Appendices to Rydin and Borgegård "Plant species characteristics over a century on islands: Lake Hjälmaren".

Appendix 1. Occurrences of the most important species on 30 islands in Hjälmaren over the century of succession. The list includes all species which have appeared on at least 10 of the islands or which have been noted as "abundant" on at least 3 islands in at least one survey. "Arrive" and "Decline" is the first and last survey at which the species reached at least 50% of its maximum island frequency, respectively (or abundance for species that were noted as abundant on at least three islands).

			Frequency (number of islands)					Abundance (number of islands)				
Species	Arrive	Decline	1886	1892	1903 -04	1927 -28	1984 -85	1886	1892	1903 -04	1927 -28	1984 -85
Pioneers												
Bidens tripartita	1	1	17	27	10	8	11	8	1	0	0	0
Epilobium montanum	1	1	8	6	4	6	3	5	0	0	0	0
Epilobium palustre	1	1	21	19	20	24	17	15	0	0	0	0
Gnaphalium uliginosum	1	2	14	22	4	3	2	-	-	-	-	-
Polygonum hydropiper	1	1	20	21	4	8	4	14	1	0	0	0
Polygonum lapathifolium	1	1	22	23	10	2	5	16	1	0	0	0
Polygonum minus	1	1	9	6	1	3	0	5	0	0	0	0
Ranunculus sceleratus	1	1	14	5	1	4	0	-	-	-	-	-
Rorippa palustris	1	1	22	23	16	13	7	10	0	0	0	0
Senecio vulgaris	1	2	11	9	0	1	0	-	-	-	-	-
Solanum dulcamara	1	1	23	29	28	28	30	15	4	0	1	4
Taraxacum officinale	1	1	23	22	22	24	26	11	0	1	0	0
Tussilago farfara	1	1	26	25	23	23	30	16	1	2	0	0
Pioneer stayers												
Cirsium vulgare	1	5	12	14	5	10	7	-	-	-	-	-
Epilobium angustifolium	1	2	22	22	22	22	27	11	6	5	5	5
Galium palustre	1	5	16	23	28	29	30	-	-	-	-	-
Myosoton aquaticum	1	5	16	16	10	15	14	-	-	-	-	-
Populus tremula	1	5	17	24	22	22	23	9	4	6	16	16
Rumex acetosa	1	4	15	11	14	14	2	-	-	-	-	-
Early successional species												
Alopecurus geniculatus	2	2	7	25	5	0	0	-	-	-	-	-
Carex leporina	2	2	0	11	1	0	0	-	-	-	-	-
Carex pseudocyperus	2	2	0	11	3	5	4	-	-	-	-	-
Carex rostrata	2	3	0	19	22	6	1	0	3	3	0	0
Carex vesicaria	2	3	18	25	25	22	2	0	3	2	1	0
Eleocharis acicularis	2	3	0	11	7	1	0	-	-	-	-	-
Eriophorum angustifolium	2	2	0	11	4	0	0	-	-	-	-	-
Juncus articulatus	1	3	7	11	6	4	0	-	-	-	-	-
Lycopus europaeus	2	3	5	21	27	28	30	0	2	3	0	0
Phleum pratense	2	3	1	12	6	3	0	-	-	-	-	-
Polygonum amphibium	2	4	2	12	11	8	4	-	-	-	-	-
Salix caprea	2	4	20	23	23	21	18	0	4	3	2	0
Salix cinerea	2	2	2	26	28	28	28	0	7	1	2	1
Salix pentandra	2	4	5	19	20	14	4	-	-	-	-	-
Scirpus lacustris	2	3	0	20	18	3	5	0	3	3	0	0
Tanacetum vulgare	2	5	7	16	16	13	12	-	-	-	-	-
Early successional stayers												
Agrostis capillaris	2	5	2	11	9	5	7	-	-	-	-	-
Alisma plantago-aquatica	2	4	2	20	18	10	5	-	-	-	-	-
Betula spp.	2	5	11	23	22	23	26	0	11	8	12	9
Cicuta virosa	2	5	0	17	19	26	24	-	-	-	-	-
Cirsium arvense	2	5	8	17	10	11	16	-	-	-	-	-
Cirsium palustre	1	5	8	15	17	20	16	-	-	-	-	-
Hieracium umbellatum	2	5	1	9	10	9	9	-	-	-	-	-
Phragmites australis	2	5	1	23	23	26	29	0	7	7	9	11
Pinus sylvestris	2	5	0	10	13	6	10	-	-	-	-	-
Sonchus arvensis	2	5	8	20	18	21	23	-	-	-	-	-

