Management & M	onitoring Task/s	Location/Area	Timing	Frequency	Responsibility	Comments
Woodland copse	(iii) Check the pole the box is mounted to make sure it can safely take the weight of a ladder and box checker.  Existing hazel stools to be coppiced on a 7-year rotation (i.e. a different section of	Woodland in south east	1st September to 31st December (to avoid the	Annually	Ground staff	No hedgerow/tree/scrub cutting
	hazel to be coppiced every year for 7 years)		badger breeding season)			during Breeding Bird Season between 1st March and 31st August.
	Stools should be cut as close to the ground as possible (15cm above ground as a maximum) and cuts should be clean and sloping.  New shoots must be protected from					No trees of medium diameter or any trees with holes/lose bark/ cracks/splits to be removed until they have been inspected for the potential to support roosting bats
	browsing by deer and rabbits by covering them over with the cur brash.  If the hazel coppice does not grow well, consider reducing canopy cover to 25-30%					<ol> <li>Care to be taken if coppicing around the badger sett on the banks of the Swill Brook. (see guidance below the table)</li> </ol>
	Remaining brash to be made into habitat piles.					<ol> <li>Care to be taken when removing Ash with dieback and pulled whe possible.</li> </ol>
	Existing ash to be inspected for signs of dieback and removed as necessary.  Management to follow the guidance from Cotswolds and Vale Ash Dieback Forum (COVAD) in Appendix A of Section Two					

### **Badgers**



Badgers and their setts (homes) are protected by law and any works undertaken must ensure that the animals and their homes are not disturbed/damaged.

Full guidance is found here: Forest-operations-and-badger-setts

To avoid disturbing the badgers or their sett on the banks of the Swill Brook the following precautionary measures should be adhered to:

- 1. No trees in the immediate vicinity of the badger sett to be coppiced/felled
- 2. No trees near the sett to be uprooted
- 3. No sett entrance holes to be blocked by any felled wood. Badger sett entrances may be widespread throughout the wood. If in doubt speak to the HFG Ecologist
- 4. Work with hand tools and chainsaws only
- 5. Do not bring and use a chipper close to the badger sett to avoid disturbing the sett with noise and vibrations
- 6. No works near the sett should be carried out during January and February as these are the most sensitive months in the badger breeding season

Pike Corner S	SSSI (Figure 21)					
Management & M	onitoring Task/s	Location/Area	Timing	Frequency	Responsibility	Comments
Grazing	(i) Graze with suitable livestock where possible or manage scrub on a 5 year rotation. (ii) Remove all straw from the ground beneath goat shelters when the goats are removed.	Pike Corner – both portions	(i) End of summer (ii) Oct/Nov	Annually	Grazier/Company ecologist	Since 2019 we have been grazing the SSSI with goats following discussions with Natural England. We are monitoring their impact through a wildflower monitoring study with the Species Recovery Trust.
Ragwort control	When requested to by the grazier remove Ragwort prior to grazing  Hand pull using gloves and dispose of onsite to prevent spread off site. Disposal can include rotting down, composting, incineration or controlled burning.	Pike Corner – both portions	May-July	As requested	Grounds teams	The goats have, to date, been found to deal well with the presence of ragwort.
Fence line	Cut scrub/overgrowth back from the fence line so that access to the fence line for repairs etc is always possible  Cut scrub can be laid down on the other side of the fence.	Pike Corner – both portions	1st September to 28th February (inclusive)	Annually	Grounds team	If this gets too overgrown and there is the need to take machinery (chippers etc) on to Pike Corner, then a licence to carry out the works will be needed from Natural England.
Scrub management	Remove hawthorns, ash saplings and large areas of bramble that are growing across the grassland making it unfavourable status	Pike Corner - both portions	1st September to 28th February (inclusive)	As required	Grounds team	A licence from Natural England is required to undertake these works. Licence applications to be made in spring for the following winter season as Natural England can be slow in processing licenses.
Barn owl box	(i) Arrange nest box checks (ii) Make nest box repairs (iii) Check the pole the box is mounted to make sure it can safely take the weight of a ladder and box checker.	Corner of Somerford Lagoon	(i) May/June (ii) Winter	Annually	Ecologist/Licenced Barn owl worker	When doing repairs be aware that the box may still be in use.
Bat boxes	Allow Cotswold Water Park Bat Initiative access to the bat boxes on trees between Pike Corner and the Swill Brook	Pike Corner/Swill Brook	Twice a year	Annually	Bat workers/Estate management	These checks have been made for 12 + years and the data is part of a national bat monitoring scheme.

