**Supplementary material**

**Supplementary Table 1.** Species list of ferns and lycophytes from Celaque National Park. Columns summarize the percentage of range lost for each species based on IPCC predictions for the year 2050 and 2100 (RCP2.6 and 8.5 scenarios).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Species** | **2050** | | **2100** | |
|  | RCP2.6 | RCP8.5 | RCP2.6 | RCP8.5 |
| *Adiantum andicola* Liebm. | 0 | 0 | 10 | 31 |
| *Adiantum concinnum* Humb. & Bonpl. ex Willd. | 0 | 0 | 0 | 0 |
| *Adiantum feei* T. Moore ex Fée | 18 | 13 | 38 | 56 |
| *Alansmia cultrate* (Willd.) Moguel & M. Kessler | 0 | 0 | 0 | 0 |
| *Amauropelta pilosohispida* (Hook.) A.R. Sm. | 17 | 11 | 41 | 62 |
| *Amauropelta pilosula* (Klotzsch & H. Karst. ex Mett.) Á. Löve & D. Löve | 0 | 0 | 0 | 0 |
| *Amauropelta resinifera* (Desv.) Pic. Serm. | 19 | 15 | 34 | 49 |
| *Anemia karwinskyana* (C. Presl) Prantl | 19 | 15 | 34 | 48 |
| *Anemia phyllitidis* (L.) Sw. | 0 | 0 | 0 | 0 |
| *Arachniodes denticulate* (Sw.) Ching | 0 | 0 | 0 | 0 |
| *Ascogrammitis anfractuosa* (Kunze ex Klotzsch) Sundue | 0 | 0 | 0 | 0 |
| *Asplenium abscissum* Willd. | 100 | 100 | 100 | 100 |
| *Asplenium achilleifolium* (M. Martens & Galeotti) Liebm. | 100 | 100 | 100 | 100 |
| *Asplenium auriculatum* (Thunb.) Kuhn | 0 | 0 | 0 | 0 |
| *Asplenium auritum* Sw. | 19 | 15 | 34 | 48 |
| *Asplenium blepharophorum* Bertol. | 0 | 0 | 0 | 10 |
| *Asplenium fragrans* Sw. | 100 | 100 | 100 | 100 |
| *Asplenium harpeodes* Kunze | 0 | 0 | 0 | 0 |
| Asplenium miradorense Liebm. | 0 | 0 | 0 | 0 |
| *Asplenium monanthes* L. | 82 | 65 | 100 | 100 |
| *Asplenium praemorsum* Sw. | 0 | 0 | 0 | 0 |
| *Asplenium pumilum* Sw. | 16 | 12 | 32 | 47 |
| *Asplenium radicans* L. | 0 | 0 | 0 | 0 |
| *Asplenium serra* Langsd. & Fisch. | 0 | 0 | 0 | 0 |
| *Asplenium sessilifolium* Desv. | 0 | 0 | 100 | 100 |
| *Asplenium uniseriale* Raddi | 34 | 26 | 64 | 92 |
| *Asplenium* sp. 1 | 0 | 0 | 0 | 5 |
| *Austroblechnum lherminieri* (Bory) Gasper & V.A.O. Dittrich | 0 | 0 | 0 | 0 |
| *Austroblechnum stoloniferum* (Mett. ex E. Fourn.) Gasper & V.A.O. Dittrich | 0 | 0 | 0 | 0 |
| *Blechnum appendiculatum* Willd. | 13 | 9 | 26 | 38 |
| *Blechnum falciforme* (Liebm.) C. Chr. | 19 | 15 | 34 | 48 |
| *Blechnum glandulosum* Kaulf. ex Link | 82 | 64 | 100 | 100 |
| *Blechnum occidentale* L. | 0 | 0 | 0 | 0 |
| *Blechnum polypodioides* Raddi | 0 | 0 | 0 | 0 |
