BALLARD MEADOW AND WOODLAND

ANNUAL REPORT
FOR
APRIL 2021 – MARCH 2022

Bluebells, Woar Copse

INTRODUCTION

This is the second annual report provided by The Friends of Ballard Water Meadow. Our work on the site is directed by the Management Plan (2020-2024) where we follow the Work Programme from which our Annual Work Plan is derived. Like many plans, and our work plan is no different, the majority of work has been achieved whilst some tasks, often outside our control, remain wanting.

1. RECORDING

Two types of records are kept; events which occur on-site that have a bearing on management or wildlife including volunteer effort (see below), and wildlife recording that is more structured taking the form of a detailed survey, census or transect.

There are plants which are associated with particular habitats and are known as Indicator Species. These are recorded annually, by individual compartment. Each of the meadow indicator species is assessed more closely in terms of either counts or the percentage cover over the ground (where individuals are too numerous to count easily), whereas the woodland element is recorded, simply as presence or absence. Results from the meadow in 2021 are shown in APPENDIX 1. All plants recorded to date by year, across the whole site (our Master List) is shown in APPENDIX 6.

The plant list is by no means complete and new species are recorded each year. In 2021 there were six new species found in the meadow (Sneezewort, Wavy Bitter-cress, Water Horsetail, Butterbur, Hairy Tare and Early Dog-violet) and four in the woodland (Pill Sedge, Rosebay Willowherb, Yellow Archangel and Wood Sage).

Heath Spotted-orchid, Ballard Meadow

There are a number of birds that use the site. An annual Common Bird Census is a way of assessing those birds which establish territories and may use the site for breeding. A bird seen in April for example, does not mean it is breeding but if recorded singing, or carrying nesting material, then it probably means it is establishing, or has, a territory. Full details of the census done for 2021, is available on the Friends of Ballard Water Meadows website and a summary is shown in APPENDIX 2.

New Milton Town Council and the Group jointly employed a local entomologist, Bryan Pinchen to undertake the second annual insect survey. The results have been posted both on the Town Council's and the Group's websites. A total of 338 species were recorded in 2021 (compared to 314 in 2020), 65 of which were new to the site this year. A summary of Bryan's work is shown in APPENDIX 3.

The Butterfly Transect undertaken on the site is registered as part of the UK Butterfly Monitoring Scheme. Butterflies are counted along a fixed route and the results feed into national records via local or County recorders. This way, across the country, the status of individual species is known year by year. This year, Ann Gorman, Pam Petherbridge, Rhona Copp, Mandy Hayes and Rosemary Deveraux-Jones contributed, and the 2021 transect summary is shown in APPENDIX 4.

New for 2021, is a stream survey, sampling water chemistry and macro-invertebrates, in association with the Freshwater Habitats Trust. It was intended to run from March to August, but this has been extended, sampling monthly throughout the year when there is a flow. Elsewhere in the New Forest, streams are sampled for their water chemistry, but as far as the Group can tell, macro-invertebrates are not sampled on a regular basis. Of particular note a juvenile newt (eft) was found in May, so we know they are breeding either on-site or close-by. The result of this work is shown in APPENDIX 5.

2. MANAGEMENT

2.1 Wildlife and Conservation Management

The water in the main north-south ditch running through Ballard Meadow attracts frogs to spawn each year. The developing tadpoles face many problems, the biggest threat being a dry spring and the ditches drying-out. Despite placing sandbags to hold water back, the ditch did dry-up in April. We have no idea if any tadpoles reached maturity.

Despite the fact that we had a dry April, the moist ground is particularly suitable for Hemlock Water-dropwort. This is a native wet meadow and streamside species, but in many places, it can become dominant over more delicate, wet meadow plants. We aim to control its spread as much as possible by cutting a proportion of the flowering heads in the spring, before it sets seed. We don't cut it across the whole site, as the flowers are attractive to a wide range of invertebrates. In April and May we were joined by the Fernhill Friends on a couple of occasions who helped to cut and remove a large proportion of this invasive species. The group had a final attempt to cut and remove more plants in a few selected locations during June.

In the woodland, where we have a proliferation of another invasive species, the non-native Three-cornered Garlic, we managed to cut as many flower-heads as possible. Like the Hemlock Water-dropwort, the aim is to prevent the plant seeding and spreading. We're hopeful that, over time, we will have removed the majority of plants. The tree guards put around the recently planted hazel saplings were removed in June, we cut-back Bramble from the path edges and cut Bracken to reduce its vigour, in the two glades.

From time to time there is a build-up of leaf litter and fallen branches in places along the stream. The Town Council is obliged to maintain a flow so group members keep vigilant on their behalf, removing any build-up of debris.

We aim to keep the most disruptive habitat management work to a minimum during the April to September period. Some habitat management does inevitably have to take place. Each year at the end of July or beginning of August we cut sections (compartments) of the Meadow. This removes the year's growth after the majority of plants have set seed, helps de-nutrify the ground and allows a fresh-flush of growth before the livestock are re-introduced in September. We only managed to cut and clear a small area (M9) in early August due to equipment failure, but we hope to be back on track in 2022. We are grateful to the Town Council for taking away the piled-up cut material from all our vegetation clearance work.

The cattle arrived back on the Meadow in September. A local farmer has Dexters, a small and docile breed, ideally suited for our meadow and the number of people with dogs it attracts. On only very few occasions were dogs a nuisance, chasing the livestock.

There are a number of stakeholders in Ballard Meadow and Woodland and sometimes communication between the groups is challenging. In August contractors were engaged to fell trees, in the compartment where the Friends had recently planted some Hazel saplings. A few of these were destroyed in the process and all the material from the work was left on the ground and not cleared away; some actually left blocking a ditch. Then we had storms in October and November which caused a number of the older trees to become unsafe. A couple of large Oak trees adjacent to the stream also were felled to ground level. It is entirely possible to leave the bole(trunk) of the tree standing in these situations. It is perfectly safe and will provide a holdfast for Ivy and good wildlife habitat for countless generations of invertebrates.

A second compartment (W7) was cut and cleared of Bramble and some fallen timber, ready for restocking with Hazel saplings. This compartment had no old Hazel, only young trees so none was coppiced this time around. The Group was helped by Paul Brockman BEM and his school students. We also returned to the compartment cut in 2020/21 (W1) and coppiced some older hazel stools that were not attended to at that time. All work was completed by the end of February.

In the glades (W4 and W11), the vegetation was cut and cleared in October. One glade is rich in Bluebells, Red Campion and Foxglove whereas the other comprises deep leaf litter and remains fairly species-poor regarding woodland ground flora. As we continue the annual cutting regime, we're recording the flora and already a few new species are being seen, so it's only a matter of time before this glade also becomes rich in woodland wildflowers.

Each spring we apply for native hedgerow species for planting along the site boundary. These are supplied free of charge by the Woodland Trust and each year we receive either 30 or 60 plants, depending on the length we need to plant. In February we planted 60 saplings. We also planted around 200 Hazel saplings to fill the gaps in the newly cleared compartment as well as replacing those damaged by contractors in our first coppice compartment. These compartments will now be left to develop for 10 years and then cut again. At the time of writing the vast majority of saplings have taken well, despite April 2022 being one of the driest on record.

