedded in the soil. A simple mowing regime with some areas scarified, should suffice to produce a vibrant wildflower meadow. Subsequent evaluation will influence further plans.

- Mow the meadow
- Scar some areas
- Any specific targeted habitat creation (bumble bee brick homes, bug hotels, messy wood piles, predrilled bricks, predrilled logs, nest boxes, etc.)
- Hedge improvement, laying and diversification; to achieve dense, uninterrupted, thick hedgerows

## 4) Reptile habitat

There is already an established population of various species. The simple provision of habitat seeks to build on that by expanding the available habitat. There are various waste materials on site that can be easily turned to habitat creation, such as rusty tin roof sheeting, bricks and rubble.

- Leave existing habitat well alone, build new one at least 200m further east
- Use the most sunny spot at the top of the meadow
- Lay sheeting on ground and secure from wind with bricks
- Intermingling small piles of bricks and rubble

## 5) Orchids

There is a small colony of orchids in the upper northern meadow. This should be protected and encouraged. They currently grow out of a well used path and get trodden on, but come back every year; if the path is diverted they might get crowded out instead. I am unsure what to do and will appreciate the advice of the ecologists.

## 6) Restoring path to connect southern entrance to main area

There is an existing informal path that is frequently used. This connects the park at Northcroft to Moor lane, that makes a circular route from the leisure centre and adjacent public carpark, around the entire nature reserve. The problem here is that the path is dangerous in places and strays onto neighbouring land to the west. The owners of that land have expressed that they object to the current public usage and do not wish us to encourage this, although they have made no efforts to prevent it. This is regrettable, but suffice to say we need to make our own way back across the wetland on our own land.

There are various historic paths that have fallen into disrepair. These can just about be accessed at certain times of the year, but a full crossing of the wetland is no longer possible due to sections having been eroded during flood conditions. There are some bridges, some collapsed and some still standing but with no obvious route the other side of them. The most cost effective way of restoring access, likely involves the reuse of elements of these original paths. This requires expert advice and further information can be provided onsite.

We want to keep a large area of the lakes and wetland undisturbed by humans too much, we would not want to provide a public access path through the heart of it; rather skirt around the edge and be able to see in.

### Combination of:

- Boardwalk
- Boardwalk
- Bridges

To accessible standard for large prams and wheelchairs.

In wood or recycled plastic???

- Additional educational information boards
- Hides and wildlife spotting access points to lake and river
- Preventative measures to keep people to path (strategic dead hedges)

## 7) Increase educational amenity of habitats

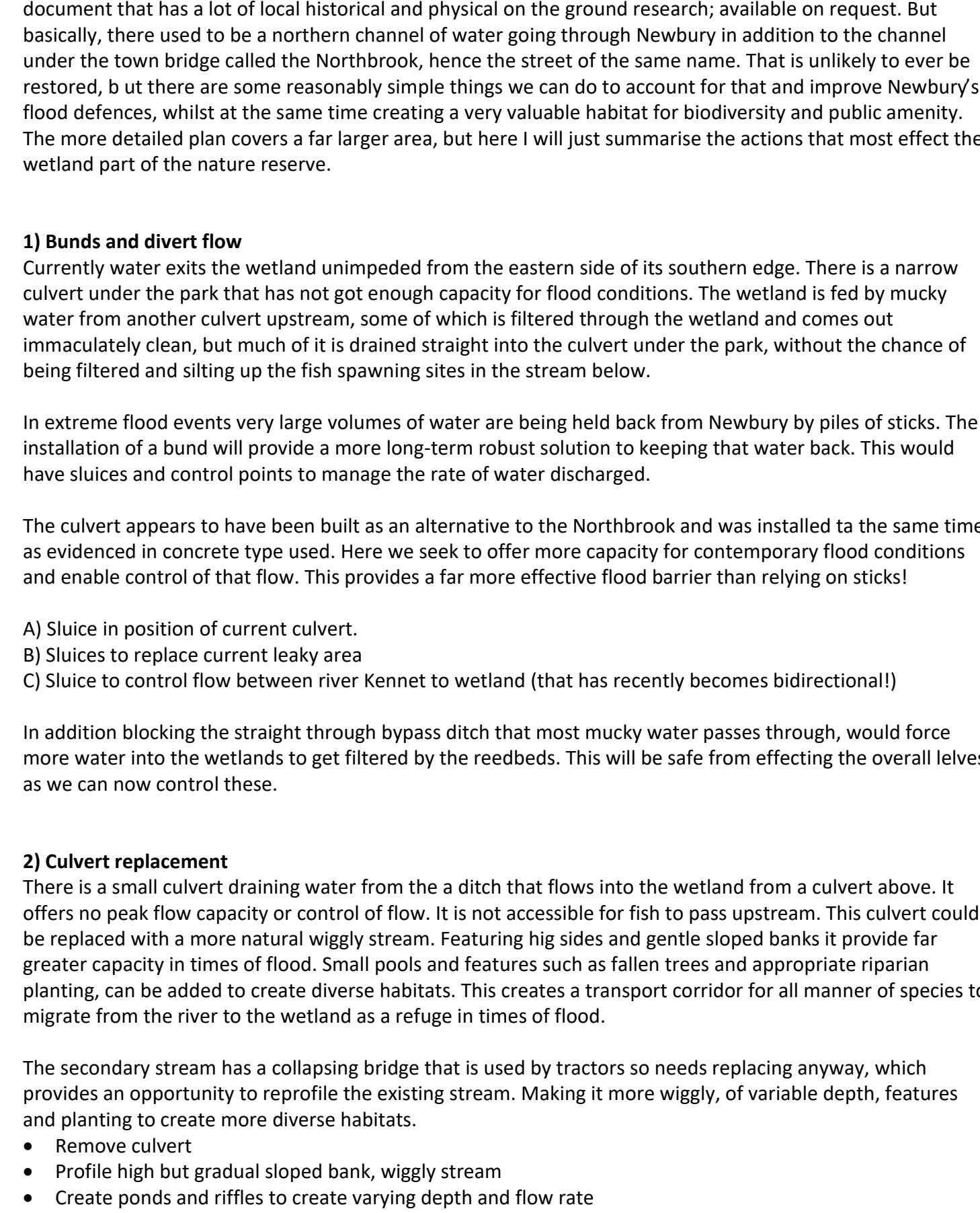
We made a very basic carpark earlier, but we now improve the accessibility of that, for wheelchairs and pushchairs. This requires a solid surface and improved grading of access paths. We will also improve our disabled drop off point at the western end of Moor lane.

