

## Appendix 1 Generalised habitat preferences of most of the orchid species found in Britain and Ireland

		Limestone pavement	Beech Wood Edge	Beech Wood	Deciduous Woodland	Deciduous Woodland Edge	Pine Woods	Limestone Grassland	Neutral Grassland	Fen	Bog	Duneslacks	Damp Heath	Schoenus nigricans fen
Am	Anacamptis morio													
Ap	Anacamptis pyramidalis													
Cc	Cypripedium calceolus	x												
Cd	Cephalanthera damasonium		xc											
Cl	Cephalanthera longifolia					x								
Ct	Corallorhiza trifida					x						x		
Dpu	Dactylorhiza purpurella							x				x	x	
Dpr	Dactylorhiza praetermissa									x		x		
Df	Dactylorhiza fuchsii							x	x			x		
Di	Dactylorhiza incarnata									x		x	x	
Dv	Dactylorhiza viridis													
Dt	Dactylorhiza traunsteinerioides											x		x
Dm	Dactylorhiza maculata								x				x	
Dk	Dactylorhiza kerryensis													
Ea	Epipactis atrorubens	x												
Eh	Epipactis helleborine		x	x	x	x								
Ei	Epipactis leptochila			xc										
Epa	Epipactis palustris									x		x		
Eph	Epipactis phyllanthes													
Epu	Epipactis purpurata				vc									
Ed	Epipactis dunensis					x						x		
Gb	Gymnadenia borealis												x	
Gc	Gymnadenia conopsea							x						
Gd	Gymnadenia densiflora										x			
Gr	Goodyera repens						x							
Hh	Hymantoglossum hircinum					x						x		
Hm	Hermidium monorchis							x						
No	Neottia ovata							x						
Nu	Neottia ustulata							x						
Na	Neottia nidus-avis			x										
Orma	Orchis maculata					x		x	x			x		
Ormi	Orchis militaris		x					x						
Orp	Orchis purpurea					x								
Ora	Orchis anthropophora							x						
Opa	Ophrys apifera							x						
Opf	Ophrys fuciflora													
Opi	Ophrys insectifera		x					x		x				
Ops	Ophrys sphegodes							x						
Pb	Platanthera bifolia							x					x	
Pc	Platanthera chlorantha					x		x	x					
Sr	Spiranthes romazoffiana											x		
Ss	Spiranthes spiralis							x						

When 'c' follows an 'x', it indicates a distinctly calcareous habitat.

## Appendix 2 A broad categorisation of Orchid distribution in Britain and Ireland

Am	<i>Anacamptis morio</i>	Southern Britain