Hazel saplings planted in Cpt W7, Woar Copse

We took a couple of weeks off over the New Year and came back refreshed, cutting and pollarding willows in the Meadow, removing some of the non-native Evergreen Oak trees, clearing the brash (small branches and twigs) and making bonfires to get rid of it all. All of the larger pieces of timber are stacked in the woodland, to make wood walls. These provide habitat for invertebrates and fungi, as well as demarcating our compartments.

Bonfire, Cpt W4, Woar Copse

Storm Eunice toppled one of the larger Beech trees in February and in March contractors took out the crowns of two Oak trees to allow in more light to the glades. They also cleared-away the brash from the felled Oak trees beside the stream. Thankfully, the ground was really dry and little damage through ground compaction was evident.

Wood wall, Woar Copse

2.2 Infrastructure

The Group checks the infrastructure (gates, fences, bridges etc) on a regular basis. Small repairs we can do ourselves but the larger jobs require assistance and when anything fails, we inform the Town Council. This year new fencing was installed at the south-east corner access point and against the south-west corner main gate near our workbase.

Under the terms of the grazing licence, the grazier has to check and repair any failure in the fencing, ahead of the livestock being re-introduced. This year a couple of the larger corner/strainer posts were replaced.

2.3 Volunteer work effort

During the period 1st April 2021 to 31st March 2022 the Friends of Ballard Water Meadow volunteers, the Fernhill Friends and the school students' working parties clocked-up a total of 1522 man hours. We continue to meet twice weekly, Friday and Sunday mornings at 09.30 at our workbase on Lake Grove Road.

3. LIAISON AND ADMINISTRATION

The Friends of Ballard Water Meadow are grateful for the help and support from officers and members of New Milton Town Council and in particular, the Estates and Facilities Management Team.

Throughout the year the Group has worked closely with Fernhill Friends, who not only helped clear Hemlock Water-dropwort from the Meadow, but held a fund-raising quiz night, the proceeds of which were donated to the Friends of Ballard Water Meadow, for which we are grateful.

In order to increase our profile, as one of a number local community groups, we held an event in July to celebrate National Meadow Day and were joined by the New Forest Beekeepers. Also to do with bees, we received financial help from the Hampshire Biodiversity Information Centre (Hampshire County Council) to hold a workshop to train a number of the group in bumblebee identification.

Through our membership of Conservation Connection New Forest South, a small piece of ground was donated by the Town Council at the entrance to Fawcett's Field, where we sowed native wildflower seed in May which took well, and by July was blooming marvellous! We also joined-in with their celebrations at the Bee Fayre in September. Our own final fund-raising event was on New Milton market in December, selling gift packs of native wildflower seed.

We had three trips to visit other wildlife sites – a butterfly meadow in North Baddesley in July, then in early September, Studland Common, the Pleasure grounds and Sturt Pond with Milford Conservation Volunteers and later in the month, North Solent National Nature Reserve.

Members and officers of the Town Council, along with the New Forest Land Advice Service and the Friends of Ballard Water Meadow, were invited to support Ballard School in their project to plant trees and re-wild a small area of land in the school grounds, adjacent to Ballard Meadow. A plan was drawn-up and the locations for new trees was highlighted.

As part of our Community Involvement, the Chairman was invited to attend the Remembrance Day commemoration at the War Memorial in New Milton and a Christmas Carol service at St Mary Magdalene Church.

The Committee of the Friends of Ballard Water Meadow meet regularly every couple of months and before any event. Our Annual General Meeting was held at the Guide Hut in October. Two committee members resigned, but others were re-elected and we shall be recruiting one or two more to join us during 2022/23.

The Committee now comprises:

Chairman: Bob Lord
Secretary: Ann Gorman
Treasurer/Membership Secretary: Pam Petherbridge
Town Council Representative: Steve Clarke

4. MEMBERSHIP

The friends of Ballard Water meadow are grateful to all those who have renewed their membership for the year. As with all membership groups, there is a turnover and this year we welcomed several new members. Our membership for 2021/22 stands at 51.

5. ACKNOWLEDGEMENTS

As mentioned above, the Friends of Ballard Water Meadow cannot operate in isolation. As a not-for-profit group, we rely heavily on membership subscriptions and donations to keep us running. We have been more fortunate this year in being able to once again, generate some income from fund-raising events.

Many of the members have made donations, for which many thanks and this is gratefully received.

The Committee would particularly like to thank: Fernhill Friends, New Milton Residents' Association, New Milton Town Council, Paul Brockman and Priestlands School and last, but not least all the willing volunteers who help, come rain or shine.

Bob Lord
Chairman
Friends of Ballard Water Meadow

June 2022

6. APPENDICES

APPENDIX 1 – MEADOW INDICATOR SPECIES 2021

APPENDIX 2 – COMMON BIRD CENSUS 2021

APPENDIX 3 – INSECT SURVEY 2021

APPENDIX 4 – BUTTERFLY TRANSECT 2021

APPENDIX 5 – STREAM SURVEY 2021

APPENDIX 6 – UPDATED PLANT LIST (1998-2021)

APPENDIX 1 – BALLARD MEADOW INDICATOR SPECIES 2021

Species/Count		Compartment											
		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
Meadow Buttercup	Number									44			20 cl
	% cover	1.5	5			3	0.5	1	1		3	5	
Common Sorrel	Number						153	153					
	% cover	10	1			12			0.5	2	4	3	12
Germander Speedwell	Number						57			12+			
	% cover			0.5	0.2	0.2							10
Ragged Robin	Number	14			18			1		2			5
	% cover												
Bugle	Number	47			3								
	% cover												
Oxeye Daisy	Number			8	9								
	% cover												
Southern Marsh Orchid	Number										15		
Common/Heath-spotted Orchid	Number	213											
Pignut	Number					123				20+			
	% cover				5%								

Data collected by: Ann Gorman

APPENDIX 2 – COMMON BIRD CENSUS 2021 (Summary)

A. BREEDING BIRDS

Common Name	Scientific Name	Territories
Stock Dove	*Columba oenas*	4 (5)
Woodpigeon	*Columba palumbus*	15 (16)
Great Spotted Woodpecker*	*Dendrocopus major*	1 (2)
Wren	*Troglodytes troglodytes*	11 (12)
Dunnock	*Prunella modularis*	8 (9)
Robin	*Erithacus rubecula*	14 (15)
Blackbird	*Turdus merula*	15 (16)
Song Thrush	*Turdus philomelos*	4
Blackcap	*Sylvia atricapilla*	4 (5)
Chiffchaff	*Phylloscopus collybita*	4
Goldcrest	*Regulus regulus*	2 (3)
Long-tailed Tit	*Aigithalos caudatus*	1 (2)
Coal Tit	*Parus ater*	3 (4)
Blue Tit	*Parus caeruleus*	14 (15)
Great Tit*	*Parus major*	8 (9)
Nuthatch*	*Sitta europaea*	4 (5)
Treecreeper*	*Certhia familiaris*	1
Jay	*Garrulus glandarius*	1
Magpie	*Pica pica*	1
Jackdaw*	*Corvus monedula*	1 (2)
Carrion Crow*	*Corvus corone*	3
Starling*	*Sturnus vulgaris*	2 (3)
House Sparrow	*Passer domesticus*	1 (2)
Chaffinch	*Fringilla coelebs*	4
Goldfinch	*Carduelis carduelis*	4 (5)