- Procurement and delivery of Type 2/3 MOT
- Distribute and whacker plate, firm and flat
- Grade access paths with Type 2/3 MOT and whacker plate solid
- Edging and fence where necessary

## 9) Diversify tree species

We have various Oaks and Cherry trees, but very much dominated by Hawthorn. We may wish, at the experts advice further diversify the tree species. With the rampant rabbit and deer population, this would likely require planting a small number of mature saplings with adequate protection.

# Nature Reserve Phase 2 - Map



# Nature Reserve Phase 3

Phase 3 has many motivations behind it, but is more complex to achieve as it involves multiple land owners and has implications to flood fence of Newbury; if done well a positive one. I have a far more detailed document that has a lot of local historical and physical on the ground research; available on request. But basically, there used to be a northern channel of water going through Newbury in addition to the channel under the town bridge called the Northbrook, hence the street of the same name. That is unlikely to ever be restored, but there are some reasonably simple things we can do to account for that and improve Newbury's flood defences, whilst at the same time creating a very valuable habitat for biodiversity and public amenity. The more detailed plan covers a far larger area, but here I will just summarise the actions that most effect the wetland part of the nature reserve.

## 1) Cullverts and divert flow

Classic river wetland exists the wetland unimpeded from the eastern side of its southern edge. There is a narrow culvert under the park that has not got enough capacity for flood conditions. The wetland is fed by mucky water from another culvert upstream, some of which is filtered through the wetland and comes out immaculately clean, but much of it is drained straight into the culvert under the park, without the chance of being filtered and silted up the fish spawning sites in the stream below.

In extreme flood events very large volumes of water are being held back from Newbury by piles of sticks. The installation of a bund will provide a more long-term robust solution to keeping that water back. This would have sluices and control points to manage the rate of water discharged.

The culvert appears to have been built as an alternative to the Northbrook and was installed at the same time as evidence in concrete type used. Here we seek to offer more capacity for contemporary flood conditions and enabled control of that flow. This provides a far more effective flood barrier than relying on sticks!

- A) Sluice in position of current culvert.
- B) Sluices to replace current leaky area
- C) Sluice to control flow between River Kennet to wetland (that has recently becomes bidirectional!)

In addition blocking the straight through bypass ditch that most mucky water passes through, would force more water into the wetlands to get filtered by the reedbeds. This will be safe from effecting the overall levels as we can now control these.

## 2) Culvert replacement

This is a small culvert draining water from the a ditch that flows into the wetland from a culvert above. It offers no peak flow capacity or control of flow. It is not accessible for fish to pass upstream. This culvert could be replaced with a more natural wiggly stream. Featuring high sides and gentle sloped banks it provide far greater capacity in times of flood. Small pools and features such as fallen trees and appropriate riparian planting, can be added to create diverse habitats. This creates a transport corridor for all manner of species to migrate from the river to the wetland as a refuge in times of flood.

