**Supplementary Material: Appendix 1**

Target species of Berlin’s Flora Protection Program with information on the Red List status in Berlin according to Seitz et al. (2018): 1 threatened with extinction; 2 highly endangered; 3 compromised; 0 extinct or disappeared since the last mapping; G danger of unknown extent; R extremely rare; V early warning list; D data insufficient; \* safe; and the total number of populations in our study as well as the life form: Hp Herbaceous perennial; Ha Herbaceous annual; Tr Tree; Sh Shrub; DS Dwarf Shrub; Ge Geophyte; Hy Hydrophyte; Ch Chamaephyte; Pp Pseudophanerophyte.

| Species | Red List Status | Number of Populations | Life Form |
| --- | --- | --- | --- |
| *Agrimonia procera* | 1 | 14 | Hp |
| *Aira caryophyllea subsp. caryophyllea* | 1 | 5 | Hp |
| *Ajuga reptans* | 1 | 5 | Hp |
| *Alchemilla monticola* | 1 | 2 | Hp |
| *Alchemilla plicata* | 0 | 3 | Hp |
| *Alchemilla subcrenata* | 1 | 1 | Hp |
| *Alisma lanceolatum* | 1 | 2 | Hy / Ge |
| *Allium angulosum* | 1 | 1 | Ge |
| *Alyssum alyssoides* | 1 | 5 | Hp |
| *Andromeda polifolia* | 1 | 8 | DS |
| *Anemone ranunculoides* | 2 | 8 | Ge |
| *Antennaria dioica* | 0 | 1 | Ch |
| *Anthericum ramosum* | 2 | 1 | Hp |
| *Anthyllis vulneraria s. l.* | 1 | 17 | Hp |
| *Arnoseris minima* | 1 | 8 | Hp |
| *Asperula tinctoria* | 1 | 4 | Hp |
| *Asplenium trichomanes* | 2 | 1 | Hp |
| *Astragalus arenarius* | 1 | 3 | Hp |
| *Astragalus danicus* | 1 | 5 | Hp |
| *Blysmus compressus* | 1 | 2 | Ge |
| *Botrychium lunaria* | 1 | 26 | Ge |
| *Botrychium matricariifolium* | 1 | 20 | Ge |
| *Botrychium multifidum* | 0 | 2 | Ge |
| *Cannabis sativa s. l.* | 1 | 1 | Ha |
| *Carex appropinquata* | 2 | 21 | Hp |
| *Carex cespitosa* | 1 | 9 | Hp |
| *Carex demissa* | 1 | 1 | Hp |
| *Carex diandra* | 1 | 3 | Hp |
| *Carex hartmanii* | 1 | 37 | Ge |
| *Carex lepidocarpa* | 1 | 5 | Hp |
| *Carex ligerica* | V | 14 | Ge |
| *Carex limosa* | 1 | 13 | Hp |
| *Carex otrubae* | 1 | 2 | Hp |
| *Carex pseudobrizoides* | 1 | 3 | Ge |
| *Carex supina* | 1 | 10 | Ge |
| *Carex viridula subsp. viridula* | 1 | 10 | Hp |
| *Carlina vulgaris agg.* | 1 | 18 | Hp |
| *Catabrosa aquatica* | 1 | 3 | Hp |
| *Centaurea diffusa* | 1 | 3 | Ha |
| *Centaurium erythraea* | 2 | 1 | Hp |
| *Centaurium pulchellum* | 1 | 9 | Ha |
| *Chenopodium bonus-henricus* | 0 | 1 | Hp |
| *Chenopodium murale* | 1 | 7 | Ha |
| *Chimaphila umbellata* | 0 | 2 | DS |
| *Chrysosplenium alternifolium* | 1 | 6 | Hp |
| *Cicuta virosa* | 2 | 15 | Hp |
| *Colchicum autumnale* | 1 | 3 | Ge |
| *Consolida regalis* | 1 | 15 | Hp |