* - denotes nest (seen, bird at nest, entering nest site or young calling in nest)

B. NON-BREEDING BIRDS PRESENT ON ONE OR MORE OCCASIONS

Common Name	Scientific Name	Notes
Mallard	*Anas platyrhynchos*	2 pairs present in the stream and ditches on two visits
Green Woodpecker	*Picus viridis*	Male calling at north end of wood on two visits
Greenfinch	*Carduelis chloris*	Single male singing on two occasions in the woodland
Bullfinch	*Pyrrhula pyrrhula*	One adult male and a pair seen on two occasions in the woodland and in meadow

Data collected by: Bob Lord

APPENDIX 3 – INSECT SURVEY 2021 (Summary)

* - denotes Red Data Book (RDB) or nationally scarce

			Survey Section					
			Meadow			Woodland		
Family	Group	Species	South	Middle	North	North	Middle	South
Mecoptera	Scorpion-flies	*Panorpa communis*		X				
Odonata	Dragonflies	*Aeshna mixta*		X	X			
		Libellula quadrimaculata		X				
		Sympetrum striolatum	X	X	X			
	Damselflies	*Enallagma cyathigerum*			X			
Orthoptera	Bush Crickets	*Pholidoptera griseoaptera*			X			
		Metrioptera roselii			X			
		Conocephalus discolor	X					
		C. dorsalis	X					
		Leptophyes punctatissima		X	X			
	Grasshoppers	*Chorthippus albomarginatus*			X			
		C. brunneus	X	X				
		C. parallelus	X	X	X			
Dermaptera	Earwigs	*Forficula auricularia*		X				
Dictyoptera	Cockroaches	*Ectobius lapponicus**	X					
Heteroptera	True Bugs	*Dicyphus epilobii*		X				
		Deraeocoris ruber	X	X				
		Calocoris roseomaculatus	X					
		Closterostomus norvegicus	X	X	X			
		Capsus ater			X			
		Apolygus lucorum		X			X	
		Lygus rugulipennis	X	X	X			
		Orthops campestris	X	X	X			

APPENDIX 3 – INSECT SURVEY 2021 (Summary) – continued

			Survey Section					
			Meadow			Woodland		
Family	Group	Species	South	Middle	North	North	Middle	South
Heteroptera	True Bugs (contd)	*Stenotus binotatus*	X	X				
		Leptopterna dolobrata	X					
		Notostira elongata	X	X				
		Pithanus maerkelii	X	X				
		Stenodema calcarata	X	X	X	X		
		S. laevigata	X	X				
		Trignotylus ruficornis			X			
		Heterotoma planicornis	X					
		Macrotylus solitarius	X	X				
		Plagiognathus arbustorum	X		X			
		P. chrysanthemi			X			
		Anthocoris nemorum			X			
		Scolopostethus decoratus	X					
		Stygnocoris rusticus		X				
		Coreus marginatus	X	X	X			
		Eurygaster testudinaria	X	X	X			
		Aelia acuminata	X					
		Palomena prasina	X	X	X			
		Acanthosoma haemorrhoidale		X				
Lepidoptera	Butterflies	*Thymelicus lineola*	X	X				
		Ochlodes sylvanus		X				
		Pieris brassicae	X	X	X			X
		P. rapae	X	X				X
		P. napi		X				
		Lycaena phlaeus	X	X	X			
		Polyommatus icarus		X	X			
		Vanessa atalanta	X	X		X		X

APPENDIX 3 – INSECT SURVEY 2021 (Summary) – continued

			Survey Section					
			Meadow			Woodland		
Family	Group	Species	South	Middle	North	North	Middle	South
Lepidoptera	Butterflies (contd)	*Vanessa cardui*	X					
		Aglais io			X			
		Pararge aegeria	X	X	X	X		X
		Melanargia galathea	X	X				
		Pyronia tithonus	X	X	X	X	X	
		Maniola jurtina	X	X	X	X		
Trichoptera	Caddisflies	*Limnephilus affinis*		X	X			
		L. lunatus			X			
Diptera	Hoverflies	*Baccha elongata*					X	
		Episyrphus balteatus	X	X	X	X	X	X
		Eristalis arbustorum	X	X				
		E. intricarius			X			
		E. tenax	X	X	X			X
		Eumerus funeralis	X	X				
		E. strigatus	X		X			
		Eupeodes corollae	X		X			
		E. luniger	X					
		Helophilus pendulus	X	X	X			
		H. trivittatus	X	X				
		Melanogaser hirtella			X			
		Melanostoma mellinum	X	X	X			
		M. scalare	X	X	X			
		Merodon equestris	X	X	X		X	
		Myathropa florea	X	X	X	X		X
		Paragus haemorrhus			X			

APPENDIX 3 – INSECT SURVEY 2021 (Summary) – continued

			Survey Section					
			Meadow			Woodland		
Family	Group	Species	South	Middle	North	North	Middle	South
Diptera	Hoverflies (contd)	*Pipiza noctiluca*			X			
		Platycheirus albimanus	X		X	X	X	
		Platycheirus rosarum	X	X				
		Rhingia campestris		X				
		Sphaerophoria scripta	X	X	X			
		Syritta pipiens	X					
		Syrphus ribesii	X	X	X	X		
		Volucella pellucens	X		X	X	X	X
		*V. zonaria**	X					X
		Xylota segnis	X					
		X. sylvarum			X	X		
		C. cristatus	X	X	X			
		Rhagio lineola	X					
		R. scolopaceus	X		X			
		R. tringarius	X					
		Beris vallata	X		X			
		Chorisops tibialis			X			
		Chloromyia formosa	X	X				
		Bombylius major				X		
		Machimus atricapillus		X				
		Leptogaster cylindrica	X	X				
		Dioctria linearis	X	X				
	Snail-killing Flies	*Pherbellia ventralis*	X	X				
		Elgiva cucularia	X		X			
		Hydromya dorsalis		X				
		Ilione albiseta	X	X	X			
		Limnia unguicornis		X				
		Tetanocera arrogans		X	X			