The secondary stream has a collapsing bridge that is used by tractors so needs replacing anyway, which provides an opportunity to reprofile the existing stream. Making it more wiggly, of variable depth, features and planting to create more diverse habitats.

- Remove culvert
- Profile high but gradual sloped bank, wiggly stream
- Create ponds and riffles to create varying depth and flow rate
- Introduce obstacles and features such as rocks, tree stumps
- Plant appropriate riparian and river plants

## 3) River restoration

Classic river restoration typical of many successful projects across the country. The actual interventions need to be recommended by expert scientific advice, but may include:

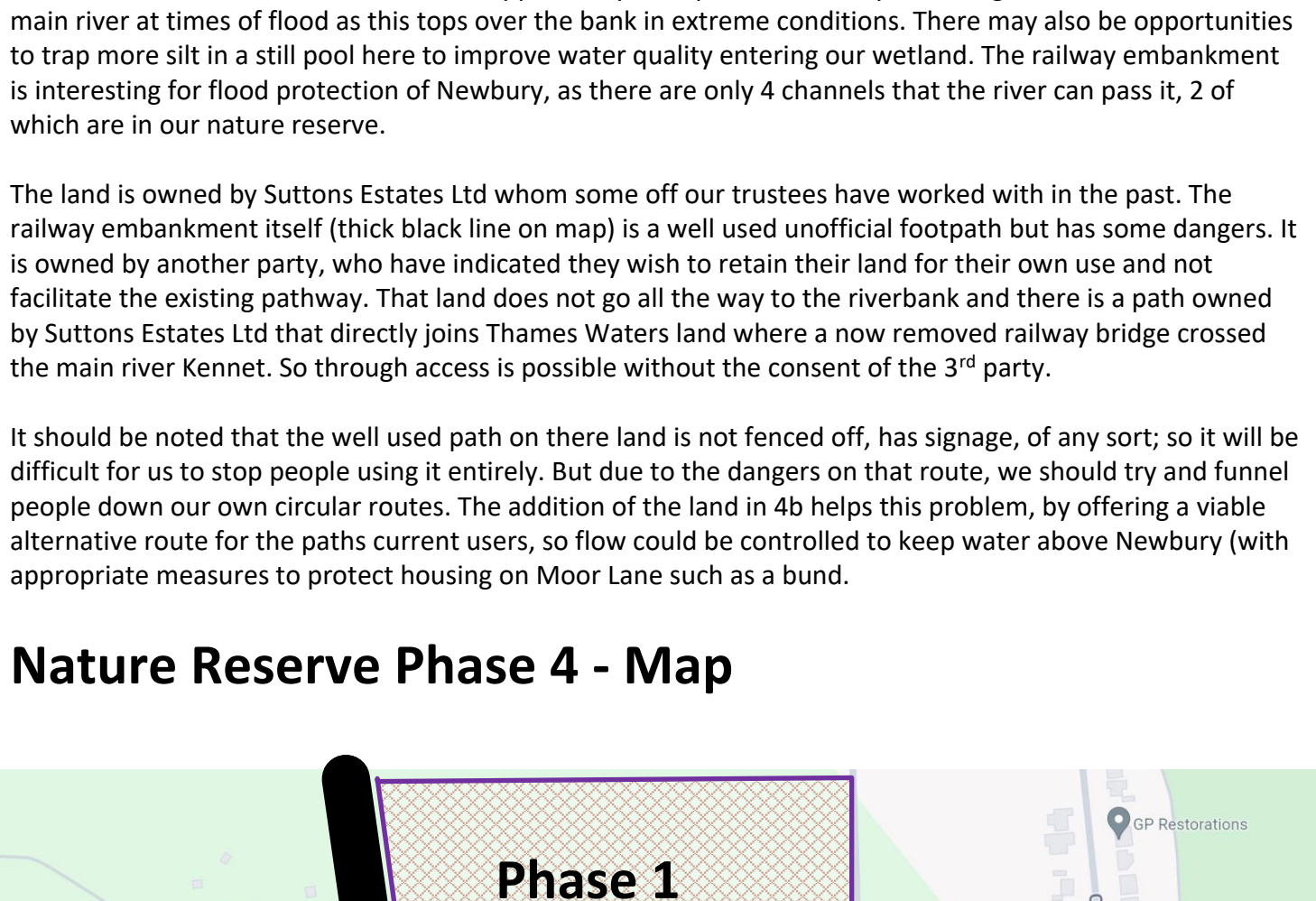
- Enhance features and varying levels and wiggles to create diverse habitats and flow
- Appropriate planting of in channel and riparian flora
- Reduce shade by tree thinning on southern bank
- Protect riparian plants from Dexter cattle with safe zones of fenced river bank
- Crayfish trapping
- High pressure gravel cleaning of introduction of new gravel and coarse sands in heavily silted traditional fish spawning grounds