View citation for Site of Special Scientific Interest (SSSI) status here: Designated sites.natural england

#### Swill Brook (River) (the LME section runs from Minety Lake to the far end of Pike Corner) (Fig 22) Management & Monitoring Task/s Location/Area Timing Frequency Responsibility Comments Bankside Cut a narrow pathway through scrub, Swill Meadow section 1st September to 28th February Annually Grounds team This is to allow Butterfly Conservation vegetation leaving Blackthorn in place where possible (inclusive) access to the river bank for Brown Hairstreak egg conservation. Manage scrub on rotation to prevent the Swillbrook Lakes section (Minety Lane to 1st September to 28th February As required Grounds team (time Aim to create scrub of different ages along (inclusive) banks becoming totally scrubbed over. Do Flagham Fen) chargeable to HFG) the river. not stack cut vegetation on the edge of the river. Tree management Sensitively manage trees that are over Swill Brook 1st September to 28th February As required Grounds Team Water voles are present along this stretch hanging the river to help reduce shading. (inclusive) of the river. Water voles are fully protected under the Wildlife and Countryside Act Care taken not to trample banks and no 1981 (as amended). Water voles are cut material to be left piled on banks - this protected against intentional killing, is avoid damaging water vole burrows. capture or injury and intentional or reckless disturbance, obstruction, damage or destruction or their burrows. River Continue to Liaise with Cotswold Lakes Swill Brook Ongoing Ongoing Company ecologist Several projects have been discussed in the enhancement Trust over ways to work together to future and should be reconsidered if enhance the Swill Brook for a range of brought forwards again. wildlife. Survey for water voles or allow access for Water voles Swillbrook Summer Every 3 Company Cotswold Lakes Trust to carry out surveys years ecologist/Cotswold Lakes Trust