| *Corydalis intermedia* | 1 | 3 | Ge |
| *Crataegus macrocarpa* | 1 | 6 | Sh / Tr |
| *Crataegus media* | 1 | 1 | Sh / Tr |
| *Crataegus rhipidophylla s. str.* | 1 | 1 | Tr / Sh |
| *Crataegus subsphaericea* | 1 | 10 | Sh / Tr |
| *Cuscuta epithymum* | 1 | 6 | Ha |
| *Cuscuta lupuliformis* | 1 | 1 | Ha |
| *Cystopteris fragilis s. str.* | 1 | 14 | Hp |
| *Dactylis polygama* | G | 19 | Hp |
| *Dactylorhiza incarnata* | 1 | 15 | Ge |
| *Dactylorhiza maculata agg.* | 1 | 10 | Ge |
| *Dactylorhiza majalis s. str.* | 2 | 8 | Ge |
| *Dactylorhiza x aschersoniana* | 1 | 6 | Ge |
| *Dianthus carthusianorum* | 1 | 63 | Hp |
| *Dianthus superbus* | 1 | 16 | Hp |
| *Drosera intermedia* | 1 | 2 | Hp |
| *Drosera rotundifolia* | 1 | 1 | Hp |
| *Dryopteris cristata* | 1 | 6 | Hp |
| *Elatine alsinastrum* | 1 | 2 | Ha |
| *Epilobium obscurum* | 1 | 1 | Hp |
| *Epipactis palustris* | 1 | 1 | Ge |
| *Equisetum sylvaticum* | 1 | 6 | Ge |
| *Equisetum variegatum* | 0 | 1 | DS |
| *Erigeron droebachiensis* | 0 | 1 | Hp |
| *Euphorbia palustris* | 1 | 5 | Hp |
| *Euphrasia nemorosa s. l.* | 0 | 1 | Ha |
| *Euphrasia stricta* | 1 | 16 | Ha |
| *Festuca polesica* | 1 | 1 | Hp |
| *Festuca psammophila* | 1 | 31 | Hp |
| *Filago minima* | 2 | 15 | Hp |
| *Filago vulgaris* | 1 | 4 | Hp |
| *Filipendula vulgaris* | 2 | 23 | Hp |
| *Fragaria viridis* | 1 | 11 | Hp |
| *Galeobdolon luteum* | G | 16 | Ch |
| *Galeopsis ladanum* | 0 | 1 | Ha |
| *Galium pumilum s. str.* | 0 | 1 | Hp |
| *Genista germanica* | 1 | 4 | DS |
| *Genista tinctoria* | 1 | 28 | DS |
| *Gentiana pneumonanthe* | 1 | 8 | Hp |
| *Geranium columbinum* | 1 | 1 | Hp |
| *Geranium sanguineum* | 1 | 3 | Hp |
| *Gypsophila muralis* | 0 | 2 | Ha |
| *Helianthemum nummularium subsp. obscurum* | 1 | 1 | DS |
| *Helictotrichon pratense* | 1 | 2 | Hp |
| *Hepatica nobilis* | 1 | 4 | Hp |
| *Hieracium bauhini subsp. heothinum* | 1 | 10 | Hp |
| *Hieracium caespitosum* | 1 | 12 | Hp |
| *Hieracium fallax subsp. durisetum* | 1 | 3 | Hp |
| *Hieracium maculatum subsp. fictum* | 1 | 3 | Hp |
| *Hieracium maculatum subsp. tinctum* | 1 | 6 | Hp |
| *Hieracium prussicum subsp. trichotum* | 0 | 1 | Hp |
| *Hierochloe hirta subsp. praetermissa* | 1 | 5 | Hp |
| *Hierochloe odorata subsp. odorata* | 1 | 3 | Hp |
| *Hippuris vulgaris* | 0 | 8 | Hp |
| *Hydrocharis morsus-ranae* | 2 | 15 | Hy |
| *Hypericum desetangsii nothosubsp. carinthiacum* | 1 | 2 | Hp |
| *Hypericum maculatum s. str.* | 1 | 5 | Hp |
| *Hypochaeris glabra* | 0 | 1 | Hp |
| *Hypopitys monotropa s. str.* | 1 | 4 | Hp |
| *Impatiens noli-tangere* | 1 | 1 | Ha |
