Breakout Group 1: Plant and Fungi species (vascular and non-vascular) **Deborah Long**				**Criterion 1**	**Criterion 2**	**Criterion 3**	**Criterion 4**	**Criterion 5**
TASK				Fill in after workshop	Fill in after workshop	Workshop	Workshop	Workshop
Species name	**Common name**	**Taxonomic Group**	**Habitat**	**Species threat status**	**Endemism**	**No. individuals and populations remaining in GB**	**Ecosystem influence**	**Knowledge of species**
		FROM LIST	FROM LIST	FROM LIST	FROM LIST	FROM LIST	FROM LIST	FROM LIST
Montane willows	Mountain willows	Vascular plant	Terrestrial		Not endemic in GB	Around 1000 to 10,0(	Very significant ecosy	Very significant know
Endemic *Sorbus* spp	Endemic rowans	Vascular plant	Terrestrial		Endemic to Scotland	Around 11 to 100 ind	Moderate ecosystem	Very significant know
Linnaea borealis	Twinflower	Vascular plant	Terrestrial	Least concern in GB	Not endemic in GB	Around 11 to 100 ind	Moderate ecosystem	High knowledge
Cicerbita alpina	Alpine blue-sowthistle	Vascular plant	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Around 11 to 100 ind	Moderate ecosystem	Very significant know
Woodsia ilvensis	Oblong woodsia	Vascular plant	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Around 100 to 1000 i	Limited ecosystem in	High knowledge
Woodsia alpina	Alpine woodsia	Vascular plant	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Around 100 to 1000 i	Limited ecosystem in	Limited knowledge
Crassula aquatica	Pigmyweed	Vascular plant	Freshwater	Endangered/Vulnerable in GB	Not endemic in GB	Around 100 to 1000 i	No/extremely low ec	Moderate knowledge
Moneses uniflora	One-flowered wintergreen	Vascular plant	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Around 1000 to 10,0(	Limited ecosystem in	Moderate knowledge
Ranunculus arvensis	Corn buttercup	Vascular plant	Terrestrial	Critically endangered in GB	Not endemic in GB	Around 11 to 100 ind	Moderate ecosystem	High knowledge

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Species name	**Common name**	**Taxonomic Group**	**Habitat**	**Species threat status**	**Endemism**	**No. individuals and populations remaining in GB**	**Ecosystem influence**	**Knowledge of species**
Najas flexilis	Slender niad	Vascular plant	Freshwater	Least concern in GB	Not endemic in GB	Around 11 to 100 ind	No/extremely low ec	High knowledge
Saxifraga hirculus	Marsh saxifrage	Vascular plant	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Around 100 to 1000 i	Limited ecosystem in	High knowledge
Polygonatum verticillatum	Whorled solomon's-seal	Vascular plant	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Around 11 to 100 ind	Limited ecosystem in	Moderate knowledge
Ranunculus reptans	Creeping spearwort	Vascular plant	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Less than 10 individu	No/extremely low ec	Limited knowledge
Primula scotica	Scottish primrose	Vascular plant	Terrestrial	Least concern in GB	Endemic to Scotland	Over 10,000 individu	Limited ecosystem in	Very significant know
Pyrola rotundifolia	Round-leaved wintergreen	Vascular plant	Terrestrial	Near threatened in GB	Not endemic in GB	Data deficiency	Limited ecosystem in	Moderate knowledge
Brackish charophytes (4 spp) *Chara baltica, Chara canescens, Lamprothamnium papulosum* and *Tolypella nidifica*	Stoneworts	Vascular plant	Coastal mar	Endangered/Vulnerable in GB	Not endemic in GB	Around 11 to 100 ind	Moderate ecosystem	Moderate knowledge
Lejeunea mandonii	*Adlantic lejeanea*	Bryophyte	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Around 11 to 100 ind	No/extremely low ec	High knowledge
Drepanocladus turgescens	Large yellow feather-moss	Bryophyte	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Less than 10 individu	No/extremely low ec	High knowledge
Habrodon perpusillus	Lesser squirrel-tail moss	Bryophyte	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Around 11 to 100 ind	No/extremely low ec	High knowledge
Pseudoleskeella nervosa	*Leskeella nervosa*	Bryophyte	Terrestrial	Critically endangered in GB	Not endemic in GB	Less than 10 individu	No/extremely low ec	Limited knowledge