Ap	<i>Anacamptis pyramidalis</i>	Widespread
Cc	<i>Cypripedium calceolus</i>	NW England
Cd	<i>Cephalanthera damasonium</i>	Southern Britain
Cl	<i>Cephalanthera longifolia</i>	Scattered
Ct	<i>Corallorhiza trifida</i>	Northern Britain
Dpu	<i>Dactylorhiza purpurella</i>	Northern Britain
Dpr	<i>Dactylorhiza praetermissa</i>	Southern Britain
Df	<i>Dactylorhiza fuchsii</i>	Widespread
Di	<i>Dactylorhiza incarnata</i>	Widespread
Dv	<i>Dactylorhiza viridis</i>	Widespread
Dt	<i>Dactylorhiza traunsteinerioides</i>	NW Britain
Dm	<i>Dactylorhiza maculata</i>	Widespread, but northerly bias
Dk	<i>Dactylorhiza kerryensis</i>	Ireland
Ea	<i>Epipactis atrorubens</i>	Scattered
Eh	<i>Epipactis helleborine</i>	Widespread except northern Scotland
El	<i>Epipactis leptochila</i>	Cotswolds and Chilterns
Epa	<i>Epipactis palustris</i>	Widespread
Eph	<i>Epipactis phyllanthes</i>	Southern Britain
Epu	<i>Epipactis purpurata</i>	Cotswolds, Chilterns, Hampshire
Ed	<i>Epipactis dunensis</i>	Scattered
Gb	<i>Gymnadenia borealis</i>	Mainly Northern Britain
Gc	<i>Gymnadenia conopsea</i>	Southern Britain, not in northern Scotland
Gd	<i>Gymnadenia densiflora</i>	Southern Britain, not in northern Scotland
Gr	<i>Goodyera repens</i>	Northern Britain
Hh	<i>Hymantoglossum hircinum</i>	Scattered in South
Hm	<i>Hermidium monorchis</i>	Cotswolds, Chilterns, Hampshire
No	<i>Neottia ovata</i>	Widespread
Nu	<i>Neotinia ustulata</i>	Cotswolds, Chilterns, Hampshire
Nn	<i>Neottia nidus-avis</i>	Cotswolds, Chilterns, Hampshire
Orma	<i>Orchis maculata</i>	Widespread
Ormi	<i>Orchis militaris</i>	Chilterns, Suffolk
Orp	<i>Orchis purpurea</i>	Kent
Ora	<i>Orchis anthropophora</i>	Southern England
Opa	<i>Ophrys apifera</i>	Southern Britain, not in northern Scotland
Opf	<i>Ophrys fuciflora</i>	Kent
Opi	<i>Ophrys insectifera</i>	Southern Britain, not in northern Scotland
Ops	<i>Ophrys sphegodes</i>	Dorset, Kent
Pb	<i>Platanthera bifolia</i>	Widespread, but westerly bias
Pc	<i>Platanthera chlorantha</i>	Widespread
Sr	<i>Spiranthes romazoffiana</i>	West of Scotland, Wales. Ireland
Ss	<i>Spiranthes spiralis</i>	Southern Britain, not in northern Scotland