APPENDIX 3 – INSECT SURVEY 2021 (Summary) – continued

			Survey Section					
			Meadow			Woodland		
Family	Group	Species	South	Middle	North	North	Middle	South
Diptera	Picture-winged Flies	*Urophora jaceana*	X					
		Tephritis bardanae		X	X			
		T. neesii		X				
		Chaetostomella cylindrica		X				
		Euleia haraclei	X	X	X			
	Conopid Flies	*Conops ceriaeformis*	X					
		C. quadrifasciatus	X		X			
		*Leopoldius signatus**		X				
		Physocephala rufipes	X		X			
		Sicus ferrugineus	X		X			
	Tachinid Flies	*Eriothrix rufomaculata*	X	X	X			
Hymenoptera	Ants	*Lasius niger*	X	X				
		Myrmica rubra			X			
		M. ruginodis		X				
	Spider Wasps	*Anoplius nigerrimus*	X					
	Social Wasps	*Vespa crabro*			X			
		Vespula vulgaris	X	X	X	X	X	X
	Solitary Wasps	*Ectemnius cephalotes*	X					
		Pemphredon lugubris	X					
	Solitary Bees	*Hylaeus communis*	X	X	X			
		Andrena scotica	X		X			
		A. nitida	X					
		A. haemorrhoea		X		X		
		A. flavipes	X		X			
		A. subopaca	X	X	X			X
		A. wilkella	X	X	X			

APPENDIX 3 – INSECT SURVEY 2021 (Summary) – continued

			Survey Section					
			Meadow			Woodland		
Family	Group	Species	South	Middle	North	North	Middle	South
Hymenoptera	Solitary Bees (contd)	*Halictus tumulorum*	X	X				
		Lasioglossum leucozonium	X	X				
		L. calceatum	X		X			
		L. punctatissimum		X				
		L. villosulum		X				
		L. morio	X	X				
		Sphecodes ephippus		X				
		S. geofrellus		X				
		Osmia bicornis	X			X		X
		Nomada fabriciana		X				
	Social Bees	*Bombus lapidarius*	X	X	X			X
		B. lucorum	X	X	X	X		
		B. pascuorum	X	X	X	X	X	X
		B. pratorum	X		X			X
		B. terrestris	X	X	X	X	X	
		B. vestalis	X	X	X			X
		Apis mellifera	X	X	X	X	X	X
Coleoptera	Soldier Beetles	*Cantharis flavilabris(nigra)*	X	X	X			
		C. pallida	X		X			
		C. rustica	X	X				
		Rhagonycha fulva	X	X	X			
	Malachite Beetles	*Malachius bipustulatus*	X	X	X			
	Click Beetles	*Agriotes pallidulus*		X				
		Steganostus rhombeus				X		
	Ladybirds	*Propylea 14-punctata*	X	X				
		Coccinella 7-punctata	X	X	X			
		Tytthaspis 16-punctata		X	X			

APPENDIX 3 – INSECT SURVEY 2021 (Summary) – continued

			Survey Section					
			Meadow			Woodland		
Family	Group	Species	South	Middle	North	North	Middle	South
Coleoptera	Longhorn Beetles	*Paracorymbia fulva**	X					
		*Stictoleptura scutellata**			X			
		Rutpela maculata	X	X	X			
		Stenurella melanura	X					
		Clytus arietis			X			

Numbers recorded:

Survey Section	Number of Species			
	2020	2021		
			New	Total
South Meadow	97	64	43	107
Middle Meadow	77	48	50	98
North Meadow	63	37	48	85
North Woodland	30	10	10	20
Middle Woodland	29	6	5	11
South Woodland	18	10	7	17
Total	314			338

Data collected by: Bryan J Pinchen

APPENDIX 4 – BUTTERFLY TRANSECT 2021 (Summary)

List of species and numbers recorded in each section.

SPECIES	**TRANSECT SECTION**		
	1 south edge	**6** meadow	**7** Woar copse
Small/Essex Skipper		34	
Brimstone		11	2
Large White	4	44	4
Small White	10	66	6
Green-veined White		8	
Orange Tip	2	3	
Small Copper		10	
Common Blue		13	
Red Admiral	3	10	11
Peacock			1
Comma		1	
Marbled White		1	
Speckled Wood	1	9	18
Gatekeeper	6	58	4
Meadow Brown	39	216	1

Extracted from: Ballard Water Meadow Transect Report (New Forest Transect Group/Friends of Ballard Water Meadow 2021).

Observers: Ann Gorman, Pam Petherbridge, Rhona Copp, Mandy Hayes, Rosemary Devereux-Jones

Other species recorded (B J Pinchen – not on transect):

Essex Skipper
Large Skipper
Painted Lady

APPENDIX 5 – STREAM SURVEY 2021

Introduction

Ballard stream is situated on the edge of the New Forest and runs along the east margin of the meadow. It is an important habitat and food source for many different organisms and the stream keeps the water table high in the meadow. The gravel bed and marginal vegetation are habitats which support freshwater invertebrates.

The stream has not been surveyed previously. Monitoring a stream is a practical method of looking at a freshwater ecosystem and from March to December the surveys were carried out monthly providing seasonal baseline data, during which severe changes in water quality can be identified.

The health of the stream and the freshwater invertebrates that live in it depend on good water quality. The abundance and occurrence of freshwater invertebrates can indicate water health. Some freshwater invertebrates are more tolerant of stressors in the form of pollutants than others. The stressors that affect the health of freshwater invertebrates are nutrient levels, slow flow, sediment and acidity. (Riverfly Partnership 2022). Worms, Midges, Snails, and Leeches are more tolerant of and muddy streams than Mayflies, Caddisflies and Stoneflies which need healthy lotic (flowing water) to survive. Sewage spills and predicted climate change with more adverse weather causing more frequent flash-flooding are an increasing threat to freshwater ecosystems.

Surveying the freshwater invertebrates living within the stream is useful in assessing stream health. As they are abundant, not extremely mobile and carry out part of or all their life cycle within the stream, freshwater invertebrates are exposed to the quality of the water on a continuous basis. The type and number found can relate directly to the water quality. The freshwater invertebrates live in the water, on and under rocks, vegetation, wood and debris. Some invertebrates feed on rotting leaves and wood and graze on algae, while others are predatory feeding on other invertebrates. Other freshwater invertebrates filter food from water cleaning the stream in the process.

Chemical Analysis

Water sample testing kits are used to determine nitrate and phosphate levels. High levels have a negative impact on biodiversity within the freshwater ecosystem. There is a chicken farm 700m north of the stream and building of a crematorium took place 700 metres north-west in April 2021. Both have the potential to impact the stream's health. The results of the analysis are shown in Table 1.

Kick Sampling Method

This is a standard method used for sampling stream freshwater macro invertebrates (those which can be seen with the naked eye) and other stream inhabitants. The same entry point at the stream is used each month. It involves disturbing the gravel bed and collecting the invertebrates that are dislodged. An industry standard flat-bottomed net is used. A standard kick sample is carried out for a 3-minute duration with an additional 1-minute stone-washing sample. As different invertebrates are found living in different habitats it is important to sample all habitats within the stream, marginal vegetation and shallow edges. Table 2 shows common freshwater invertebrates and other species and those found in Ballard Stream.