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Bryum schleicheri var. latifolium	Schleicher's bryum moss	Bryophyte	Terrestrial	Critically endangered in GB	Not endemic in GB	Less than 10 individu	No/extremely low ec	High knowledge
Microhypnum sauteri		Bryophyte	Terrestrial	Not evaluated/Data deficient	Not endemic in GB	Less than 10 individu	No/extremely low ec	Moderate knowledge
Arctoa anderssonii	Andersson's arctic moss	Bryophyte	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Around 11 to 100 ind	No/extremely low ec	Moderate knowledge
Radula holtii	Holt's scalewort	Bryophyte	Terrestrial	Not evaluated/Data deficient	Not endemic in GB	Less than 10 individu	No/extremely low ec	High knowledge
Bryoria smithii		Lichen	Terrestrial	Critically endangered in GB	Not endemic in GB	Less than 10 individu	No/extremely low ec	High knowledge
Fuscopannaria ignobilis		Lichen	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Around 100 to 1000 i	**Limited ecosystem in**	High knowledge
Nephroma arcticum	Arctic kidney lichen	Lichen	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Around 100 to 1000 i	**Limited ecosystem in**	High knowledge
Nephroma resupinatum	Pimpled kidney lichen	Lichen	Terrestrial	Extinct in GB	Not endemic in GB	Less than 10 individu	No/extremely low ec	High knowledge
Peltigera lepidophora	Scaly pelt	Lichen	Terrestrial	Critically endangered in GB	Not endemic in GB	Less than 10 individu	No/extremely low ec	Moderate knowledge
Catapyrenium psoromoides	Tree *catapyrenium* (lichen)	Lichen	Terrestrial	Critically endangered in GB	Not endemic in GB	Around 11 to 100 ind	No/extremely low ec	Moderate knowledge
Hericium erinaceus, Hericium coralloides and *Ganoderma adspersum*	Heart rot fungi	Fungi	Terrestrial	Endangered/Vulnerable in GB	Not endemic in GB	Data deficiency	Moderate ecosystem	Moderate knowledge
Hypocreopsis lichenoides	Willow gloves	Fungi	Terrestrial	Critically endangered in GB	Not endemic in GB	Around 11 to 100 ind	No/extremely low ec	Limited knowledge
Chrysomyxa empetri	Crowberry rust	Fungi	Terrestrial		Not endemic in GB	Around 1000 to 10,0	Limited ecosystem in	Moderate knowledge
Hydnoid fungi	Tooth fungi	Fungi	Terrestrial		Endemic to GB	Data deficiency	Moderate ecosystem	Moderate knowledge

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Species name	**Common name**	**Taxonomic Group**	**Habitat**	**Species threat status**	**Endemism**	**No. individuals and populations remaining in GB**	**Ecosystem influence**	**Knowledge of species**
Chaenothecopsis debilis	King pin	Fungi	Terrestrial	Critically endangered in GB	Not endemic in GB	Less than 10 individu	No/extremely low ec	Moderate knowledge
Antrodia ramantacea (nivalis)	Honeycomb crust	Fungi	Terrestrial	Not evaluated/Data deficient	Not endemic in GB	Around 11 to 100 ind	Limited ecosystem in	Moderate knowledge

Criterion 6	Criterion 7	Criterion 8	Criterion 9	Criterion 10	Criterion 11	OVERALL SCORE			
Workshop	Workshop	Workshop	Workshop	Workshop	Workshop	Workshop	Optional	Workshop	Workshop
Habitat availability	**Ex situ biological complexity**	**In situ biological complexity**	**Long term viability**	**Scale of ongoing intervention & monitoring**	**Spp for which assisted colonisation considered**	**CT priority**	**Socio-economic considerations**	**Species expert**	**Data sources**
FROM LIST	FROM LIST	FROM LIST	FROM LIST	FROM LIST	FROM LIST	FROM LIST	FROM LIST	NAME	ADD LINKS
Regions of suitable h	Very limited complex	Limited complexity	Very significant likelih	Moderate further int	Assisted colonisation	CT useful & practical	Very limited socio-ec	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Limited complexity	Limited complexity	High likelihood of lon	Moderate further int	Occurs in parts of Scc	CT essential & practic	High socio-economic,	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Limited complexity	Limited complexity	High likelihood of lon	Moderate further int	Occurs in parts of Scc	CT significant & pract	Limited socio-econon	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Some suitable habita	Limited complexity	Moderate complexity	Moderate likelihood	Moderate further int	Occurs in parts of Scc	CT significant & pract	Very significant socio	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Limited complexity	Very significant comp	Data deficiency	Limited further interv	Occurs in parts of Scc	CT useful & practical	Very limited socio-ec	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Data deficiency	Data deficiency	Data deficiency	Limited further interv	Occurs in parts of Scc	CT useful & practical	Very limited socio-ec	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Data deficiency	Limited complexity	Moderate likelihood	Very limited further i	Assisted colonisation	CT useful & practical	Very limited socio-ec	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Very significant comp	Moderate complexity	Moderate likelihood	Moderate further int	Occurs in parts of Scc	CT essential & practic	Limited socio-econon	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Moderate complexity	Moderate complexity	High likelihood of lon	Very significant furth	Occurs in parts of Scc	CT useful & practical	Moderate socio-econ	Alistair Whyte and Oliver Moore (Plantlife Scotland)	