Mid successional species												
Cardamine pratensis	3	5	0	3	12	14	7	-	-	-	-	-
Carex canescens	2	3	0	15	20	7	2	-	-	-	-	-
Carex nigra	3	3	1	6	14	5	1	-	-	-	-	-
Eleocharis palustris	3	3	2	21	25	18	11	0	1	4	0	0
Fragaria vesca	2	5	4	13	11	21	16	-	-	-	-	-
Galeopsis bifida	4	5	0	0	0	13	8	-	-	-	-	-
Mentha arvensis	3	5	1	3	12	21	16	-	-	-	-	-
Myosotis laxa	2	5	0	16	15	24	14	-	-	-	-	-
Orthilia secunda	3	4	0	1	15	11	3	-	-	-	-	-
Phalaris arundinacea	3	3	4	19	28	30	30	0	2	10	4	1
Poa pratensis	4	5	1	5	6	13	9	-	-	-	-	-
Poa trivialis	3	4	4	7	11	19	3	-	-	-	-	-
Potentilla palustris	2	4	0	9	14	7	5	-	-	-	-	-
Ranunculus flammula	2	4	5	19	22	14	8	-	-	-	-	-
Ranunculus repens	3	3	4	7	11	15	11	0	0	3	0	0
Rumex crispus	3	4	0	4	12	12	3	-	-	-	-	-
Salix aurita	2	4	0	14	21	18	7	-	-	-	-	-
Salix nigricans	2	4	0	13	21	24	11	-	-	-	-	-
Stellaria palustris	4	4	0	1	8	19	7	-	-	-	-	-
Veronica scutellata	3	4	1	2	10	19	8	-	-	-	-	-
Mid successional stayers and late species												
Acer platanoides	5	5	0	3	3	4	20	-	-	-	-	-
Alnus glutinosa	4	5	3	20	24	27	30	0	8	5	23	23
Angelica sylvestris	5	5	0	1	1	5	19	-	-	-	-	-
Calamagrostis canescens	4	5	0	8	17	26	26	0	0	3	11	11
Calamagrostis purpurea	5	5	0	0	0	2	19	-	-	-	-	
Carex acuta	4	5	0	14	27	28	30	0	2	9	13	20
Chelidonium majus	5	5	0	1	4	4	9	0	0	0	1	3
Convallaria majalis	5	5	0	0	0	3	10	-	-	-	-	-
Dryopteris carthusiana	5	5	2	0	9	6	20	-	-	-	-	-
Eupatorium cannabinum	5	5	0	1	2	1	16	-	-	-	-	-
Fallopia convolvulus	5	5	0	0	0	1	10	-	-	-	-	-
Filipendula ulmaria	4	5	0	4	9	14	19	0	0	1	2	3
Fraxinus excelsior	5	5	0	0	7	6	27	-	-	-	-	-
Galium aparine	4	5	0	0	2	10	13	-	-	-	-	-
Geranium robertianum	4	5	6	6	9	16	23	-	-	-	-	-
Iris pseudacorus	5	5	0	0	0	0	19	-	-	-	-	-
Lactuca muralis	5	5	0	0	1	2	12	-	-	-	-	-
Lysimachia thyrsiflora	3	5	0	6	11	10	19	-	-	-	-	-
Lysimachia vulgaris	4	5	0	2	12	20	28	-	-	-	-	-
Lythrum salicaria	3	5	5	13	20	23	30	-	-	-	-	-
Melampyrum pratense	5	5	0	0	0	1	13	-	-	-	-	-
Moehringia trinervia	4	5	0	1	2	20	27	-	-	-	-	-
Myosotis scorpioides	3	5	5	2	7	5	11	-	-	-	-	-
Peucedanum palustre	3	5	0	12	16	21	27	-	-	-	-	-
Picea abies	3	5	0	4	15	8	17	-	-	-	-	-
Poa angustifolia	5	5	0	0	0	1	12	-	-	-	-	-
Polygonatum multiflorum	5	5	0	0	0	1	14	-	-	-	-	-
Polygonatum odoratum	5	5	0	1	0	5	12	-	-	-	-	-
Prunus padus	5	5	0	0	6	10	25	-	-	-	-	-
Ribes alpinum	5	5	0	0	1	5	18	-	-	-	-	-
Ribes nigrum	5	5	0	0	1	2	11	-	-	-	-	-
Ribes rubrum	5	5	0	0	1	2	18	-	-	-	-	-
Ribes uva-crispa	4	5	1	0	4	7	11	-	-	-	-	-
Rosa canina	4	5	0	0	2	8	13	-	-	-	-	-
Rubus idaeus	5	5	4	10	20	26	28	0	0	3	6	14
Rumex hydrolapathum	5	5	0	0	2	6	23	-	-	-	-	-
Salix fragilis	4	5	1	2	2	7	14	-	-	-	-	-
Scrophularia nodosa	4	5	7	11	13	18	28	-	-	-	-	-
Scutellaria galericulata	5	5	1	4	9	24	28	0	0	0	0	6
Sium latifolium	5	5	0	0	2	5	18	-	-	-	-	-