### Appendix 3 Average seed, seed pod dimensions and pod attachment angle to the upright for most British and Irish orchids

	Species	Angle	Seeds				Pods				
			n	L mm	W mm	L:W	n	L mm	W mm	L:W	n
Anacamptis morio	Am	8.8	5	0.736	0.202	3.74	10	21.55	7.02	3.10	5
Anacamptis pyramidalis	Ap	36.4	26	0.433	0.139	3.17	47	8.49	3.21	2.72	53
Cephalanthera damasonium	Cd	7.2	6	0.958	0.206	4.75	22	24.30	7.61	3.49	8
Cephalanthera longifolia	Cl	32.0	2	1.509	0.151	10.44	7	22.47	5.95	3.78	2
Coralorhiza trifida	Ct	137.3	7	0.613	0.213	2.94	4	9.17	4.16	2.22	8
Dactylorhiza fuchsii	Df	29.0	66	0.699	0.158	4.41	43	8.33	4.04	2.10	119
Dactylorhiza incarnata	Di	24.9	19	0.636	0.221	3.02	22	11.45	5.51	2.10	13
Dactylorhiza maculata	Dm	32.4	5	0.737	0.220	3.51	4	8.37	4.05	2.13	2
Dactylorhiza praetermissa	Dpr	29.8	8	0.622	0.173	3.59	18	8.92	4.85	1.85	10
Dactylorhiza purpurella	Dpu	25.5	6	0.893	0.257	3.49	4	13.07	4.18	3.13	2
Dactylorhiza traunsterioides	Dt	34.0	1	0.708	0.201	3.52	4	12.73	6.06	2.10	1
Dactylorhiza viridis	Dv	31.1	6	0.641	0.160	4.03	11	7.07	3.83	1.86	5
Epipactis atrorubens	Ea	115.3	3	0.759	0.275	2.76	8	7.88	6.06	1.30	1
Epipactis dunensis	Ed	116.1	21	1.020	0.234	4.38	31	11.10	6.29	1.81	27
Epipactis helleborine	Eh	115.8	66	1.054	0.223	4.81	50	11.01	6.89	1.62	91
Epipactis leptochila	El	111.1	44	0.877	0.180	4.82	11	9.79	6.02	1.72	43
Epipactis palustris	Epa	114.4	5	1.348	0.208	6.70	12	13.88	6.39	2.17	8
Epipactis phyllanthes	Eph	153.1	15	0.993	0.229	4.36	20	10.98	5.65	2.00	20
Epipactis purpurata	Epu	110.5	20	1.259	0.221	5.74	26	13.23	7.40	1.82	26
Epipactis x stephensonii	Exst	118.3	6	1.210	0.203	5.97	10	9.75	6.31	1.57	8
Goodyera repens	Gr	28.0	1	0.640	0.100	6.40	5	6.22	3.01	2.08	2
Gymnadenia borealis	Gb	17.2	7	0.467	0.180	2.62	4	8.07	4.01	2.01	3
Gymnadenia conopsea	Gc	19.1	21	0.498	0.192	2.60	21	8.18	3.27	2.54	52
Gymnadenia densiflora	Gd	33.6	8	0.530	0.248	2.14	5	7.01	3.89	1.86	9
Herminium monorchis	Hm	17.9	36	0.375	0.163	2.30	17	4.25	1.50	2.85	41
Neottia nidus-avis	Nn	56.7	16	0.837	0.275	3.02	16	10.90	4.35	2.57	13
Neottia ovata	No	33.0	3	0.646	0.170	3.84	8	3.51	5.49	0.64	1
Ophrys apifera	Opa	7.5	6	0.520	0.180	2.89	17	16.49	4.44	3.64	9
Ophrys insectifera	Opi	20.0	1	0.532	0.144	3.69	5	13.10	3.04	4.34	3
Orchis anthropopophora	Ora	6.0	3	0.165	0.065	2.54	2	8.18	3.13	2.61	2
Orchis mascula	Orma	10.3	10	0.421	0.187	2.24	18	16.69	4.97	3.40	27
Orchis militaris	Ormi	31.7	11	0.392	0.140	2.86	16	15.27	4.84	3.15	7
Orchis purpurea	Orp	20.6	11	0.413	0.159	2.64	12	16.67	5.74	3.03	16
Platanthera bifolia	Pb	12.7	12	0.750	0.123	6.13	4	12.52	4.11	3.06	3
Platanthera chlorantha	Pc	12.2	33	0.752	0.136	5.55	143	16.98	4.07	4.34	59
Platanthera x hybrida	Px	15.8	13	0.724	0.144	5.03	33	13.31	4.80	2.82	19
Spiranthes spiralis	Ss	22.5	4	0.404	0.142	2.85	5	5.98	2.93	2.06	7
x Dactyloctenium st quintinii	DfxGc	21.5	4	0.522	0.210	2.48	6	11.89	4.99	2.38	2
				537				701			727