# **SECTION TWO - WIDER ESTATE**

Management & M	onitoring Task/s	Location/Area	Timing	Frequency	Responsibility	Comments
Cut and collect	Arrange a tractor and baler to cut and collect the meadow. Area around the Rugby pitch to be left uncut and cut only every 2 years.	Swill Meadow	Late July – mid August	Annually  (every 2 years for the area around the Ruby pitch)	Grounds Team	Leaving the area around the rugby pitch will create a mosaic of different habitats on Swill meadow and will leave an area for invertebrates to over winter, and will leave seed heads for birds over winter.
Wildflower seed collection	Continue work with AONB Glorious Grasslands team to allow wildflower collection.	Swill Meadow	As decided by Glorious Grassland	On occasion	Glorious Grasslands/Ecologist	A proportion of any seed collected to be returned to Lower Mill for use in areas to be determined with Ecologist.
Tree management	Sensitively manage trees that are over hanging the river to help reduce shading.  Care taken not to trample banks and no cut material to be left piled on banks – this is avoid damaging water vole burrows.	Swill Brook	1st September to 28th February (inclusive)	As required	Grounds Team	Water voles are present along this stretch of the river. Water voles are fully protected under the Wildlife and Countryside Act 1981 (as amended). Water voles are protected against intentional killing, capture or injury and intentional or reckless disturbance, obstruction, damage or destruction or their burrows.
Hedgerow management	Cut and lay 100m of hedgerow along the Otter Corridor. Leave any Blackthorn uncut with red wool tied to it.	Otter Corridor hedgerow (A)	Winter – after Brown hairstreak egg surveys have been carried out	Annually until all hedgerow is laid	Grounds Team	No cutting/laying to be carried out until the Brown Hairstreak butterfly surveys have been completed (the timing of this may vary), so that eggs are visible and blackthorn supporting them won't be cut.
	Once whole hedge has been laid then cut hedge on 3-year rotation (i.e. 1/3 <sup>rd</sup> cut every year)		1 <sup>st</sup> September to 28 <sup>th</sup> February (inclusive)	Annually	Grounds Team	
	Cut the 2m scrub/grassland strip running along the hedgerow on a 3 year rotation (i.e. a different 1/3 <sup>rd</sup> annually)  [this will allow blackthorn scrub to develop but cutting will keep the vigorous		1 <sup>st</sup> September to 28 <sup>th</sup> February (inclusive)	Every 3 years	Grounds Team	
Blackthorn management	dog wood growth in check]  Manage the blackthorn through coppicing on rotation to create a mosaic of ages, increasing Years 1-2 growth on which the butterflies rely.	Sections B	Winter – after Brown hairstreak egg counts have been carried out	Annually	Grounds team	Blackthorn is the larval food plant for the brown hairstreak butterfly. Fresh growth of Years 1-2 is the optimal for egg laying.
Footpaths	Mow both footpaths that run along either side of the meadow. Do not mow paths through the middle of the meadow. Do not make the footpaths unnecessarily wide.	Swill Meadow	March-October	Annually	Grass cutting team	Keep Kubota use to a minimum and ensure they stick to footpaths and don't damage the meadow.
Ragwort control	If baled hay will be used for livestock then ragwort should be removed from the meadow prior to the cut.	Swill Meadow	May-July	Annually	Grounds team	Where grazing or hay baling isn't carried out Ragwort will be retained as it has considerable value to wildlife, supporting

## **SECTION TWO - WIDER ESTATE**

LME - LEMP (2020 - 2027) - SECTION TWO

Swill Meadow (Wildflower meadow) (Fig 23)						
Management & Monitoring Task/s	Location/Area	Timing	Frequency Responsibility	<u>Comments</u>		
Hand pull using gloves and dispose of onsite to prevent spread off site. Disposal can include rotting down, composting, incineration or controlled burning.				around 80 species of invertebrate. (see Ragwort-mythbuster		

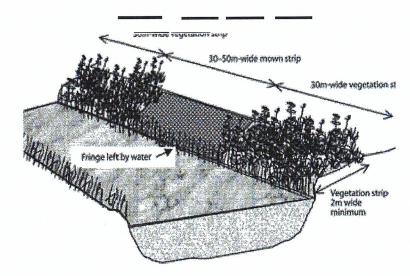
Management & Mo	nitoring Task/s	Location/Area	Timing	Frequency	Responsibility	<u>Comments</u>
Tree and scrub management	Thin out/pollard bankside trees as required. No area/tree to be thinned/recut within 5 years.	River Thames	1st September to 28th February (inclusive)	Every 5 years	Grounds team	The entire Thames corridor on the Estate is home to Water vole and a wide range of songbirds in the hedgerows. Management of the habitats on either side of the river is done to create optimal habitat for these species.
Clear excess weed and emergent vegetation from central section of channel	Excess weed can be carefully cleared from the central channel, leaving vegetation at both sides of the river	River Thames	September-October Weed-raking must not commence before 1st August.	Every 2 years	Grounds team	Ensure clearance is undertaken sensitively due to the presence of water voles (see guidance below). All weed to be removed from the bank to avoid blocking water vole burrows. Leave fringe of vegetation on both sides of channel undisturbed.
Bankside management	Strim bankside vegetation in each section on a 3-year rotation (i.e. a different 1/3 <sup>rd</sup> cut annually). In each year cut sections on different banks.  Cut as detailed below i.e. 30m cut inbetween uncut areas of the same size.  Where the section is too short for 30m rotational cutting, cut 10m annually.	Each section as below:  (i) Stream from Mill Lane to River Thames (alongside the allotment area)  (ii) Spine Road bridge to Estate bridge  (iii) Estate Bridge to Mill  (iv) Weir to Round House  (v) Round House to Metal Bridge  (vi) Metal Bridge to Farmhouse Bridge  (vii) Farmhouse Bridge to end of Estate	October-February	Annually	Grounds Team	The optimum time of year to carry out these works is October when water vole populations are still high. Vegetation in watercourses has time to recover before it gets cold, leaving shelter and food for water voles overwinter.
	Block up gaps along the Thames that have formed naturally or by the actions of dogs accessing the water. This can be done by:  (i) Planting with native hedgerow species  (ii) Using cut wood/brash/logs to create a dead hedge	Where needed	(i) Planting November- March (ii) Dead-hedging – any time	Ongoing	Grounds team	This is done to help reduce trampling of water vole habitat and disturbance to the water voles.
Hedgerow management	Trim hedgerow to minimise shading over watercourse and enhance the hedgerow for songbirds.  This should be done as required and not on an annual basis.	Where required	1st September to 28th February (inclusive)	As required	Grounds team	

