Freund et al.: Restoration of a newly created inland-dune complex

Supplement S1. Presence table for all species growing on the different treatment plots of the two restoration sites (n = 4; the number of plots with the species is given) in the years 2010 to 2013. Target species are highlighted in grey; red list species (Germany; KORNECK et al. 1996) are highlighted in bold. Additionally, the occurrence of the species on the grid plots, in seed bank and seed rain of the two sites and in the inoculation material is given. Records of species in endozoochorous samples are added.

Beilage S1. Stetigkeitstabelle aller Arten, die auf den verschiedenen Behandlungen (n = 4; die Anzahl der Plots mit der Art ist angegeben) der beiden Restitutionsflächen in den Jahren 2010 bis 2013 erfasst wurden. Zielarten sind grau hervorgehoben, Rote Liste Arten (Deutschland; KORNECK et al. 1996) sind in Fettdruck. Zusätzlich ist das Vorkommen der Arten auf den Rasterpunkten, in der Diasporenbank und im Diasporenniederschlag der beiden Flächen und im Inokulationsmaterial angegeben. Nachweise der Arten in Dungproben sind angefügt.

Columns are grouped as: **Site 1** (years 2010, 2011, 2012, 2013) and **Site 2** (years 2010, 2011, 2012, 2013); each year has four sub-columns defined by the *inoculated* (− / +) and *grazed* (− / +) treatments. The final columns are: grid plots S1 (G1), grid plots S2 (G2), seed bank S1 (SB1), seed bank S2 (SB2), seed rain S1 (SR1), seed rain S2 (SR2), inoc. material (IM), endozoochory (EN).

Species	S1 2010				S1 2011				S1 2012				S1 2013				S2 2010				S2 2011				S2 2012				S2 2013				G1	G2	SB1	SB2	SR1	SR2	IM	EN
inoculated	−	−	+	+	−	−	+	+	−	−	+	+	−	−	+	+	−	−	+	+	−	−	+	+	−	−	+	+	−	−	+	+								
grazed	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+								
Erodium cicutarium	3	1	3	1	4	2	4	2	3	3	2	2	3	3	2	1	4	3	4	3	3	2	3	3	2	1	1	2	3			2	x	x						
Corynephorus canescens	2	1	2	2	2	1	4	3	2	2	4	2	2	2	4	2		1	4	4		1	4	2	1	1	4	2					x	x				x	x	
Tortula ruraliformis			4	4	2	2	4	4	3	2	4	4	3	3	4	4	2	1	4	4	4		4	4	4	3	4	4	3	4	4	4	x	x						
Rumex acetosella s.l.				2				3	2	1	1	3	2	1	2	3	3	2	2	4	4	2	2	4	4	3	4	4	4	3	4	4	x	x		x	x		x	x
Arenaria serpyllifolia agg.			2	1			4	4		1	4	4		1	4	4		2	4	3	1	3	4	4	2	4	4	4	4	4	4	4	x	x					x	x
Cerastium semidecandrum							4	3			2	2	1	1	1	3		1	2	1	2	2	4	4	2	4	3	3	4	4	4	4	x	x				x	x	x
Echium vulgare		3		4			4	4			3	3		1	2	3	3	3	4	3	3	4	4	4	1				2	1	1	1	x	x					x	
Medicago minima							4	4		4	4	1			4	4	1	2	1		3	1	4	4	2	2	4	4	3	3	4	4	x	x					x	
Medicago lupulina																1	4	4	4	4	4	4	4	4	4	4	2	4	4	4	1	4	x	x	x					x
Trifolium arvense																	2	2	1	3	4	4	4	2	3	2	1	4	3	4	3	3	x	x						
Vicia angustifolia																	1	2	1	2	1		1	2	4	2	1	2	4	3	2	3	x	x					x	
Trifolium campestre																1					2	1	3	2	1	1	1	1	2	1	1	2	x	x						
Erophila verna							4	1										2			2	3	3	3	2		2	4				3	x	x					x	x