## Appendix 4 Pod dimensions sorted on length to width ratio

	Species	Angle	n	Seeds			Pods				
				L mm	W mm	L:W	n	L mm	W mm	L:W	n
Neottia ovata	No	33.0	3	0.646	0.170	3.84	8	3.51	5.49	0.64	1
Epipactis atrorubens	Ea	115.3	3	0.759	0.275	2.76	8	7.88	6.06	1.30	1
Epipactis x stephensonii	Exst	118.3	6	1.210	0.203	5.97	10	9.75	6.31	1.57	8
Epipactis helleborine	Eh	115.8	66	1.054	0.223	4.81	50	11.01	6.89	1.62	91
Epipactis leptochila	El	111.1	44	0.877	0.180	4.82	11	9.79	6.02	1.72	43
Epipactis dunensis	Ed	116.1	21	1.020	0.234	4.38	31	11.10	6.29	1.81	27
Epipactis purpurata	Epu	110.5	20	1.259	0.221	5.74	26	13.23	7.40	1.82	26
Dactylorhiza praetermissa	Dpr	29.8	8	0.622	0.173	3.59	18	8.92	4.85	1.85	10
Gymnadenia densiflora	Gd	33.6	8	0.530	0.248	2.14	5	7.01	3.89	1.86	9
Dactylorhiza viridis	Dv	31.1	6	0.641	0.160	4.03	11	7.07	3.83	1.86	5
Epipactis phyllanthes	Eph	153.1	15	0.993	0.229	4.36	20	10.98	5.65	2.00	20
Gymnadenia borealis	Gb	17.2	7	0.467	0.180	2.62	4	8.07	4.01	2.01	3
Spiranthes spiralis	Ss	22.5	4	0.404	0.142	2.85	5	5.98	2.93	2.06	7
Goodyera repens	Gr	28.0	1	0.640	0.100	6.40	5	6.22	3.01	2.08	2
Dactylorhiza incarnata	Di	24.9	19	0.636	0.221	3.02	22	11.45	5.51	2.10	13
Dactylorhiza traunsterioides	Dt	34.0	1	0.708	0.201	3.52	4	12.73	6.06	2.10	1
Dactylorhiza fuchsii	Df	29.0	66	0.699	0.158	4.41	43	8.33	4.04	2.10	119
Dactylorhiza maculata	Dm	32.4	5	0.737	0.220	3.51	4	8.37	4.05	2.13	2
Epipactis palustris	Epa	114.4	5	1.348	0.208	6.70	12	13.88	6.39	2.17	8
Coralorhiza trifida	Ct	137.3	7	0.613	0.213	2.94	4	9.17	4.16	2.22	8
x Dactylodenia st quintinii	DfxGc	21.5	4	0.522	0.210	2.48	6	11.89	4.99	2.38	2
Gymnadenia conopsea	Gc	19.1	21	0.498	0.192	2.60	21	8.18	3.27	2.54	52
Neottia nidus-avis	Nn	56.7	16	0.837	0.275	3.02	16	10.90	4.35	2.57	13
Orchis anthropopophora	Ora	6.0	3	0.165	0.065	2.54	2	8.18	3.13	2.61	2
Anacamptis pyramidalis	Ap	36.4	26	0.433	0.139	3.17	47	8.49	3.21	2.72	53
Platanthera x hybrida	Px	15.8	13	0.724	0.144	5.03	33	13.31	4.80	2.82	19
Herminium monorchis	Hm	17.9	36	0.375	0.163	2.30	17	4.25	1.50	2.85	41
Orchis purpura	Orp	20.6	11	0.413	0.159	2.64	12	16.67	5.74	3.03	16
Platanthera bifolia	Pb	12.7	12	0.750	0.123	6.13	4	12.52	4.11	3.06	3
Anacamptis morio	Am	8.8	5	0.736	0.202	3.74	10	21.55	7.02	3.10	5
Dactylorhiza purpurella	Dpu	25.5	6	0.893	0.257	3.49	4	13.07	4.18	3.13	2
Orchis militaris	Ormi	31.7	11	0.392	0.140	2.86	16	15.27	4.84	3.15	7
Orchis mascula	Orma	10.3	10	0.421	0.187	2.24	18	16.69	4.97	3.40	27
Cephalanthera damasonium	Cd	7.2	6	0.958	0.206	4.75	22	24.30	7.61	3.49	8
Ophrys apifera	Opa	7.5	6	0.520	0.180	2.89	17	16.49	4.44	3.64	9
Cephalanthera longifolia	Cl	32.0	2	1.509	0.151	10.44	7	22.47	5.95	3.78	2
Platanthera chlorantha	Pc	12.2	33	0.752	0.136	5.55	143	16.98	4.07	4.34	59
Ophrys insectifera	Opi	20.0	1	0.532	0.144	3.69	5	13.10	3.04	4.34	3