Management & Monitoring Task/s		Location/Area	Timing	Frequency	Responsibility	Comments
Invasive species (Himalayan balsam)	Hand pull Himalayan balsam by grasping the base of the stem and giving a steady gentle pull. It comes up easily and should bring the shallow roots with it.  Create a big pile of balsam and allow it to compost down. This stops the balsam regrowing from the roots or the nodules on the stem.  Do not pile on the river bank to avoid blocking any water vole burrows.	All along river within Estate boundary	April-June	Annually	Grounds team	It must be pulled before it sets seed, so needs to be removed before July.
Monitor water voles	Suitably qualified people to carry out surveys for water vole presence, looking for signs (latrines, droppings, feeding signs, feeding piles)	All along river within Estate boundary	April-September	Every 2- years	Ecologist	Allow access to the Cotswold Lakes Trust for their water vole monitoring project
Fencing	Look at fencing between the river and the car-parking area at the end of Mill Lane. The bankside is getting reduced here by poor parking and dog swimming and the water voles are being disturbed.	Mill Lane	October 2022	Once	Habitat First Group	The fencing will need to adhere to the Environment Agency's' fencing which can be erected without a permit and you may need to liaise with the Highways Agency.  The fencing will need to be on the road edge to comply as below:  "You can put fencing near a main river and on a floodplain but not on the bed or banks of a main river.  The fencing must either be post and rail or post and wire. If you use wire, it must be either wire strands or at least 100mm spaced mesh."
River enhancement	Work with Cotswold Lakes Trust to enhance the River Thames downstream of the Estate to Ashton Keynes to create a better wildlife corridor to allow the spread of water voles.	River Thames	Ongoing	Ongoing	Ecologist and Cotswold Lakes Trust	

#### **Water Voles**

Water voles are present on the section of the River Thames that flows through Lower Mill Estate. Management of the river and its banks must therefore be carried out sensitively to avoid negatively impacting water voles. The best practice guidance listed below should be followed:

- · Cut only one bank in a particular year.
- Leave a fringe of vegetation untouched at the water's edge.
- Avoid areas supporting dense colonies of water voles or give these areas special small-scale treatment.
- Cut vegetation in a patchwork of alternating strips no greater than 50 m long in a two or three year rotation (see diagram below).
- If there is no need to cut to ground level, set the cutting height to the highest possible setting. A cutting height of 15 cm will ensure water voles are left some cover.
- Mowing of river banks should not take place during April, May and June inclusive unless part of health and safety operations.
- Cuttings should be removed from the banks to avoid them blocking water vole burrows or smothering and killing the vegetation beneath.
- Consider the timing of vegetation management carefully. Ideally, where alternative patches of vegetation are to be left standing, it is best to delay cutting until breeding has finished in late autumn. If standing vegetation cannot be left it is better to cut the vegetation before mid-September, (but after July to allow birds to finish breeding), so that it can recover to some extent before the end of the growing season. In this case, leaving a minimum of 15 cm cut height is very important.
- Weed-cutting shall not take place during April, May and June. All weed to be removed from the bank to avoid blocking water vole burrows.
- Weed-raking shall not commence before 1st August. All weed to be removed from the bank to avoid blocking water vole burrows.
- Tree and bush works shall only take place between October and end of February.
- Cutting of common reed is better left until mid-August or later, the later the better.

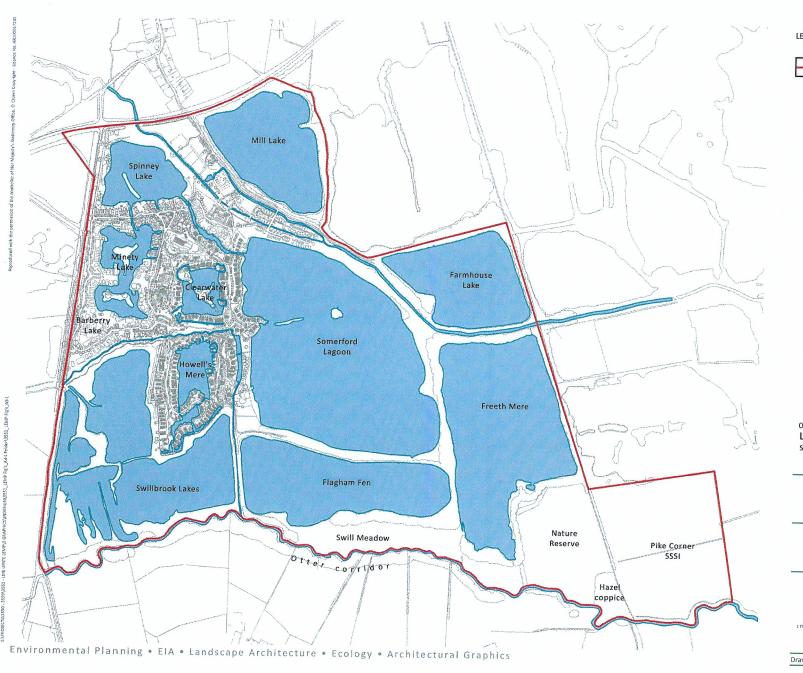


Management & Monitoring Task/s		Location/Area Timing	Frequency	Responsibility	Comments	
Black poplar (Populus nigra)	Ensure 2 planted Black poplar are kept free of weed and scrub growth (Section E).	North of Spinney Lake in front of gas tanks	Ongoing	Ongoing	Grounds team	
Invasive species management	Continue to monitor northern shore for new growth of Japanese knotweed (Fallopia japonica) and treat as appropriate (Section E) (Prevent-japanese-knotweed-from-spreading.)	Northern end of lake around gas tanks	Ongoing	Ongoing	Grounds team	Treatment to be carried out by Grounds team member with pesticide-use training
Scrub management for reptiles	Cut the bramble along the western shore (D) in a wave-like pattern to create sheltered bays for roosting waterbirds and sheltered scrub edges for reptiles and invertebrates. Ensure planet of bramble/scrub is retained so that a mosaic of habitats is created.	Western shore line	1st September to 28th February (inclusive)	Annually	Grounds team	