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Regions of suitable h	Moderate complexity	Limited complexity	High likelihood of lon	Limited further interv	Assisted colonisation	CT essential & practic	Very limited socio-ec	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
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Regions of suitable h	Limited complexity	Moderate complexity	Moderate likelihood	Moderate further int	Occurs in parts of Scc	CT essential & practic	Limited socio-econon	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Moderate complexity	Moderate complexity	Moderate likelihood	Limited further interv	Occurs in parts of Scc	CT significant & pract	Very limited socio-ec	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Limited complexity	Moderate complexity	Very significant likelih	High further interven	Occurs in parts of Scc	CT useful & practical	High socio-economic	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Data deficiency	Data deficiency	Moderate likelihood	Limited further interv	Assisted colonisation	CT useful & practical	Limited socio-econon	Alistair Whyte and Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Limited complexity	Limited complexity	High likelihood of lon	Limited further interv	Occurs in parts of Scc	CT significant & pract	Moderate socio-econ	Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Limited complexity	Moderate complexity	High likelihood of lon	Limited further interv	Occurs in parts of Scc	CT essential & practic	Very limited socio-ec	Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Limited complexity	Limited complexity	Moderate likelihood	Moderate further int	Occurs in parts of Scc	CT significant & pract	Very limited socio-ec	Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Limited complexity	Limited complexity	High likelihood of lon	Limited further interv	Data deficient	CT useful & practical	Very limited socio-ec	Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Limited complexity	Limited complexity	High likelihood of lon	Limited further interv	Data deficient	CT significant & pract	Very limited socio-ec	Oliver Moore (Plantlife Scotland)	

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Regions of suitable h	Limited complexity	Limited complexity	Very significant likelih	Moderate further int	Occurs in parts of Scc	CT essential & practic	Very limited socio-ec	Oliver Moore (Plantlife Scotland)	Gordon Rothero h
Regions of suitable h	Moderate complexity	Limited complexity	High likelihood of lon	Very limited further i		CT useful & practical	Very limited socio-ec	Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Moderate complexity	Limited complexity	High likelihood of lon	Very limited further i		CT useful & practical	Very limited socio-ec	Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Moderate complexity	Moderate complexity	Data deficiency	Moderate further int		CT useful & practical	Very limited socio-ec	Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Moderate complexity	Limited complexity	High likelihood of lon	Moderate further int	Occurs in England / \	CT essential & practic	Moderate socio-econ	Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Moderate complexity	Moderate complexity	Moderate likelihood	Moderate further int	Assisted colonisation	CT significant & pract	Moderate socio-econ	Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Moderate complexity	Limited complexity	Data deficiency	Data deficiency	Occurs in parts of Scc	CT useful & practical	Very limited socio-ec	Oliver Moore (Plantlife Scotland)	
Regions of suitable h	Moderate complexity	Moderate complexity	High likelihood of lon	Moderate further int	Occurs in parts of Scc	CT essential & practic	Moderate socio-econ	Oliver Moore (Plantlife Scotland)	
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Regions of suitable h	Moderate complexity	Limited complexity	High likelihood of lon	Moderate further int		CT essential & practic	Limited socio-econon	Oliver Moore (Plantlife	
Regions of suitable h	Very limited complex	Limited complexity	High likelihood of lon	Limited further interv	Occurs in parts of Scc	CT significant & pract	Moderate socio-econ	Kat O-Brien (NatureScot)	https://orca.cardif
Regions of suitable h	Limited complexity	Limited complexity	Moderate likelihood	Very limited further i	Occurs in parts of Scc	CT essential & practic	Very limited socio-ec	Natural England Matthew Wainhouse and Lynne Boddy	. A translocation pr
Regions of suitable h	Moderate complexity	Limited complexity	High likelihood of lon	Limited further interv	Occurs in parts of Scc	CT useful & practical	Very limited socio-ec		
Regions of suitable h	Moderate complexity	Limited complexity	Moderate likelihood	Moderate further int	Occurs in parts of Scc	CT useful & practical	Moderate socio-econ		