Comments

It is too early to draw conclusions, but it is interesting to note the proximity of a chicken farm 700 metres north of the stream. Of all animal manure, chicken manure is the highest in nitrates and phosphates. The results to date demonstrate that potential run off from farm and roads is not

impacting greatly on water quality. There is some evidence of eutrophication as elevated phosphate levels have been evident throughout the survey period. However, nitrate levels are more indicative of a mesotrophic or moderate nutrient state. As training has been successfully completed in 2022 to become a qualified Riverfly monitor, this also facilitates access to a national database where a biotic scoring system can be accessed. A biotic scoring system can further determine the water quality and health of a stream's ecosystem. Following the training undertaken, the 1-minute stone-washing exercise will run alongside the kick sampling exercise each month.

The small stream at Ballard Water Meadow has demonstrated overall good health with two of the more interesting species illustrated below.

Mayfly Olive

Newtlet (Eft)

Table 1 Chemical Analysis – results

Sample Date	Phosphate Levels	Nitrate Levels	Interpretation
19/03/21	0.02–0.05	0.5-1.0	Some evidence of nutrient pollution. Light rain 3 days prior to sampling
09/04/21	Less than 0.02	0.2-0.5	No evidence of nutrient pollution. Rain 3 days prior to sampling.
07/05/21	0.02–0.05	1–2	High level of pollution. No recent rain. Very poor flow.
19/06/21	0.02 -0.05	0.2-0.5	Some evidence of nutrient pollution. No recent rain. Stream flowing.
24/07/21	0.02-0.05	0.2-0.5	No evidence of nutrient pollution. Recent rain the day before. Stream flow weak.
August			Stream dry.
17/09/21	Less than 0.02	0.2	No evidence of nitrate or phosphate pollution. Recent light rain last 4 days.
22/10/21	0.02–0.05	0.5–1	Some evidence of nutrient pollution. Rain 2 days prior to sampling. Strong flow
19/11/21	Less than 0.02	0.2–0.5	Some evidence of nutrient pollution. Stream flow good. Recent rain last 4 days.
10/12/21	Less than 0.02	0.2	No evidence of nitrate or phosphate pollution. Fast flow.

Thanks to Freshwater Habitats for initial sampling kits and help with the process. More recent thanks to New Milton Town Council for funding future testing kits.

Table 2 Common Freshwater Species and those found in Ballard Stream 2021

The table shows the freshwater invertebrate groups and other species found in freshwater in the UK, and those present (X) in Ballard stream during March-December 2021 (Adapted from Extended Riverfly Groups Chart – Riverfly Partnership 2022). Note: no sample in August (stream dry).

The abundance and occurrence of freshwater invertebrates can indicate water quality. The stressors that affect the health of freshwater invertebrates and other species are nutrients, slow flow, sediment and acidity. Some invertebrates are more tolerant to stressors than others (Riverfly Partnership 2022).

Invertebrates

	Sample date 2021								
Invertebrate Group/Family/Species	26/03	16/04	07/05	23/06	30/07	26/09	22/10	26/11	17/12
• Caddisfly • Cased Caddis: Hood-case – Maker Insect: Trichoptera Families: Molannidae • Weighted Case – Maker Insect: Trichoptera Families: Goeridae • Bush Tailed Insect: Trichoptera Families: Sericostomatidae Cased Caddis – other Insect: Trichoptera Families: Glossosomatidae, Hydroptilidae, Phryganeidae, Brachycentridae, Lymnephilidae, Odontoceridae, Leptoceridae, Aetanilidae.									
Caseless Caddisfly: • Green Sedge Insect: Trichoptera Families: Rhyacophilidae • Net Spinners Insect: Trichoptera Families: Hydropsychidae • Non-gilled Insect: Trichoptera Families: Philopotamidae, Psychomyiidae, Esnomidae, Polycentropodidae.									

Invertebrates (continued)

	Sample date 2021								
Invertebrate Group/Family/Species	26/03	16/04	07/05	23/06	30/07	26/09	22/10	26/11	17/12
Stonefly Larvae (2 tails) Insect: Plecoptera Families: Taeniopterygidae, Nemouridae, Leuctridae, Caenidae, Perlidae, Chloroperlidae.									
Gammarus: Freshwater Shrimp Crustacea Amphipoda Families: Craigentinny, Gammaridae, Nipargidae	X	X	X	X	X	X	X	X	
Dragonflies and Damselflies Insect: Odonata Families: Notoneatidae, Corixidae.									
Up-wing Fly Larvae (3 tails) Mayfly: Ephemeridae Families Ephemerillidae • Blue-winged Olive: Ephemerillidae • Flat Bodied: Heptageniidae • Anglers Curse: Caenidae • Olives: Baetidae • Prong Gilled Leptophebidae		X							
Other Bugs: Insect: Hemiptera Families: Mesoveliidae, Hebridae, Hydrometridae, Veliidae, Gerridae, Nepidae.									
Water Boatman Insect: Hemiptera Families: Notoneatidae, Corixidae.									
Water Beetles Insect: Coleoptera Families: Haliplidge, Hygrobiidae, Noteridae, Dytiscidae.	X	X	X		X	X			
Flat Worms: Platyhelmithe Class: Turbellaria Families: Planariidae, Dugesiidae, Dendrocoeiidae.									
Aquatic Worms Annelida. Sub-class: Oligochaeta	X	X	X	X	X	X	X		X

Invertebrates (continued)

	Sample date 2021								
Invertebrate Group/Family/Species	26/03	16/04	07/05	23/06	30/07	26/09	22/10	26/11	17/12
Leeches Annelida Sub-class: Hirundinea Families: Pisciolidae, Glossiphoniida, Hirundinidae, Erpodellidae.	X	X		X		X	X	X	
Water Hog Louse Crustacea: Isopoda Family: Aseliidae	X	X	X	X	X	X	X	X	X

Vertebrates

	Sample date 2021								
Vertebrate	26/03	16/04	07/05	23/06	30/07	26/09	22/10	26/11	17/12
Newtlet (Eft)				X					

Data collected and report prepared by Pam Petherbridge. Grateful thanks to the Riverfly Partnership for facilitating a training day in 2022.