## 4) Complete circular path from leisure centre

There is existing public foot access across the park and an informal circular route around the wetlands. We wish to connect the wheelchair/pushchair accessible path from phase 2 to the tarmac of the paths in the park behind the leisure centre. Thus completing an all season, accessible to all, circular route from the leisure centre around the wetlands and park.

An additional footbridge on the southern end of the new stream would provide better amenity of the new habitat for the public as a beauty spot. Consideration also needs to be given for vehicle access to the public slipway, which is also used by the emergency services.

# Nature Reserve Phase 3 - Map



# Nature Reserve Phase 4

There are some small pockets of land that would be beneficial to have under the umbrella of our custodianship. They offer more diverse habitats from the rest of our land. Any such plans are subject to discussions with the various landowners, but could include such areas and ideas as below.

## 4A Otter & Lizard habitat

This is an isolated piece of land with a lake/swamp in the middle that is inhabited by otters. The disused railway embankment has a unique microclimate on the old track bed. This warm, sunny and dry habitat is popular with lizards that bask in the sun. This very dry and sunny area is quite unique in the local area and a very different habitat to the nature reserve. It has a good population of Lizards that bask in the sun on the warm ballast of the old railway bed.

NEWT are purely interested in scientific study of the land and only want the owners permission to survey the wildlife, using such methods as trail cameras. If a potential arises for an intervention for habitat improvement, ecologists and the landowner can agree on any plans at such time. There would be no public access enabled to this area, but it is understood that a fishing club currently uses one bank, which would be unaffected by anything we do.

As tree cover has grown, the area has become less sunny and will eventually be more like the railway embankment on the other side of the river, which is shady and damp. Some minor tree work could be of benefit to the Lizards.

## 4B Forest Swamp

This small pocket of land is sandwiched between the main river Kennet and the disused railway embankment. A culvert under the river bubbles up in a deep pool and this forms the brook that goes into the wetlands of our main nature reserve of phase 2. The area is a thick swamp with tall Alders, with lots of fallen and standing dead wood. There is a path that hugs the river bank which is seemingly well used, but hard to access at the northern end where it joins Moor Lane.