Management & Monitoring Task/s		onitoring Task/s Location/Area Timing			Frequency Responsibility Comments		
				rrequency	Responsibility	<u>Comments</u>	
Staff parking	(i) Ensure cars are only parked on designated parking area and that they are reversed park to avoid light spilling onto the hedgerow.  (ii) Maintain buffer zone between car parking and hedgerow to prevent root damage to trees and reduce disturbance to the hedgerow.	Allotment	When in use	Ongoing	Estate management		
Allotment	(i) Do not use pesticides or herbicides (ii) Grow as many pollinator-friendly plants as part of the allotment (iii) Maintain reptile hibernacula and bug hotel (iv) Collect and use rainwater (v) Use no peat-based composts (vi) Prevent spread of any nonnative plants (vii) Propagate plants from existing on-site plants where possible to reduce	Allotment	Ongoing	Ongoing	Allotment team		
Rough grassland	Rough grassland and along the river bank behind the orchard should be retained as a priority wildlife habitat. A different section of this grassland should be strimmed annually to a height of 130mm and the arisings removed.	Northwest corner and along river bank	Late July/August	Annually	Allotment team		
Compost area	(i) Only drive vehicles on the hard standing areas  (ii) Use a suitable liner at the base of each compost bay to minimise run-off of nutrient rich liquid into the ground  (iii) Any green waste not stored in a compost bay (prior to processing), must be piled away from any watercourse  (iv) Use as much by-product from the green waste on site as possible  (v) Ensure all invasive plant species are disposed of appropriately and not incorporated into the compost	Compost bays and surrounds	Ongoing	Ongoing	Grounds team		

Management & Monitoring Task/s		itoring Task/s Location/Area Timing	Timing	Frequency	Responsibility	Comments
Fencing	Fencing that runs parallel to the River Thames must be kept intact and should be kept free from scrub.	Fencing	Ongoing	Ongoing	Grounds team	
Hedgerows	Hedgerows around the allotment area are to be gapped up. Hedges should be managed to maintain them as dense screens and suitable wildlife corridors.	All hedgerows	Ongoing – management only outside of bird breeding seasons	Ongoing	Grounds and Allotment teams	
Sat box	Pole-mounted bat box adjacent to the allotment to be monitored as part of the CWP Bat Initiative and repaired as necessary following guidance from a licensed bat worker.	Wildflower area adjacent to allotment	Ongoing	Ongoing	CWP Bat Initiative and Grounds Team	

# **FIGURES**





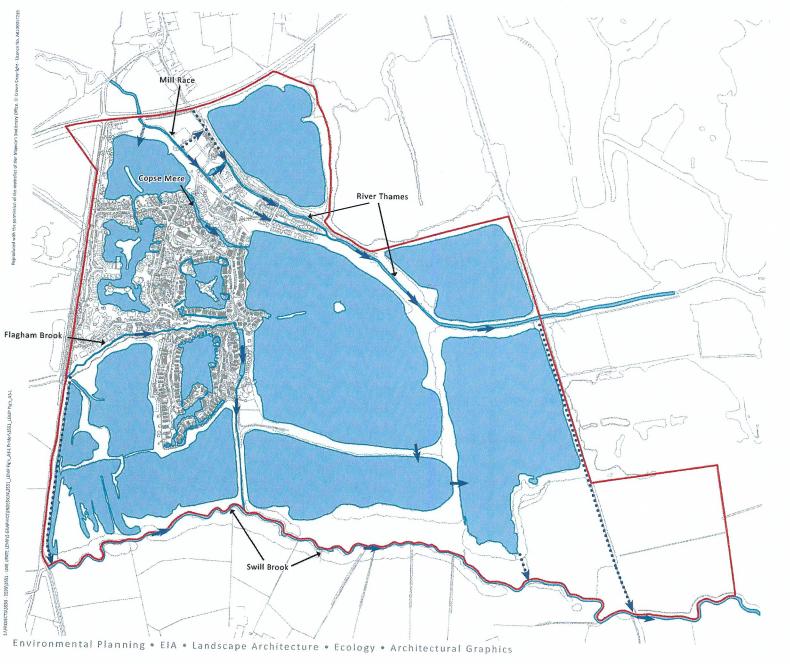
LOWER MILL ESTATE
LANDSCAPE AND ECOLOGICAL
MANAGEMENT PLAN
2022 - 2027

FIGURE 1 Estate map



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T: ~44 (0))117 923 0455 E: enquiries@thebodeard.prectice.com
WAWLITE(landmarkpractice.com)
WAWLITE(landmarkpractice.com)