Vicia lathyroides																	1		1		1	1		2	1	1		2	1	1	1	1	x	x					x	x
Myosotis ramosissima																				1	1	1	1	2	1		1		2	3			x	x						
Valerianella locusta																									1		1						x	x						
Sanguisorba minor									3		1		3		1																									
Euphorbia cyparissias												1				1	1									1				1				x						
Veronica verna							1	1													1		1		1	1								x					x
Cetraria aculeata							2	1	1	1			1		1										1						2									
Potentilla argentea agg.																	3	3					4	2	1		4	3		1	3	3		x					x	x
Saxifraga tridactylites							3	3			1					1		1	4	3			2				1	1					x		x				x	
Holosteum umbellatum							3	4							2	1					1	2	1			1	1		3	3	3	1	x						x	
Vulpia myuros		1	3				1				1	3			1	3	3	1			3	2			1		4	3	1		3	3	x						x	
Phleum arenarium			4	4			4	4	1		4	4	1		4	4			4	4			4	4			4	4	1	1	4	4	x	x					x	x
Koeleria glauca			4	4			4	4			4	4	1		4	4			4	4			4	4	1		4	4	2	1	4	4	x	x					x	
Centaurea stoebe s.l.			4	4			4	4			4	4			4	3	1		4	4	2		4	4	2		4	4	2		4	4		x					x	
Petrorhagia prolifera			1	1	1		4	3			3	2			2	2	2	1			1		4	3	1		3	3	1		3	3	x	x					x	
Silene conica		1	2				4	4			4	4			4	4	2	2					4	4			2	3	1		4	3	x	x					x	x
Artemisia campestris		2	2				2	3			3	3			4	3	4	4					4	4			4	4			4	4		x					x	
Helichrysum arenarium		2	2				2	2			3	2			3	2	2	4					4	4			4	4			4	4	x						x	
Koeleria macrantha		1	3				3	3			1	3			1	3	1	1					3	1			3	2			3	1	x						x	
Sedum acre		3	2				1	2			2	2			2	1	4	3					4	2			2	2			4	2		x					x	
Ononis repens s.l.				1			4	3			4	2					3	4					3	4			3	4			4	4		x					x	
Peltigera rufescens		1	2				1	2			4				2	1							1				3	1			4	1								
Phleum phleoides							1				4	1			4	2							2	1			3	3			4	3							x	
Hieracium pilosella								1			3	2			3	2											1				1	1	x	x					x	
Herniaria glabra																			1				1																	
Thymus serpyllum																											1				1								x	
Mibora minima								1																																
Veronica praecox																											1													x
Cladonia cf. rangiformis																			1				1				2													
Helianthemum nummularium																							1				1				1									
Conyza canadensis	4	3	3	3	4	4	4	4	4	4	4	4	4	4	2	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	x	x			x	x	x	x
Elymus repens	2	2	1	1	2	2	2	3	2	2	2	3	1	2	2	3	3	2	2	2	3	4	4	3	3	3	4	3	4	3	4	4	x	x						
Oenothera biennis agg.	4	4	3	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	x	x			x	x	x	x
Setaria viridis	4	4	4	4	4	1	4	4	4	4	4	4	3	2		4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	3	x	x		x			x	
Diplotaxis tenuifolia	2	3	4	3	2	3	4	2	1	2	2	1	1	2	2		4	4	4	4	3	4	4	4		1	2	3	1	1	1	3	x	x					x	
Bromus tectorum	2	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	1		4	4	1		4	4	3	2	4	4	4	4	4	4	x	x			x		x	
Chenopodium album agg.	2	3	2	2	3	4	2	3	4	4	1	4	1	2			4	4	2	1		4		4	4	4				2			x	x	x	x	x	x	x	
Digitaria sanguinalis	2	3	3	2	1						1	2			1		4	4	3	4	2	4	2	3	3	3			1	3	1		x	x			x	x	x	