| *Inula salicina* | 1 | 3 | Hp |
| *Iris sibirica* | 1 | 36 | Hp |
| *Isolepis setacea* | 1 | 4 | Hp |
| *Juncus alpinoarticulatus* | 1 | 2 | Hp |
| *Juncus capitatus* | 0 | 1 | Ha |
| *Juncus filiformis* | 1 | 5 | Ge |
| *Juncus subnodulosus* | 2 | 3 | Ge |
| *Juncus tenageia* | 1 | 2 | Ha |
| *Juniperus communis subsp. communis* | 1 | 32 | Tr / Sh |
| *Koeleria glauca* | 1 | 24 | Hp |
| *Lathraea squamaria* | 1 | 14 | Ge |
| *Leersia oryzoides* | 1 | 5 | Hp |
| *Lotus tenuis* | 1 | 5 | Hp |
| *Luzula pallescens* | 1 | 4 | Hp |
| *Lychnis viscaria* | 1 | 7 | Hp |
| *Lycopodium annotinum* | 1 | 2 | Ch |
| *Lythrum hyssopifolia* | 0 | 2 | Ha |
| *Medicago minima* | 2 | 9 | Hp |
| *Myosotis discolor* | 0 | 1 | Hp |
| *Myosotis sparsiflora* | 2 | 7 | Hp |
| *Myosurus minimus* | 1 | 13 | Ha |
| *Najas marina subsp. intermedia* | G | 3 | Hy |
| *Najas marina subsp. marina* | 1 | 10 | Ha |
| *Noccaea caerulescens* | 0 | 2 | Hp |
| *Oenothera parviflora s. str.* | 1 | 2 | Hp |
| *Orchis militaris* | 1 | 10 | Ge |
| *Osmunda regalis* | 1 | 28 | Ge |
| *Parnassia palustris* | 1 | 3 | Hp |
| *Platanthera bifolia* | 1 | 8 | Ge |
| *Populus nigra* | G | 103 | Tr |
| *Potamogeton acutifolius* | 1 | 7 | Ha |
| *Potamogeton friesii* | 1 | 2 | Hy |
| *Potamogeton gramineus* | 0 | 4 | Hy |
| *Potamogeton lucens* | 1 | 6 | Hy |
| *Potamogeton nodosus* | 1 | 3 | Hy |
| *Potamogeton obtusifolius* | 1 | 5 | Ha |
| *Potamogeton perfoliatus* | 1 | 2 | Hy |
| *Potamogeton pusillus* | G | 7 | Ha |
| *Potentilla alba* | 1 | 17 | Hp |
| *Potentilla heptaphylla* | 1 | 2 | Hp |
| *Primula veris* | 1 | 6 | Hp |
| *Pulicaria dysenterica* | 0 | 1 | Hp |
| *Pulsatilla pratensis subsp. nigricans* | 1 | 5 | Hp |
| *Pyrola chlorantha* | 1 | 2 | Hp |
| *Pyrola minor* | 1 | 1 | Hp |
| *Ranunculus aquatilis* | 1 | 17 | Ha |
| *Ranunculus circinatus* | 1 | 1 | Ha |
| *Ranunculus lingua* | 1 | 15 | Hp |
| *Ranunculus peltatus subsp. peltatus* | 1 | 1 | Ha |
| *Ranunculus sardous* | 1 | 22 | Hp |
| *Ranunculus trichophyllus s. l.* | 1 | 7 | Ha |
| *Rhinanthus minor* | 1 | 32 | Ha |
| *Rhododendron tomentosum* | 1 | 5 | DS |
| *Rhynchospora alba* | 1 | 7 | Hp |
| *Rosa caesia s. str.* | 1 | 3 | Sh |
| *Rosa dumalis* | 1 | 35 | Sh |
| *Rosa elliptica* | 1 | 4 | Sh |
| *Rosa marginata* | 0 | 1 | Sh |
| *Rosa pseudoscabriuscula* | 1 | 1 | Sh |
| *Rubus fasciculatiformis* | 1 | 1 | Pp |
| *Rumex aquaticus* | 0 | 2 | Hp |
| *Rumex sanguineus* | 1 | 20 | Hp |
| *Sagina apetala agg.* | D | 2 | Ha |
| *Sagina nodosa* | 1 | 8 | Hp |
| *Sanguisorba minor subsp. minor* | 1 | 14 | Hp |
| *Scabiosa canescens* | 1 | 4 | Hp |