Drawn: SB Checked: AS Date: 14 Jun 22



Estate boundary



Flow direction



Flood relief route



Flow direction

0 30 60 120 180 240 300 m N Scale 1:7,500 @A3

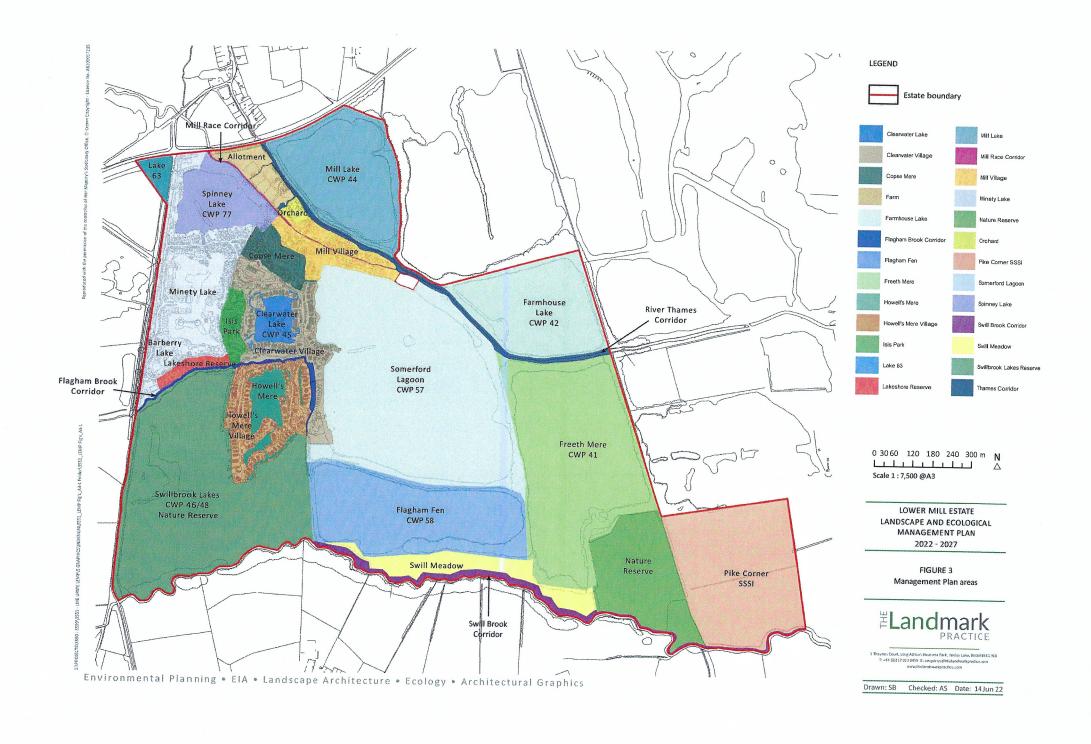
LOWER MILL ESTATE LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN 2022 - 2027

FIGURE 2 Water flow interaction throughout Lower Mill Estate



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 www.thelandtnarkgradice.com

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Estate boundary



Section reference in prescription table



Lake edge - designed to be a wildlife corridor for the safe passage of amphibians and reptiles; birds; invertebrates; and small mammals.