Artemisia vulgaris		1		1		1		2		1	1	2		1	1	2	3	4	4	4	2	4	4	3	4	4	4	4	2	4	3	4	x	x					x	
Equisetum arvense		1				1					1				1	1	2	3	2	3	2	3	2	3	3	2	2	3	4	3	2	2	x	x						
Corispermum leptopterum		1	3	3		1	2	2		2	1	3			1	2	4	4	4	3	3	3	1	1	4	3	2	1	3	1	2		x	x			x		x	
Carex hirta							1	1			1	2			1	1	1	1		1	1	1	1	1	1	1	1	1	1	1			x	x					x	
Apera spica-venti								1	1						1	1	1	1	2		2	2	3		3	2	2	2	3	3	2	1	x	x					x	
Papaver dubium s.l.						1					2					1	1	1		2	1	1	1	2	2	3		1	2	1			x	x					x	x
Papaver rhoeas						1	1				1					1	4	4	4	3	4	1	2	2	2	2			1	3			x	x					x	
Convolvulus arvensis	1						2			2					2		1	1	2		1		3	1			2	1		1			x	x						
Poa angustifolia		1					3	1	3		2	3	3	1	3	3					1	2	1			2	2	2	1	2	2	3	x	x						x
Salsola kali subsp. *tragus*						4	4		2	2	4	4	1	2	2	4							4	4	3	3	2	3	2	2	1	4	x	x					x	
Silene latifolia subsp. *alba*							1					1				1	4	4	3	2	4	4	3	2	2	4	2	2	4	4	1	2	x	x						
Melilotus albus											1					1	4	4	3	4	4	4	3	4	4	4	4	4	4	4	4	4	x	x					x	
Setaria pumila																	4	4	4	4	4	4	4	4	4	3	4	1	3	4	1	1	x	x			x		x	
Berteroa incana																	3	4	1	3	3	3	2	3	3	4		4	4	4	2	4	x	x					x	
Eragrostis minor	1	1	4	3								2					4	4	4	4	1	2	1	1	1	1							x	x			x		x	
Robinia pseudoacacia juv.	2		1		1		1		1		1		1				1	1	3		1		2		1		2				1		x	x						
Daucus carota																	3	3	2	4	2	3	1	3	2	2		2	3	2		3		x					x	
Cirsium arvense		1				1		1			1		2	1	1		2			1		2				2				2			x	x					x	
Tanacetum vulgare						1	1				1	1			1	1	1	2	2	3	2	2	3		1	2	2	3		2	2	3	x	x						
Erigeron annuus							2	2			2	2			2	2	1		3	2	1	3	2	3	3	3	3	3	1	2	3	1	x	x					x	
Sisymbrium altissimum																	1	2	2	1		2		2	1	3	1	1	2	2		1	x	x					x	
Polygonum aviculare agg.		1										1					4	4	4	4		3		2	1	2		2			1		x	x			x			
Senecio inaequidens						1	1					1				1	1	2	1	2		1	1			1			1	1			x	x					x	
Vicia villosa s.l.																	1	1	1	2	2	1	1		2		1		3	1	2		x	x					x	
Arabidopsis thaliana																		1		1	1	3	1	3	1	2		2	2	2			x	x					x	
Fallopia convolvulus																	4	4	2	4		2		1	1	2			3	2			x	x						
Viola arvensis											1						2	3	1	1							1	1	2	1			x	x					x	
Linaria vulgaris								1				1				1	1	3	3		1		2	1	1	1	2						x						
Lactuca serriola	2	1	1	2	1	2	1	1									1	3						2	2								x	x		x	x		x	x
Vicia hirsuta							1												1	1	3				1	1		2	2	1	2	1	x	x					x	
Poa compressa						1				1					1				4	3	1	4	4				4	4	1	4	4	4	x	x					x	x
Veronica arvensis							2	1									1	1	1				1		3		3		1	3	1	2	x		x				x	
Solidago gigantea s.l.																					1	4	3		1	2	4	3	1	1	4	3		x					x	x
Oxalis dillenii																	1	1	1	1		1		1		1		1		1				x					x	

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Fortsetzung auf der Rückseite

Table legend — column structure: For each year block the four sub‑columns are: inoculated −/grazed −, inoculated −/grazed +, inoculated +/grazed −, inoculated +/grazed + (header: inoculated "−"/"+", grazed "−","+","−","+").

