

including bulrush, great willowherb, fool's watercress and white willow, as well as the loss of the desirable species watercress. These negative changes indicate a general lack of management within the wetland areas of lake D which is allowing the proliferation of vigorous and undesirable species, this could potentially lead to impoverishment of the macrophytic flora over time and development of a species-poor community dominated by bulrush and willow scrub. The banksides and areas of damp to dry ground within the lake basin continue to support a species-rich grassland community comprising numerous desirable axiophytes such as yellow rattle and common quaking grass. It is considered that these areas of grassland within the lake D basin are a botanically diverse and ecologically valuable habitat that is worth conserving. In 2018 the bankside vegetation was noted to be rather overgrown with tall ruderal species such as creeping thistle forming stands in places, this indicates a general lack of grassland management within the lake D habitat area.

- Management recommendations

Pingle Brook

- 4.21 Stands of great willowherb and dense growth of fool's watercress should be removed from the stream channel on an annual basis. This will control the spread and dominance of these species within the stream channel and create open areas suitable for colonisation by desirable macrophytes.
- 4.22 The grassy margins and banks of the stream should be cut on an annual basis during late summer (August/September) with all arisings removed. This should reduce the density of the sward and prevent it from overshadowing the stream channel and competing with the macrophytic species, it will also provide a more attractive herb-rich sward along the stream margins.

Lake A

- 4.23 The vegetation occupying the banksides and dry areas within the lake basin should receive an annual cut in late August/early September with removal of all arisings. This will enhance the vegetation structure and increase plant diversity within these areas forming a herb-rich grassland community over time.

- 4.24 The pool of open water within the lake basin could potentially be enhanced with the installment of coir matting which is pre-planted with native macrophytic vegetation (Salix, 2018).

Lake B

- 4.25 Minor coppicing of willows and some removal of bulrush should be undertaken within lake B to prevent the spread/dominance of these species. It is recommended that up to 20% of the existing willows are coppiced and up to 30% of the bulrush is cleared and removed. This management should be repeated on an annual to biannual basis depending on the level of successive regrowth.
- 4.26 The bankside vegetation should receive an annual cut in late August/early September with removal of all arisings. This will enhance the vegetation structure and increase plant diversity forming a herb-rich grassland community over time.

Lake C

- 4.27 Some minor coppicing of willows and removal of bulrush should be undertaken within lake C. It is recommended that up to 10% of the existing willows are coppiced and up to 30% of the bulrush is cleared and removed. This management should be repeated on an annual to biannual basis depending on the level of successive regrowth. Approximately 40% of willow scrub should be retained on the lake margins to provide a habitat resource for invertebrates and birds.
- 4.28 The vegetation within the damp to dry areas of the lake basin should be cut with removal of all arisings on a biannual basis in order to maintain plant diversity and restrict colonisation by scrub and tall ruderals.
- 4.29 An additional 1.5 metre margin of wildflower grassland should be established around the margin of the lake and excluded from intensive mowing with the aim of conserving the notable orchid species. This margin of grassland together with the bankside vegetation should receive an annual cut in late August/early September with removal of all arisings. This management will enhance vegetation structure and increase plant diversity forming a herb-rich

grassland community over time, it will also create suitable conditions for the identified orchid species to proliferate.

Lake D

- 4.30 Some removal of bulrush, great willowherb and fool's water-cress should be undertaken within the wet areas of lake D. It is recommended that approximately 30% of the existing bulrush is cleared and removed. All great willowherb and fool's watercress should also be cleared and removed from the aquatic habitat areas. This management should be repeated on an annual to biannual basis depending on the level of successive regrowth.
- 4.31 The bankside vegetation and grassland areas within the lake basin should be managed with an annual hay cut in late August/early September together with removal of all arisings. This will maintain the condition of the grassland habitat and preserve/enhance species diversity within the sward.
- 4.32 Targeted treatment of thistles (*Cirsium spp*) and common nettle within the lake basin and along the banks, via hand-pulling and/or spot treatment, should be undertaken. This will prevent further proliferation of these species.

Habitat management summary

- 4.33 A summary of the recommended management prescriptions for each of the monitored habitat features on site together with recommended timings for habitat management is presented in table 25 below.

Table 25: Habitat management summary for Kingsmere, Bicester

Habitat feature	Management prescription	Timing
Translocated calcareous grassland plot	Hay cut and removal of all arisings.	Once in late August/early September and a second cut in late March/early April (second cut for next two years only).
Informal grassland areas	Hay cut and removal of all arisings.	Late August/early September.
Hedgerows	Light biannual flailing with hedgerows sculpted into a rounded A-shape during flailing.	Between the months of September and February (inclusive).

	Planting up any gaps and thin or damaged sections within the hedgerows on site using a variety of native shrubs. Any dead whips to be removed and replaced with fresh shrub planting.	Between the months of September and February (inclusive).
	Retention and management of a 1–2 metre margin of field layer vegetation adjacent to all hedgerows on site. Management will comprise a biannual cut and removal of all arisings.	Late August/early September.
Pingle Brook	Stands of great willowherb (<i>Epilobium hirsutum</i>) and dense growth of fool's watercress (<i>Apium nodiflorum</i>) to be removed from the stream channel on an annual basis.	Any time.
	The grassy margins and banks of the stream to be cut on an annual basis with all arisings removed.	Late August/early September.
Lake A	Vegetation occupying the banksides and dry areas within the lake basin to be cut on an annual basis with all arisings removed.	Late August/early September.
Lake B	Coppicing of up to 20% of the existing willows (<i>Salix spp</i>) within the Lake basin and clearance/removal of up to 30% of bulrush (<i>Typha latifolia</i>).	Between the months of September and February (inclusive).
	The bankside vegetation to be cut on an annual basis with all arisings removed.	Late August/early September.
Lake C	Coppicing of up to 10% of the existing willows within the Lake basin and clearance/removal of up to 30% of bulrush.	Between the months of September and February (inclusive).
	Vegetation within the damp to dry areas of the lake basin to be cut with removal of all arisings on a biannual basis.	Late August/early September.
	Bankside vegetation and a 1.5 metre margin of adjacent grassland to be cut	Late August/early September.

	on an annual basis with all arisings removed.	
Lake D	Clearance/removal of all great willowherb and fool's watercress and up to 30% of bulrush from the wet areas of the lake basin.	Between the months of September and February (inclusive).
	Bankside vegetation and grassland areas within the lake basin to be cut on an annual basis with all arisings removed.	Late August/early September.
	Targeted treatment of thistles (<i>Cirsium spp</i>) and common nettle within the lake basin and along the banks, via hand-pulling and/or spot treatment.	Any time.

5.0 References

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Appendix I: Site plan