**Appendix 5 Seed dimensions sorted by seed length**

	Species	Seeds		L:W	n
		L mm	W mm		
<i>Orchis anthropopophora</i>	Ora	0.165	0.065	2.54	2
<i>Herminium monorchis</i>	Hm	0.375	0.163	2.30	17
<i>Orchis militaris</i>	Ormi	0.392	0.140	2.86	16
<i>Spiranthes spiralis</i>	Ss	0.404	0.142	2.85	5
<i>Orchis purpura</i>	Orp	0.413	0.159	2.64	12
<i>Orchis mascula</i>	Orma	0.421	0.187	2.24	18
<i>Anacamptis pyramidalis</i>	Ap	0.433	0.139	3.17	47
<i>Gymnadenia borealis</i>	Gb	0.467	0.180	2.62	4
<i>Gymnadenia conopsea</i>	Gc	0.498	0.192	2.60	21
<i>Ophrys apifera</i>	Opa	0.520	0.180	2.89	17
<i>x Dactylodenia st quintinii</i>	DfxGc	0.522	0.210	2.48	6
<i>Gymnadenia densiflora</i>	Gd	0.530	0.248	2.14	5
<i>Ophrys insectifera</i>	Opi	0.532	0.144	3.69	5
<i>Coralorhiza trifida</i>	Ct	0.613	0.213	2.94	4
<i>Dactylorhiza praetermissa</i>	Dpr	0.622	0.173	3.59	18
<i>Dactylorhiza incarnata</i>	Di	0.636	0.221	3.02	22
<i>Goodyera repens</i>	Gr	0.640	0.100	6.40	5
<i>Dactylorhiza viridis</i>	Dv	0.641	0.160	4.03	11
<i>Neottia ovata</i>	No	0.646	0.170	3.84	8
<i>Dactylorhiza fuchsii</i>	Df	0.699	0.158	4.41	43
<i>Dactylorhiza traunsterioides</i>	Dt	0.708	0.201	3.52	4
<i>Platanthera x hybrida</i>	Px	0.724	0.144	5.03	33
<i>Anacamptis morio</i>	Am	0.736	0.202	3.74	10
<i>Dactylorhiza maculata</i>	Dm	0.737	0.220	3.51	4
<i>Platanthera bifolia</i>	Pb	0.750	0.123	6.13	4
<i>Platanthera chlorantha</i>	Pc	0.752	0.136	5.55	143
<i>Epipactis atrorubens</i>	Ea	0.759	0.275	2.76	8
<i>Neottia nidus-avis</i>	Nn	0.837	0.275	3.02	16
<i>Epipactis leptochila</i>	El	0.877	0.180	4.82	11
<i>Dactylorhiza purpurella</i>	Dpu	0.893	0.257	3.49	4
<i>Cephalanthera damasonium</i>	Cd	0.958	0.206	4.75	22
<i>Epipactis phyllanthes</i>	Eph	0.993	0.229	4.36	20
<i>Epipactis dunensis</i>	Ed	1.020	0.234	4.38	31
<i>Epipactis helleborine</i>	Eh	1.054	0.223	4.81	50
<i>Epipactis x stephensonii</i>	Exst	1.210	0.203	5.97	10
<i>Epipactis purpurata</i>	Epu	1.259	0.221	5.74	26
<i>Epipactis palustris</i>	Epa	1.348	0.208	6.70	12
<i>Cephalanthera longifolia</i>	Cl	1.509	0.151	10.44	7

**Appendix 6 Orchid pod angle of attachment sorted on smallest to largest**

	Species	Angle	n
Orchis anthropopophora	Ora	6.0	3
Cephalanthera damasonium	Cd	7.2	6
Ophrys apifera	Opa	7.5	6
Anacamptis morio	Am	8.8	5
Orchis mascula	Orma	10.3	10
Platanthera chlorantha	Pc	12.2	33
Platanthera bifolia	Pb	12.7	12
Platanthera x hybrida	Px	15.8	13
Gymnadenia borealis	Gb	17.2	7
Herminium monorchis	Hm	17.9	36
Gymnadenia conopsea	Gc	19.1	21
Ophrys insectifera	Opi	20.0	1
Orchis purpurea	Orp	20.6	11
x Dactylodenia st quintinii	DfxGc	21.5	4
Spiranthes spiralis	Ss	22.5	4
Dactylorhiza incarnata	Di	24.9	19
Dactylorhiza purpurella	Dpu	25.5	6
Goodyera repens	Gr	28.0	1
Dactylorhiza fuchsii	Df	29.0	66
Dactylorhiza praetermissa	Dpr	29.8	8
Dactylorhiza viridis	Dv	31.1	6
Orchis militaris	Ormi	31.7	11
Cephalanthera longifolia	Cl	32.0	2
Dactylorhiza maculata	Dm	32.4	5
Neottia ovata	No	33.0	3
Gymnadenia densiflora	Gd	33.6	8
Dactylorhiza traunsterioides	Dt	34.0	1
Anacamptis pyramidalis	Ap	36.4	26
Neottia nidus-avis	Nn	56.7	16
Epipactis purpurata	Epu	110.5	20
Epipactis leptochila	El	111.1	44
Epipactis palustris	Epa	114.4	5
Epipactis atrorubens	Ea	115.3	3
Epipactis helleborine	Eh	115.8	66
Epipactis dunensis	Ed	116.1	21
Epipactis x stephensonii	Exst	118.3	6
Coralorhiza trifida	Ct	137.3	7
Epipactis phyllanthes	Eph	153.1	15