Species	S1 2010 i−g−	i−g+	i+g−	i+g+	S1 2011 i−g−	i−g+	i+g−	i+g+	S1 2012 i−g−	i−g+	i+g−	i+g+	S1 2013 i−g−	i−g+	i+g−	i+g+	S2 2010 i−g−	i−g+	i+g−	i+g+	S2 2011 i−g−	i−g+	i+g−	i+g+	S2 2012 i−g−	i−g+	i+g−	i+g+	S2 2013 i−g−	i−g+	i+g−	i+g+	grid plots S1	grid plots S2	seed bank S1	seed bank S2	seed rain S1	seed rain S2	inoc. material	endozoochory
Chenopodium strictum	4	4	4	4													4	4	4	4	1												x	x	x					
Bromus hordeaceus		1			1						1	2	1					1										1		1	1		x	x						
Senecio vulgaris					1	2	2	2									1				2	1	2	1									x	x					x	
Calamagrostis epigejos							1				1				1								1	1			1			2	1		x							
Ballota nigra																	1	1			1	1				1		1	1					x						
Cirsium vulgare						1				1		1		1								1											x	x		x				
Digitaria ischaemum																									2	2	3						x	x						
Chaenorhinum minus																	1		3															x						
Cardamine hirsuta																					1		1										x	x			x			
Sonchus asper								1									1																x	x		x			x	
Tragopogon dubius										1																				1										
Echinochloa crus-galli											1						3	3	2	4			1										x	x						
Lamium amplexicaule																					1	1	1		1	1	1						x	x						
Sonchus oleraceus	1						1										2					3	3										x	x	x		x		x	
Veronica hederifolia																		2		2		3		2		1							x	x						
Sisymbrium officinale		1															2	1	1																					
Persicaria maculosa																	4	4	3	4														x						
Atriplex sagittata																	4	4	3	3		3		1		2							x	x			x			
Anagallis arvensis																	2	2	3	2										1	1			x						
Stellaria media																					3	3	1	2						1	1		x	x						x
Tripleurospermum perforatum		1															2	3	2	2						1								x						
Senecio cf. *vernalis*																		1	1		1	1	1											x				x		
Bromus sterilis										1						1		1								1		1		3		1	x	x						
Amaranthus retroflexus		1	2	2													3	1	2	3													x	x	x					x
Tussilago farfara							1			1		1										2					1							x				x	x	
Solanum nigrum	3	1	1	2													4	4	4	3						1	2						x	x				x	x	
Robinia pseudoacacia seedl.																1						1																		
Malva alcea																										1						1		x						
Epilobium brachycarpum																							1											x						
Panicum miliaceum																							1																	
Veronica cf. *agrestis*																								1																
Saponaria officinalis										1						1																		x						
Capsella bursa-pastoris																							1			2			1	1			x	x						
Carduus crispus																	1					1												x						
Datura stramonium																	2	1																x						
Reseda luteola																					1	1																		
Papaver argemone																						1				1				1				x						
Descurainia sophia																						1																		
Epilobium parviflorum															1																									
Galium aparine																						2																		
Sonchus arvensis		1																																						
Urtica dioica																														1				x						x
Ambrosia artemisiifolia																	1					1				1				1				x						
Alliaria petiolata																						1												x						
Solanum physalifolium																	2																	x		x				
Bryum argenteum		1	2		4	3	4	2	4	4	4	2	4	4	4	2		1	1		4	4	4	4	4	4	4	4	4	4	4	3	x	x						
Hypochaeris radicata					1	3	4	3	1	2	4	3	1	2	3	3		1			2	3	2	3	2	2	2	4	2	4	2	4	x	x			x	x		
Prunus serotina juv.	1	1				2				1	2			1	2	1	1	1			2	1			2	2			2	2			x							