APPENDIX 6 – UPDATED PLANT LIST 1998-2021
(Meadow and Woodland records combined)

Stat	Loc	Species	Common name	Year recorded				
				1998-2018	2019	2020	2021	2022
**		*Acer campestre*	Field Maple					
nn	w	*A. platanoides*	Norway Maple	X				
	w	*A. pseudoplatanus*	Sycamore	X	X	X	X	
		Achillea millefolium	Yarrow	X	X	X	X	
	m	*A. ptarmica*	Sneezewort				X	
**		*Adoxa moschatellina*	Moschatel					
	m	*Agrostic capillaris*	Common Bent	X	X		X	
		A. stolonifera	Creeping Bent	X			X	
*	cm	*Ajuga reptans*	Bugle		X	X	X	
		Alliaria petiolata	Garlic Mustard			X	X	
nn		*Allium triquestrum*	Three-cornered Leek		X	X	X	
**		*A. ursinum*	Ramsons					
		A. vineale	Crow Garlic		X	X		
	m	*Alopecurus geniculatus*	Marsh Foxtail	X		X	X	
	m	*A. pratensis*	Meadow Foxtail	X			X	
		Anagallis arvensis	Scarlet Pimpernel		X			
**	w	*Anemone nemorosa*	Wood Anemone	X	X	X	X	
	w	*Anthoxanthum odoratum*	Sweet Vernal-grass	X	X	X	X	
	c	*Anthriscus sylvestris*	Cow Parsley	X	X	X	X	
		Apium nodiflorum	Fool's Water-cress	X				
	mw	*Arrhenatherum elatius*	False Oat-grass	X			X	
	m	*Artemisia vulgaris*	Mugwort	X		X	X	
	m	*Arum italicum*	Italian Lord and Ladies				X	
	m	*A. maculatum*	Cuckoo Pint		X	X	X	
		Athyrium filix-femina	Lady-fern			X		
	m	*Bellis perennis*	Daisy		X	X	X	
	w	*Betula pendula*	Silver Birch		X	X	X	
**	w	*Blechnum spicant*	Hard Fern					
**	w	*Brachypodium sylvaticum*	False-brome	X				
**		*Bromopsis ramosa*	Wood-brome					
		Bromus hordaceus	Soft-brome					

APPENDIX 6 – UPDATED PLANT LIST 1998-2021 - continued

Stat	Loc	Species	Common name	Year recorded				
				1998-2018	2019	2020	2021	2022
**		*Calamagrostis epigejos*	Wood Small-reed					
	m	*Caltha palustris*	Marsh Marigold		X	X	X	
		Calystegia sepium	Hedge Bindweed	X		X	X	
**		*Campanula trachelium*	Nettle-leaved Bellflower					
**		*Cardamine amara*	Large Bitter-cress					
	m	*C. flexuosa*	Wavy Bitter-cress				X	
	m	*C. pratensis*	Cuckoo Flower		X	X	X	
*	m	*Carex disticha*	Brown Sedge	X		X		
		C. divulsa	Grey Sedge					
		C. flacca	Glaucous Sedge	X				
	m	*C. hirta*	Hairy Sedge	X	X	X	X	
**		*C. laevigata*	Smooth-stalked Sedge					
**		*C. pallescens*	Pale Sedge					
**		*C. pendula*	Pendulous Sedge		X	X	X	
		C. pilulifera	Pill Sedge				X	
**	mw	*C. remota*	Remote Sedge	X		X	X	
**		*C. strigosa*	Thin-spiked Wood Sedge					
**	w	*C. sylvatica*	Wood Sedge	X		X	X	
**		*Carpinus betulus*	Hornbeam					
**		*Cephalanthera longifolia*	Narrow-leaved Helleborine					
	m	*Centaurea nigra*	Common Knapweed	X	X	X	X	
		Centaurium erythraea	Common Centaury		X			
	m	*Cerastium fontanum*	Common Mouse-ear	X	X	X	X	
**		*Ceratocapnus claviculata*	Climbing Corydalis					
	w	*Chamerion angustifolium*	Rosebay Willow-herb				X	
**		*Chrysosplenium oppositifolium*	Opposite-leaved Golden Saxifrage					
	w	*Circaea lutetiana*	Enchanter's-nightshade	X	X	X	X	
	m	*Cirsium arvense*	Creeping Thistle	X	X	X	X	
	m	*Cirsium palustre*	Marsh Thistle	X		X	X	
	m	*C. vulgare*	Spear Thistle	X	X	X	X	
**		*Colchicum autumnale*	Autumn Crocus					
	mw	*Conopodium majus*	Pignut	X	X	X	X	
**		*Convalleria majalis*	Lilly-of-the-Valley					
	m	*Coronopus didymus*	Lesser Swine-cress	X		X	X	

APPENDIX 6 – UPDATED PLANT LIST 1998-2021 – continued

Stat	Loc	Species	Common name	Year recorded				
				1998-2018	2019	2020	2021	2022
	w	*Corylus avellana*	Hazel	X	X	X	X	
**		*Crataegus laevigata*	Midland Hawthorn					
	mw	*C. monogyna*	Hawthorn	X	X	X	X	
		Crepis capillaris	Smooth Hawk's-beard					
	c	*Cynosaurus cristatus*	Crested Dog's-tail				X	
	w	*Cytisus scoparius*	Broom			X	X	
	mw	*Dactylis glomerata*	Cocksfoot	X	X	X	X	
	m	*Dactylorhiza maculata*	Heath Spotted-orchid		X	X	X	
*	m	*D. praetermissa*	Southern Marsh-orchid	X	X	X	X	
**		*Daphne laureola*	Spurge Laurel					
	m	*Deschampsia cespitosa*	Tufted Hair-grass	X				
	w	*Digitalis purpurea*	Foxglove	X	X	X	X	
		Dipsacus fullonum	Teasel		X			
**		*D. pilosus*	Small Teasel					
**		*Dryopteris affinis*	Scaly Male-fern					
		D. carthusiana	Narrow Buckler-fern					
	w	*D. dilatata*	Broad Buckler-fern	X		X		
	w	*D filix-mas*	Male-fern	X	X	X	X	
	m	*Eliocharis palustris*	Common Spike-rush	X		X	X	
**		*Elymus caninus*	Bearded Couch					
	m	*Elytrigia repens*	Common Couch	X				
	m	*Epilobium hirsutum*	Great Willowherb					
	w	*E. montanum*	Broad-leaved Willowherb	X	X	X		
		E. parviflorum	Hoary Willowherb	X	X	X		
	m	*E. tetragonum*	Square-stalked Willowherb	X	X	X		
**		*Epipactis helleborine*	Broad-leaved Helleborine					
**		*E. muelleri*	Narrow-lipped Helleborine					
		E. purpurata	Early Purple-orchid					
	m	*Equisetum fluviatile*	Water Horsetail				X	
		E. palustre	Marsh Horsetail	X				
**		*E. sylvaticum*	Wood Horsetail					
**		*Euphorbia amygdaloides*	Wood Spurge		X	X	X	