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Regions of suitable h	Limited complexity	Limited complexity	High likelihood of lon	Limited further interv	Data deficient	CT useful & practical	Very limited socio-ec		

Notes
ADD TEXT
In situ complexity: deer levels key and needs maintined. INcludes S. lanta, lapponum, reticulta, arbuscula, myrsinites
In situ complexity = deer control
Use BSBI Atlas no of hectads for indivduals and sites. Forestry operation will impact
Should have mod ecosystem influence; hab restoration = deer management if implemented which would produce more sites. Habitat management key to long term viablity
Lots of limited habitat across Scotland; not known if reproduces in wild; just monitoring required. Assisted colonisation to west may be required (depends on natural range def)
Monitoring and survey required to establish range and populations. Complexity insitu and ex situ unknown because translocation not tried.
Globally common but rare in Scotland; needs more survey to establish range
Requires habitat management; ongoing intervention and monitoring. Forestry management required. Translocation througout nat rnanagement. Ongoing habitat management required - woodland management.
Potential pollinator function in these habitats if common enough. Viablity highly dependent on habitat management. Assisted colonisation to help shift range north. Cultural implications of wild flower meadows

Notes
Monitoring required. Translocatoin helpful to increase genetic diversity within populations. Deer control probably helpful.
Also consider Pilularia globulifera which is less restricted but declining and NT
Endemic fungal association; dependent on hab management; high level cultural importance
Not known but Aline checking on insitu complexity. Moderate viability if plants take successfully and management is in place. Look
Climate change threat dependent on sea level changes, which would change of freshwater to brackish
3 tree (habitat) remaining: requires healthy host tree. Further survey could find more populations. Species knowledge high,
Needs high flushes. Needs ongoing monitoring no intervention. Translocation needed as flushes dry out
Needs more survey, Host trees: ash and elm. Needs monitoring, tree preserved. Translocation to suitable trees required - within nat range
Needs more survey. Monitoring required with micro habitat management.

Notes
Habitat management needed - continued grazing needed plus monitoring Found new to Britain at just one site very recently. Known to be widespread in Europe but seems to be rare in several countries. Easily overlooked and might be found at other sites. More survey work required.
Described new to Britain recently. Considered VU globally. More survey work required. Found at two sites in Scotland recently. Irish sites need re-visiting. More survey work may find further stands of this liverwort. Moderate follow-up required if translocation occurs owing to nature of the habitat. Single site in Devon only, extinct in Scotland but within an historic range. Viabilty depends on continued grazing management to retain open sites.
Ash and elm tree hosts; near rivers. Monitoring required frequently at start. Tree disease issue plus impact of beavers
Wild to wild translocation best approach. Unknown reason for disppearance but may require low level site specific management Single tree. Insufficient donor populations in scotland so would ned to come from continent. Monitoring required. Extinct in Scotland therefore cultural interest. Slug control possily required.
Needs surveying to check status plus monitoring and check on habitat condition re disturbance levels Ash Dieback Disease and Dutch Elm Disease may result in urgent need for direct translocation. This has already occurred at its only
Some of these species are redlisted, and they are probably threated due to lack of dispersal and lack of old trees to infect. The heartrot fungi rot the dead wood in the centre of the trunk, potentially increasing tree's flexability in high winds. It is however negetive for timber production. Their transplantation is fairly straightford and have been achived by Wainhouse and Boddy 2022
There are only 3 sites in UK, thought CR(PE) until the RBGE lost and found project. It is a parsite on the willow glue Hymenochaete tabacina, with which it should be transplanted. Reasons for its decline are unclear

Notes