Sorbus aucuparia	3	5	3	12	18	17	28	-	-	-	-	-
Stachys palustris	4	5	0	1	5	17	30	-	-	-	-	-
Thalictrum flavum	4	5	0	0	2	5	10	-	-	-	-	-
Tilia cordata	5	5	0	0	2	5	14	-	-	-	-	-
Typha latifolia	5	5	0	0	3	5	11	-	-	-	-	-
Ulmus glabra	5	5	0	1	2	6	17	-	-	-	-	-
Urtica dioica	4	5	7	11	16	16	27	0	1	3	6	7

Appendices to Rydin and Borgegård "Plant species characteristics over a century on islands: Lake Hjälmaren".

Appendix 2. Species attributes as defined in the Methods section.

Species	Life form	Height (m)	Long-evity	Breeding system	Polli-nation	Seed number	Seed mass (mg)	Vegeta-tive reprod.	Water	Dispe Wi
Pioneers										
Bidens tripartita	T	0.40	1	A	I	1000	2.72	0	2	
Epilobium montanum	H	0.40	3	A	I	2500	0.13	2	1	
Epilobium palustre	H	0.20	3	A	I	1000	0.04	2	1	
Gnaphalium uliginosum	T	0.10	1	A	W	900	0.02	0	0	
Polygonum hydropiper	T	0.30	1	A	I	350	1.66	0	2	
Polygonum lapathifolium	T	0.40	1	A	I	800	2.25	0	1	
Polygonum minus	T	0.15	1	A	I	900	0.73	0	2	
Ranunculus sceleratus	T	0.25	1	A	I	26500	0.19	0	2	
Rorippa palustris	T	0.25	1	A	I	13000	0.10	0	2	
Senecio vulgaris	T	0.20	1	A	I	5000	0.21	0	2	
Solanum dulcamara	A	1.00	3	C	I	42000	1.42	0	2	
Taraxacum officinale	H	0.25	3	H	I	3000	0.75	1	2	
Tussilago farfara	G	0.10	3	C	I	3500	0.25	2	-	
Pioneer stayers										
Cirsium vulgare	H	0.70	2	B	I	2800	2.64	0	2	
Epilobium angustifolium	H	1.00	3	C	I	50000	0.05	2	2	
Galium palustre	H	0.15	3	B	I	900	0.91	2	2	
Myosoton aquaticum	G	0.25	3	A	I	1500	0.28	0	2	
Populus tremula	P	15.00	3	C	W	-	0.13	2	-	
Rumex acetosa	H	0.40	3	C	W	2100	0.33	1	2	
Early successional species										
Alopecurus geniculatus	H	0.25	2	B	W	400	0.20	1	1	
Carex leporina	H	0.30	3	B	W	200	0.53	0	2	
Carex pseudocyperus	A	0.60	3	B	W	1100	0.72	1	2	
Carex rostrata	A	0.40	3	B	W	300	1.74	2	2	
Carex vesicaria	A	0.60	3	B	W	300	1.94	1	2	
Eleocharis acicularis	A	0.05	3	C	W	20	0.15	2	2	
Eriophorum angustifolium	A	0.50	3	B	W	200	0.44	2	2	
Juncus articulatus	H	0.30	3	B	W	10000	0.02	2	2	
Lycopus europaeus	H	0.40	3	B	I	1200	0.28	2	2	
Phleum pratense	H	0.60	3	C	W	600	0.41	0	2	
Polygonum amphibium	G	0.30	3	B	I	200	4.65	2	2	
Salix caprea	P	5.00	3	C	I	-	0.08	0	-	
Salix cinerea	N	2.00	3	C	I	-	0.07	0	-	
Salix pentandra	P	4.00	3	C	I	-	0.22	0	2	