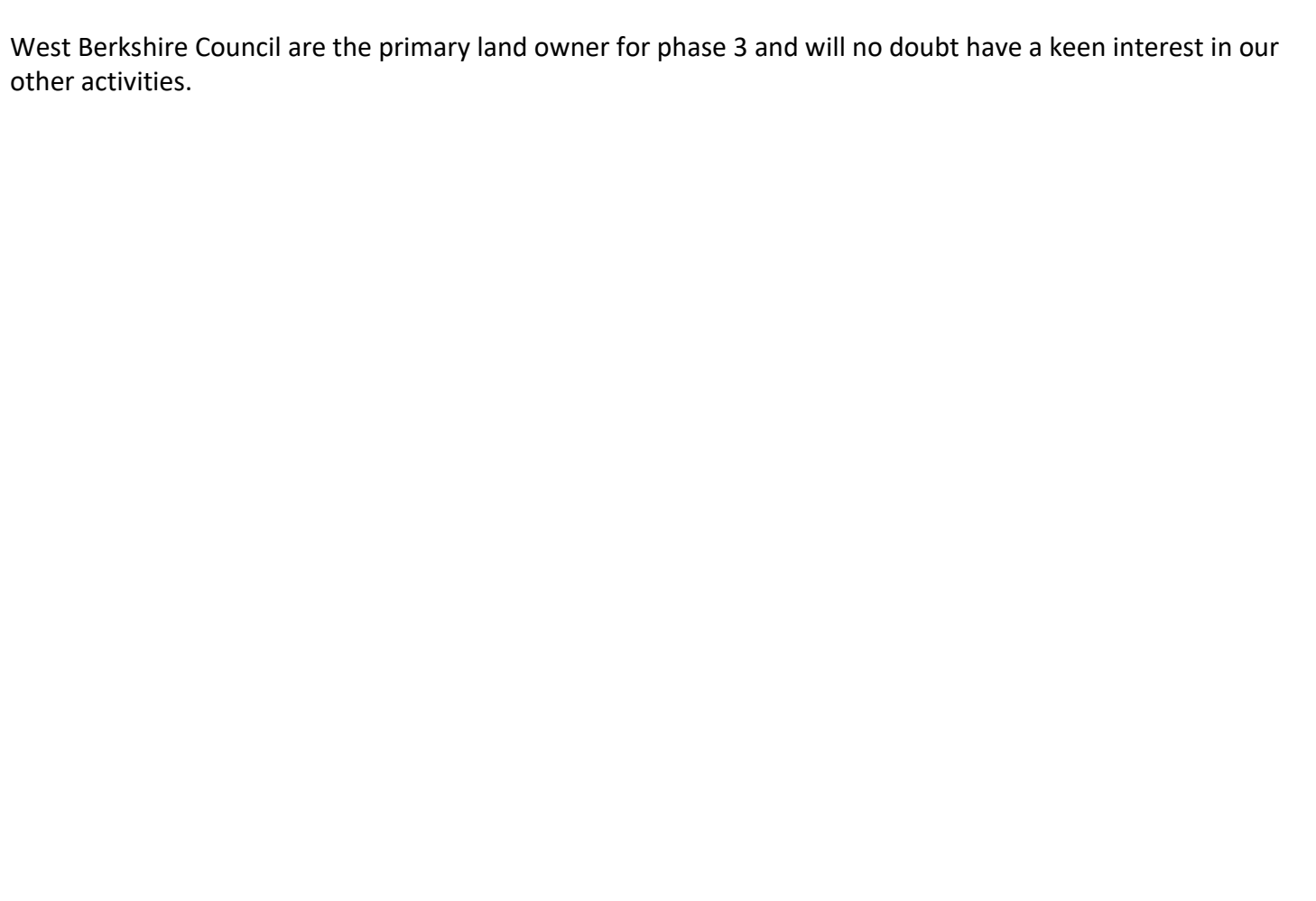
This area of land is of interest as it is a different habitat to our other wetland due to the tall Alder and some Ash trees. It would create a circular extension walk on the nature reserve, without too much effort in doing so that would allow scenic views of the river Kennet. Some tree work would need to be done to make the area safe for the public, but as they access this area anyway, it would be better to do so.

The culvert supplies very muddy water into the wetlands. In times of flood the river tops over the bank and free flows into the wetlands. There is an opportunity to improve the ability to manage water flow from the main river at times of flood as this tops over the bank in extreme conditions. There may also be opportunities to trap more silt in a still pool here to improve water quality entering our wetland. The railway embankment is interesting for flood protection of Newbury, as there are only 4 channels that the river can pass it, 2 of which are in our nature reserve.

The land is owned by Suttons Estates Ltd whom some of our trustees have worked with in the past. The railway embankment itself (thick black line on map) is a well used unofficial footpath but has some dangers. It is owned by another party, who have indicated they wish to retain their land for their own use and not facilitate the existing pathway. That land does not go all the way to the riverbank and there is a path owned by Suttons Estates Ltd that directly joins Thames Waters land where a now removed railway bridge crossed the main river Kennet. So through access is possible without the consent of the 3<sup>rd</sup> party.

It should be noted that the well used path on there land is not fenced off, has signage, of any sort; so it will be difficult for us to stop people using it entirely. But due to the dangers on that route, we should try and funnel people down our own circular routes. The addition of the land in 4b helps this problem, by offering a viable alternative route for the paths current users, so flow could be controlled to keep water above Newbury (with appropriate measures to protect housing on Moor Lane such as a bund).

# Nature Reserve Phase 4 - Map



# Nature Reserve Phase 5

From phase 1 to 4, NEWT will have over 40 acres of land to manage. That is enough for us to manage and fulfills our ambitions of creating a wetland nature reserve. However it is worth noting, that we are a mere couple of miles away from the next river restoration project upstream, and that from the next one above that, and so on to Marlborough. It is not hard to imagine the benefits of connecting up the various river restoration projects in our immediate local area. Creating a connected corridor of habitat along the Kennet valley.

NEWT look forward to collaborating, sharing ideas and resources with other like-minded organisations in the catchment area.

The land immediately to the West of phase 4b, owned by Suttons Estates whom we already have contacts with, would be an obvious starting point. Suttons Estates have their own river restoration and habitat recovery schemes, it is hoped we can dovetail with them in a mutually beneficial way.

Action for River Kennet are already heavily invested in the overall connectivity and we look forward to collaborating with them on our stretch.

We will continue to work with Thames Water in ongoing scientific habitat monitoring, to facilitate the key biodiversity targets that we are committed to help achieve.

West Berkshire Council are the primary land owner for phase 3 and will no doubt have a keen interest in our other activities.