Holcus lanatus					2	2	3	3	1	1	1	2		1	2	2		1	2		1	1			1	1		1	1	1	2		x	x			x			
Pinus sylvestris juv.	3	4	3	4	2		2			3		2	3		3		4	2	4	4	2		1		2		3		3		2		x	x						
Verbascum phlomoides			2	3			3	3		2	3				1	2	1	2	4	4	1	1	4	4	1	2	4	4	4	4	4	4	x	x					x	x
Hypericum perforatum											1					1	1	1	3	2	1	1	3	2	1	1	2	2	1	1	2	1	x				x			x
Plantago lanceolata																	2	3	3	2	2	3	3	4	2	3	1	4	2	3	3	3	x							
Agrostis capillaris										1	1		1	1	1	2					1			2	2	1	1	3	2	2	1	4	x	x						
Cornus sanguinea					1	1	1										1	1	1		1	1			1				1	2			x							
Pinus sylvestris seedl.							1			3	1		2	1	2	1					3		3	2	1	2		1				1							x	x
Achillea millefolium											1				1		1		1		1	1	1		1	1	1		1	1	1		x	x						
Salix spec. juv.	1	2			1		1	1	1					1								1											x	x			x	x	x	
Festuca cf. *rubra*			2	2			3	2		1	3	2	3	1	4			1	1	2		1	2	3									x							
Brachythecium albicans								1		3	3		1	1	4	4							2			4	4		2	2	4	4	x	x						
Festuca ovina agg.									3	1			1	1	1	2										3	2		1	2	2		x							
Senecio jacobea		1				1				2				1		1																	x							
Vicia sepium																	1					2	2										x							
Galinsoga parviflora																	1					2											x							
Betula pendula seedl.														1	1																		x	x				x	x	x
Quercus robur seedl.													1	1	1																									
Ornithopus perpusillus																	2					1				1							x							
Lepidium densiflorum																					1	1				1		1		1		1	x							
Humulus lupulus											1						1	1				1	1	2		1							x	x				x		
Plantago major subsp. *intermedia*						1											2	1			1		1										x							x
Crepis capillaris									1	1							1		1		1		1			1		2	2		2		x	x						
Trifolium repens																	2	2	4		3	3	4		2		3		1		3		x							
Rumex thyrsiflorus											1			1		1						1	1		1		1			1	1		x						x	x
Quercus robur juv.				1						1			1		1							1				1				1			x							
Hypnum cupressiforme					4	4				4	4		4	3	4	4	2		4	4		1	3	1		4	3		1	1	4	3	x	x						
Cladonia cf. *pyxidata/rei*					2	2				4	3		3	1		1	1			4	3			4		3	1				2									
Dactylis glomerata							1				1						1	2					1			1							x	x						
Cladonia cf. *furcata*					2	1											1	1																						
Secale cereale											1						2	2																						
Geranium molle																						1				1						2	x							
Melilotus officinalis																						1				1							x							
Acer pseudoplatanus juv.						1																1											x							
Corylus avellana																						1				1				1										
Sedum telephium																						1				1														
Phragmites australis																														1									x	x
Rubus spec.	1					1			1													1				1	2						x	x					x	
Poa annua																						1				3			1	3			x	x						
Claytonia perfoliata																						1				1							x							
Arrhenatherum elatius										1					2																		x							
Lolium perenne					1																	1											x							
Populus spec.		1			1																	1											x	x			x	x	x	
Acer negundo																			1																					
Rosa spec.																										1							x							
Cytisus scoparius juv.	2				2				2				2																				x							
Vicia cracca																	1																							x
Acrocarpi	3	4	4	4	3	3	4	2	4	4	4	2	4	4	4	2	3	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4								
Taraxacum sect. *Ruderalia*	3		2	1	3	2	3		2	2	1	2	3	3	2	3					1	2	1	3		1		3		2		3	x	x	x	x	x	x	x	x
Nostoc spec.			2	2	1		4	4		4	4			4	4		1	4	4		2		4	2	2	2	4	4	1	1	3	2								
Crepis spec.																1																								