Scirpus lacustris	A	1.00	3	C	W	200	1.62	2	1	
Tanacetum vulgare	H	0.80	3	B	I	12500	0.13	2	2	
Early successional stayers										
Agrostis capillaris	H	0.30	3	B	W	200	0.06	2	2	
Alisma plantago-aquatica	A	0.40	3	B	I	36500	0.27	2	2	
Betula spp.	P	10.00	3	C	W	-	0.15	0	2	
Cicuta virosa	H	0.80	3	B	I	4000	1.68	1	2	
Cirsium arvense	G	0.80	3	C	I	4000	1.37	2	2	
Cirsium palustre	H	1.00	2	B	I	7000	2.00	0	2	
Hieracium umbellatum	H	0.50	3	C	I	1600	0.43	1	1	
Phragmites communis	A	2.00	3	H	W	12500	0.13	2	2	
Pinus sylvestris	P	20.00	3	C	W	-	5.15	0	2	
Sonchus arvensis	G	0.75	3	B	I	13000	0.60	2	2	
Mid successional species										
Cardamine pratensis	H	0.25	3	C	I	300	0.60	1	-	
Carex canescens	H	0.25	3	B	W	100	0.34	0	2	
Carex nigra	G	0.25	3	B	W	250	0.81	1	2	
Eleocharis palustris	A	0.25	3	B	W	40	0.69	2	2	
Fragaria vesca	H	0.10	3	C	I	1500	0.31	2	2	
Galeopsis bifida	T	0.20	1	B	I	250	2.92	0	-	
Mentha arvensis	H	0.20	3	B	I	200	0.27	1	2	
Myosotis laxa	H	0.25	2	B	I	120	0.24	0	2	
Orthilia secunda	C	0.10	3	B	I	3600	0.00	2	-	
Phalaris arundinacea	A	1.00	3	C	W	600	0.67	2	2	
Poa pratensis	H	0.40	3	C	W	700	0.32	2	2	
Poa trivialis	H	0.50	3	C	W	700	0.09	1	2	
Potentilla palustris	A	0.30	3	C	I	3000	0.33	2	2	
Ranunculus flammula	H	0.05	3	C	I	25	0.37	2	2	
Ranunculus repens	H	0.20	3	B	I	150	2.32	2	2	
Rumex crispus	H	0.70	3	C	W	3700	1.33	0	2	
Salix aurita	N	1.00	3	C	I	-	0.05	0	-	
Salix nigricans	N	2.00	3	C	I	-	0.09	0	-	
Stellaria palustris	H	0.30	3	B	I	1200	0.56	2	0	
Veronica scutellata	H	0.15	3	A	I	700	3.45	0	0	
Mid successional stayers and late species										
Acer platanoides	P	8.00	3	C	I	-	152.00	0	2	
Alnus glutinosa	P	10.00	3	C	W	-	1.34	0	2	
Angelica sylvestris	H	1.00	2	B	I	5000	1.15	0	2	
Calamagrostis canescens	H	1.00	3	C	W	700	0.06	2	-	
Calamagrostis purpurea	H	1.50	3	H	W	800	0.14	2	-	
Carex acuta	A	0.60	3	B	W	600	0.49	2	2	
Chelidonium majus	H	0.40	3	C	I	6700	0.81	0	2	
Convallaria majalis	G	0.15	3	C	I	20	15.56	2	0	