| *Scilla amoena* | R | 4 | Ge |
| *Scolochloa festucacea* | 0 | 2 | Hp |
| *Scorzonera humilis* | 2 | 55 | Hp |
| *Scorzonera purpurea* | 1 | 1 | Hp |
| *Selinum dubium* | 1 | 15 | Hp |
| *Senecio paludosus* | 1 | 10 | Hp |
| *Serratula tinctoria subsp. tinctoria* | 1 | 23 | Hp |
| *Silene chlorantha* | 2 | 2 | Hp |
| *Silene conica* | 1 | 21 | Ha |
| *Silene noctiflora* | 1 | 2 | Hp |
| *Silene otites* | 1 | 24 | Hp |
| *Silene tatarica* | 3 | 23 | Hp |
| *Sparganium natans* | 1 | 3 | Hy |
| *Stipa capillata* | 1 | 1 | Hp |
| *Stipa pennata s. str.* | 1 | 2 | Hp |
| *Stratiotes aloides* | 2 | 10 | Hy |
| *Swertia perennis* | 0 | 1 | Hp |
| *Taraxacum nordstedtii* | 0 | 2 | Hp |
| *Tephroseris palustris* | 1 | 3 | Hp |
| *Teucrium scordium subsp. scordium* | 1 | 1 | Hp |
| *Thalictrum minus subsp. minus* | 1 | 13 | Hp |
| *Thelypteris limbosperma* | 1 | 2 | Ge |
| *Tragopogon orientalis* | 0 | 1 | Hp |
| *Trifolium alpestre* | 2 | 1 | Hp |
| *Trifolium montanum* | 0 | 2 | Hp |
| *Tulipa sylvestris* | \* | 6 | Ge |
| *Urtica kioviensis* | 1 | 11 | Hp |
| *Utricularia australis* | 1 | 6 | Hy |
| *Utricularia minor s. str.* | 1 | 1 | Hy |
| *Utricularia vulgaris* | 1 | 6 | Hy |
| *Verbena officinalis* | 1 | 16 | Hp |
| *Veronica polita* | 2 | 8 | Hp |
| *Veronica praecox* | 1 | 1 | Hp |
| *Viola hirta* | 1 | 3 | Hp |
| *Viola rupestris* | 1 | 15 | Hp |
| *Viola stagnina* | 0 | 2 | Hp |
| *Vulpia myuros* | 3 | 4 | Hp |
| *Wolffia arrhiza* | 2 | 1 | Hy |
| *Zannichellia palustris* | 1 | 3 | Hy |

**Appendix 2**

We performed a cross L function to check whether the found positive relationships between populations of endangered species and ecosystem types simply relies on spatial relationships between the patches of the respective ecosystem types – independently of patch occupancy by endangered species. This analysis reveals that patches of hybrid ecosystems are not spatially correlated (independence) to patches of remnant ecosystems nor to patches of novel ecosystems (see figure below).

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Cross L function showing the missing spatial correlation between hybrid ecosystem patches (n=15,681) and remnant ecosystem patches (n=3,426) (H-R line) and between hybrid ecosystems patches (n=15,681) and novel ecosystem patches (n=60,161) (H-N line). No spatial correlation was found in any case (95% confidence level), as the observed curves of the point processes do not cross outside of the boundaries of the global envelope of the null model (dashed line with grey envelope generated from 19 simulations).