> Refer to Section One - Villages for management and monitoring tasks



0 4 8 16 24 32 40 m **N** 

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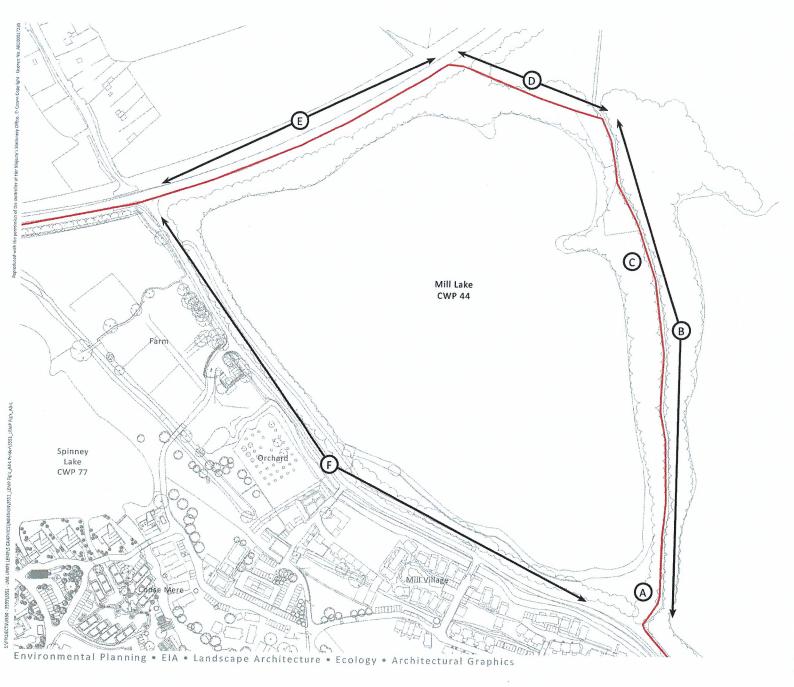
LOWER MILL ESTATE LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN 2022 - 2027

FIGURE 6 Spinney Lake (CWP 77) (refer to relevant prescription table)



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 www.thelandmarkpractice.com

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Estate boundary



Section reference in prescription table



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LOWER MILL ESTATE LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN 2022 - 2027

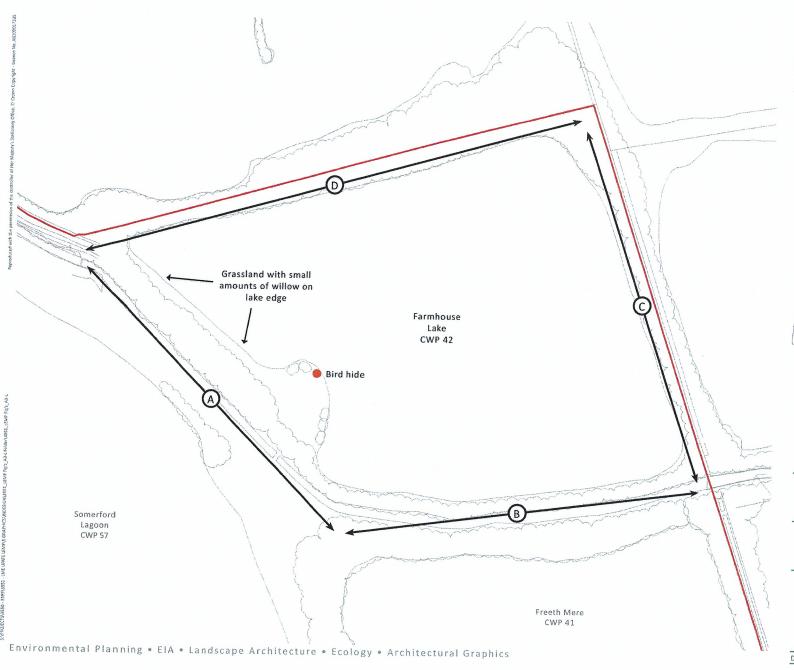
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FIGURE 15 Mill Lake (CWP 44) (refer to relevant prescription table)



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Estate boundary



Section reference in prescription table



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LOWER MILL ESTATE LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN 2022 - 2027

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FIGURE 16 Farmhouse Lake (CWP 42) (refer to relevant prescription table)



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