Dryopteris carthusiana	H	0.50	3	B	-	-	-	2	-	3
Eupatorium cannabinum	H	1.00	3	C	I	10000	0.34	2	0	3
Fallopia convolvulus	T	0.30	1	A	W	200	1.28	0	0	1
Filipendula ulmaria	H	0.80	3	B	I	34500	0.99	1	2	1
Fraxinus excelsior	P	15.00	3	C	W	-	58.10	0	2	1
Galium aparine	T	0.50	1	A	I	360	14.98	0	2	0
Geranium robertianum	H	0.20	2	A	I	300	1.14	0	1	0
Iris pseudacorus	G	0.50	3	C	I	1400	52.94	2	2	0
Lactuca muralis	H	0.60	3	B	I	500	0.29	0	1	2
Lysimachia thyrsiflora	A	0.45	3	B	I	2500	0.32	2	2	0
Lysimachia vulgaris	H	0.80	3	B	I	10000	0.20	2	2	0
Lythrum salicaria	H	0.75	3	C	I	2500	0.06	2	0	0
Melampyrum pratense	T	0.20	1	C	I	70	6.46	0	0	0
Moehringia trinervia	H	0.15	2	B	I	2500	0.16	0	0	0
Myosotis scorpioides	H	0.25	3	B	I	100	0.28	2	2	0
Peucedanum palustre	H	0.70	2	C	I	900	3.71	0	2	1
Picea abies	P	25.00	3	B	W	-	5.60	0	1	2
Poa angustifolia	H	0.60	3	B	W	700	0.19	2	2	0
Polygonatum multiflorum	G	0.50	3	B	I	240	28.20	1	0	0
Polygonatum odoratum	G	0.30	3	B	I	120	37.30	1	0	0
Prunus padus	P	8.00	3	B	I	-	530.00	0	1	0
Ribes alpinum	N	1.00	3	C	I	-	4.82	0	0	0
Ribes nigrum	N	1.00	3	B	I	-	1.01	0	0	0
Ribes rubrum	N	1.00	3	B	I	-	6.42	0	0	0
Ribes uva-crispa	N	0.70	3	B	I	-	5.83	0	0	0
Rosa canina	N	2.00	3	C	I	-	16.10	0	1	0
Rubus idaeus	Z	1.00	3	B	I	10000	1.15	2	2	0
Rumex hydrolapathum	A	1.50	3	B	W	5000	2.61	0	2	0
Salix fragilis	P	10.00	3	C	I	-	0.09	2	-	0
Scrophularia nodosa	H	0.70	3	C	I	12000	0.08	1	0	0
Scutellaria galericulata	H	0.25	3	B	I	120	1.42	2	2	0
Sium latifolium	A	1.00	3	C	I	6000	1.55	2	2	0
Sorbus aucuparia	P	8.00	3	B	I	-	2.23	0	2	0
Stachys palustris	G	0.40	3	B	I	240	0.62	2	2	0
Thalictrum flavum	H	0.50	3	B	W	800	0.82	2	2	0
Tilia cordata	P	8.00	3	B	I	-	31.00	0	-	1
Typha latifolia	A	2.00	3	C	W	100000	0.03	2	2	3
Ulmus glabra	P	20.00	3	C	W	-	11.87	0	2	3
Urtica dioica	H	0.70	3	C	W	22000	0.19	2	-	2

Life forms: P, Phanerophyte; N, Nanophanerophyte; Z, Woody chamaephyte; C, Herbaceous chamephyte; H, Hemicryptophyte; G, Geophyte; T, Therophyte; A, Hydrophyte.
Breeding system: A, self; B, mixed or not known; C, cross; H, apomictic.