APPENDIX 6 – UPDATED PLANT LIST 1998-2021 – continued

Stat	Loc	Species	Common name	Year recorded				
				1998-2018	2019	2020	2021	2022
	w	*Fagus sylvatica*	Beech	X			X	
	mw	*Festuca arundinacea*	Tall Fescue	X				
**		*F. gigantea*	Giant Fescue	X				
	m	*F. pratensis*	Meadow Fescue	X			X	
	m	*F. rubra*	Red Fescue	X			X	
	m	*Filipendula ulmaria*	Meadowsweet		X	X	X	
**		*Frangula alnus*	Alder Buckthorn					
	mw	*Fraxinus excelsior*	Ash	X	X	X	X	
		Galeopsis tetrahit	Common Hemp-nettle	X			X	
	mw	*Galium aparine*	Goosegrass/Cleavers	X	X	X	X	
**		*G. odoratum*	Woodruff					
	m	*G. palustre*	Marsh Bedstraw	X	X	X	X	
	m	*Geraneum dissectum*	Cut-leaved Crane's-bill	X	X	X	X	
	mw	*G. robertianum*	Herb Robert	X	X	X	X	
**		*Geum rivale*	Water Avens					
	mw	*G. urbanum*	Wood Avens/Herb Bennet	X	X	X	X	
	m	*Glechoma hederacea*	Ground-ivy	X			X	
	m	*Glyceria fluitans*	Floating Sweet-grass	X			X	
		Gnaphalium uliginosum	Marsh Cudweed	X				
	mw	*Hedera helix*	Ivy	X	X	X	X	
		Heiraceum agg.	Hawkweed		X	X	X	
**		*Helleborus viridis*	Green Hellebore					
	mw	*Heracleum sphondylium*	Hogweed	X		X	X	
	mw	*Holcus lanatus*	Yorkshire-fog	X	X	X	X	
**	w	*H. mollis*	Creeping Soft-grass	X				
**		*Hordelymus europaeus*	Wood Barley					
**	w	*Hyacinthoides non-scripta*	Bluebell	X	X	X	X	
*#		*Hydrocotyle vulgaris*	Marsh Pennywort	X				
**		*Hypericum androsaemum*	Tutsan	X	X	X	X	
**		*H. pulchrum*	Slender St John's-wort					
	m	*Hypochaeris radicata*	Cat's-ear	X	X	X	X	

APPENDIX 6 – UPDATED PLANT LIST 1998-2021 – continued

Stat	Loc	Species	Common name	Year recorded				
				1998-2018	2019	2020	2021	2022
**	mw	*Ilex aquifolium*	Holly	X	X		X	
**	w	*Iris foetidissima*	Stinking Iris			X	X	
	m	*I. pseudacorus*	Yellow-flag		X	X	X	
	m	*Juncus acutiflorus*	Sharp-flowered Rush	X	X	X	X	
		J. bufonius	Toad-rush		X			
	mw	*J. effusus*	Soft Rush	X		X	X	
**		*Lamiastrum galeobdelon*	Yellow Archangel				X	
		Lamium purpureum	Red Dead-nettle		X			
	mw	*Lapsana communis*	Nipplewort		X	X	X	
**		*Lathraea squamaria*	Toothwort					
**		*Lathyrus linefolius*	Bitter-vetch					
	m	*L. pratensis*	Meadow Vetchling		X	X	X	
		L. sylvatica	Wood Vetch					
**		*L. sylvestris*	Narrow-leaved Everlasting Pea					
*	mc	*Leucanthemum vulgare*	Oxeye Daisy			X	X	
		Linaria purpurea	Purple Toadflax			X	X	
	m	*Lolium perenne*	Perennial Rye-grass	X	X	X	X	
	w	*Lonicera periclymenum*	Honeysuckle	X	X	X	X	
	m	*Lotus corniculatus*	Common Bird's-foot Trefoil	X	X	X	X	
	m	*L. pedunculatus*	Greater Bird's-foot Trefoil	X	X	X	X	
	m	*Luzula campestris*	Field Wood-rush			X	X	
**		*L. forsteri*	Southern Wood-rush					
**	w	*L. pilosa*	Hairy Wood-rush			X		
**		*L. sylvatica*	Great Wood-rush					
*#	m	*Lychnis flos-cuculi*	Ragged Robin	X	X	X	X	
**		*Lysimachia nemorum*	Yellow Pimpernel	X				
	m	*Lythrum salicaria*	Purple-loostrife	X	X	X	X	
		Malus pumilla	Apple	X				
**	w	*M. sylvestris*	Crab Apple	X	X	X		
	m	*Matricaria discoidea*	Pineappleweed		X	X	X	
**#	w	*Melampyrum pratense*	Common Cow-wheat	X				
**	w	*Melica uniflora*	Wood Melick	X	X	X	X	
	m	*Mentha aquatica*	Water Mint	X			X	

APPENDIX 6 – UPDATED PLANT LIST 1998-2021 – continued

Stat	Loc	Species	Common name	Year recorded				
				1998-2018	2019	2020	2021	2022
**	w	*Milium effusum*	Wood Millet					
**	w	*Moehringia trinerva*	Three-nerved Sandwort	X			X	
	m	*Myosotis discolor*	Changing Forget-me-not			X	X	
		M. scorpiodes	Water Forget-me-not	X				
		Narcissus pseudonarcissus	Daffodil					
	m	*Nasturtium officinale*	Common Watercress			X	X	
**		*Neottia nidus-avis*	Bird's-nest Orchid					
	mw	*Oenanthe crocata*	Hemlock Water-dropwort	X	X	X	X	
	m	*O. pimpinelloides*	Corky-fruited Water-dropwort		X	X	X	
**		*Orchis mascula*	Early Purple-orchid					
**		*Oreopteris limbosperma*	Lemon-scented Fern					
	m	*Osmunda regalis*	Royal Fern		X	X	X	
**	W	*Oxalis acetosella*	Wood Sorrel		X	X	X	
**		*Paris quadrifolia*	Herb Paris					
nn	w	*Pentaglottis sempervirens*	Green Alkanet		X	X	X	
	m	*Persicaria hydropiper*	Water-pepper	X	X	X		
		Persicaria maculosa	Redshank	X				
		Petasites hybridus	Butterbur				X	
	m	*Phleum bertolonii*	Smaller Cat's-tail	X				
	m	*P. pratense*	Timothy	X		X	X	
**	w	*Phylitis scolopendrium*	Hart's Tongue		X	X		
		Pilosella officinarum	Mouse-ear Hawkweed					
		Pinus sp	Pine	X				
	m	*Plantago lanceolata*	Ribwort Plantain	X	X	X	X	
	mw	*P. major*	Greater Plantain		X	X	X	
**		*Platanthera chlorantha*	Greater Butterfly-orchid					
	w	*Poa annua*	Annual Meadow-grass	X	X	X	X	
**	w	*P. nemoralis*	Wood Meadow-grass	X				
	m	*P. pratensis*	Smooth Meadow-grass			X	X	
	w	*P. trivialis*	Rough Meadow-grass	X	X	X	X	

APPENDIX 6 – UPDATED PLANT LIST 1998-2021 – continued

Stat	Loc	Species	Common name	Year recorded				
				1998-2018	2019	2020	2021	2022
**		*Polygonatum multiflorum*	Solomon's Seal					
	m	*Polygonum aviculare*	Knotgrass	X		X	X	
**	w	*Polypodium vulgare*	Common Polypody	X		X	X	
**		*Polystichum aculeatum*	Hard Shield-fern					
**	w	*P. setiferum*	Soft Shield-fern	X				
**		*Populus tremula*	Aspen					
	m	*Potentilla anserina*	Silverweed	X	X	X	X	
		P. erecta	Tormentil		X			
	m	*P. reptans*	Creeping Cinquefoil	X	X	X	X	
**		*P. sterilis*	Barren Strawberry					
**	w	*Primula vulgaris*	Primrose	X		X	X	
	mw	*Prunella vulgaris*	Selfheal	X	X	X	X	
**	w	*Prunus avium*	Wild Cherry			X	X	
	mw	*P. spinosa*	Blackthorn	X	X	X	X	
		Pseudofumaria lutea	Yellow Corydalis					
	mw	*Pteridium aquilinum*	Bracken	X	X	X	X	
	m	*Pulicaria dysenterica*	Common Fleabane	X	X	X	X	
**		*Pulmonaria longifolia*	Narrow-leaved Lungwort		X	X	X	
nn	m	*Quercus ilex*	Evergreen Oak	X	X	X		
**		*Q. petrea*	Sessile Oak					
	mw	*Q. robur*	English Oak	X	X	X		
*	m	*Ranunculus acris*	Meadow Buttercup	X	X	X	X	
**		*R. auricomus*	Goldilocks					
	m	*R. bulbosus*	Bulbous Buttercup			X	X	
	w	*R. ficaria*	Lesser Celandine	X	X	X	X	
*#	m	*R. flammula*	Lesser Spearwort	X	X	X	X	
		R. lingua	Greater Spearwort		X			
	mw	*R. repens*	Creeping Buttercup	X	X	X	X	
**		*Ribes nigrum*	Black Currant					
**	w	*R. rubrum*	Red Currant	X				
**	w	*Rosa arvensis*	Field Rose	X				
	w	*R. canina*	Dog Rose	X	X	X	X	

APPENDIX 6 – UPDATED PLANT LIST 1998-2021 – continued

Stat	Loc	Species	Common name	Year recorded				
				1998-2018	2019	2020	2021	2022
	mw	*Rubus fruticosus*	Bramble	X	X	X	X	
	w	*R. idaues*	Raspberry		X			
*	m	*Rumex acetosa*	Common Sorrel	X	X	X	X	
	m	*R. conglomeratus*	Clustered Dock	X				
	m	*R. crispus*	Curled Dock	X	X	X		
	mw	*R. obtusifolius*	Broad-leaved Dock	X	X	X	X	
	w	*R. sanguneus*	Wood Dock	X				
**		*Ruscus aculeatus*	Butcher's Broom					
	m	*Salix caprea*	Goat Willow			X	X	
		S. cinerea	Common Sallow	X				
	w	*Sambucus nigra*	Elder	X	X	X	X	
**	m	*Sanicula europaea*	Sanicle			X	X	
**		*Scirpus sylvaticus*	Wood Club-rush					
		Scrophularia nodosa	Common Figwort		X	X	X	
**		*Sedum telephium*	Orpine					
	m	*Senecio jacobaea*	Ragwort	X	X	X	X	
	mw	*S. vulgaris*	Groundsel		X	X	X	
**		*Serratula tinctoria*	Saw-wort					
	w	*Silene dioica*	Red Campion	X	X	X	X	
		Sium latifolia	Greater Water-parsnip					
	w	*Solanum dulcamara*	Woody Nightshade	X	X	X	X	
		S. nigra	Black Nightshade					
**#	w	*Solidago virgauria*	Goldenrod	X				
		Sonchus asper	Prickly Sow-thistle	X	X	X	X	
		S. oleraceous	Smooth Sow-thistle		X	X		
	w	*Sorbus aucuparia*	Rowan	X	X	X	X	
**		*S. torminalis*	Wild Service					
**		*Stachys officinalis*	Betony					
	m	*S. sylvatica*	Hedge Woundwort	X	X	X	X	
		Stellaria alsine	Bog Stitchwort	X				
	m	*S. graminea*	Lesser Stitchwort	X	X	X	X	
	w	*S. holostea*	Greater Stitchwort	X				

APPENDIX 6 – UPDATED PLANT LIST 1998-2021 – continued

Stat	Loc	Species	Common name	Year recorded				
				1998-2018	2019	2020	2021	2022
**	w	*Tamus communis*	Black Bryony	X				
	mw	*Taraxacum sp*	Dandelion		X	X	X	
	w	*Taxus baccata*	Yew	X				
	w	*Teucrium scorodonia*	Wood Sage				X	
**		*Tilia cordata*	Small-leaved Lime					
	m	*Trifolium campestre*	Hop Trefoil		X	X		
		T. dubium	Lesser Yellow-trefoil					
	m	*T. pratense*	Red Clover	X	X	X	X	
	m	*T. repens*	White Clover	X	X	X	X	
		Tripleurospermum inodorum	Scentless Mayweed	X		X	X	
	w	*Ulex europaeus*	Gorse	X	X	X	X	
	w	*Ulmus procera*	English Elm	X		X	X	
	mw	*Urtica dioica*	Common Nettle	X	X	X	X	
		U. urens	Small Nettle		X			
**		*Vaccinium myrtilis*	Bilberry					
		Verbascum thapsus	Common Mullein			X	X	
	m	*Veronica beccabunga*	Brooklime		X	X	X	
*	m	*V. chamaedrys*	Germander Speedwell	X	X	X	X	
		V. hederifolia	Ivy-leaved Speedwell				X	
**		*V. montana*	Wood Speedwell					
#	w	*V. officinalis*	Heath Speedwell	X				
		V. persica	Common Speedwell		X		X	
		V. serpyllifolia	Thyme-leaved Speedwell		X		X	
**		*Viburnum opulus*	Guelder Rose					

APPENDIX 6 – UPDATED PLANT LIST 1998-2021 – continued

Stat	Loc	Species	Common name	Year recorded				
				1998-2018	2019	2020	2021	2022
	m	*Vicia cracca*	Tufted Vetch	X				
	m	*V. hirsuta*	Hairy Tare				X	
	m	*V. sativa*	Common Vetch			X	X	
**		*V. sepium*	Bush Vetch					
**		*V. sylvatica*	Wood Vetch					
		V. tetrasperma	Smooth Tare		X	X		
	c	*Viola odorata*	Sweet Violet				X	
**		*V. palustris*	Marsh Violet					
**	mc	*V. reichenbachiana*	Early Dog-violet				X	
		V. riviniana	Common Dog-violet		X		X	

Data collected by Ann Gorman.

NOTES

Stat (Status): ** - denotes Ancient Woodland Indicator species (South of England – from Rose, F. 2006 The Wild Flower Key)
* - denotes neutral grassland/meadow indicator species (from HBIC/HLS)
# - denotes Notable species (vulnerable/near threatened – from HBIC)
nn – non-native

Loc (Location): m – meadow
w – wood
c – clearing

New plant species for 2021:

Meadow		Woodland	
Achillea ptarmica	Sneezewort	*Carex pilulifera*	Pill Sedge
Cardamine flexuosa	Wavy Bitter-cress	*Chamerion andgustifolium*	Rosebay Willowherb
Equisetum fluviatile	Water Horsetail	*Lamiastrum galeobdolon*	Yellow Archangel
Petasites hybridus	Butterbur	*Teucrium scorodonia*	Wood Sage
Vicia hirsute	Hairy Tare		
Viola reichenbachiana	Early Dog-violet		