| *Blechnum* sp. 1 | 0 | 0 | 0 | 0 |
| *Blechnum* sp. 2 | 11 | 2 | 46 | 80 |
| *Botrypus virginianus* (L.) Michx. | 0 | 0 | 39 | 77 |
| *Campyloneurum amphostenon* (Kunze ex Klotzsch) Fée | 44 | 34 | 80 | 100 |
| *Campyloneurum angustifolium* (Sw.) Fée | 0 | 0 | 0 | 16 |
| *Campyloneurum tenuipes* Maxon | 0 | 0 | 0 | 0 |
| *Campyloneurum xalapense* Fée | 0 | 0 | 16 | 35 |
| *Ceradenia oidiophora* (Mickel & Beitel) A.R. Sm. | 0 | 0 | 0 | 36 |
| *Cibotium regale* Verschaff. & Lem. | 82 | 65 | 100 | 100 |
| *Cochlidium rostratum* (Hook.) Maxon ex C. Chr. | 13 | 9 | 26 | 38 |
| *Cochlidium serrulatum* (Sw.) L.E. Bishop | 0 | 0 | 0 | 0 |
| *Ctenitis equestris* (Kunze) Ching | 100 | 100 | 100 | 100 |
| *Ctenitis grisebachii* (Baker) Ching | 0 | 0 | 0 | 0 |
| *Ctenitis hemsleyana* (Baker) Copel. | 0 | 0 | 0 | 0 |
| *Ctenitis leonii* A. Rojas | 82 | 65 | 100 | 100 |
| *Ctenitis melanosticta* (Kunze) Copel. | 0 | 0 | 8 | 25 |
| *Ctenitis* sp. 1 | 0 | 0 | 14 | 31 |
| *Culcita coniifolia* (Hook.) Maxon | 34 | 27 | 62 | 88 |
| *Cyathea bicrenate* Liebm. | 16 | 12 | 30 | 43 |
| *Cyathea* sp. 1 | 0 | 0 | 0 | 0 |
| *Cyclosorus* sp. 1 | 19 | 15 | 34 | 49 |
| *Cystopteris fragilis* (L.) Bernh. | 11 | 7 | 24 | 37 |
| *Dennstaedtia globulifera* (Poir.) Hieron. | 0 | 0 | 0 | 0 |
| *Dicksonia navarrensis* Christ | 31 | 24 | 57 | 81 |
| *Didymoglossum reptans* (Sw.) C. Presl | 56 | 44 | 100 | 100 |
| *Diplazium cristatum* (Desr.) Alston | 0 | 0 | 0 | 0 |
| *Diplazium franconis* Liebm. | 0 | 0 | 18 | 36 |
| *Diplazium lindbergii* (Mett.) Christ | 14 | 11 | 29 | 43 |
| *Diplazium* sp. 1 | 0 | 0 | 0 | 0 |
| *Diplazium werckleanum* Christ | 0 | 0 | 0 | 0 |
| *Dryopteris nubigena* Maxon & C.V. Morton | 0 | 0 | 0 | 48 |
| *Dryopteris wallichiana* var*. wallichiana* (Spreng.) Hyl. | 0 | 0 | 0 | 0 |
| *Elaphoglossum guatemalense* (Klotzsch) T. Moore | 0 | 0 | 0 | 0 |
| *Elaphoglossum lanceum* Mickel | 0 | 0 | 0 | 0 |
| *Elaphoglossum latifolium* (Sw.) J. Sm. | 0 | 0 | 0 | 100 |
| *Elaphoglossum lonchophyllum* (Fée) T. Moore | 0 | 0 | 0 | 0 |
| *Elaphoglossum mexicanum* (E. Fourn.) A. Rojas | 0 | 0 | 0 | 8 |
| *Elaphoglossum muscosum* (Sw.) T. Moore | 0 | 0 | 0 | 0 |
| *Elaphoglossum paleaceum* (Hook. & Grev.) Sledge | 86 | 62 | 100 | 100 |
| *Elaphoglossum peltatum* (Sw.) Urb. | 0 | 0 | 0 | 0 |
| *Elaphoglossum sartorii* (Liebm.) Mickel | 0 | 0 | 100 | 100 |
| *Elaphoglossum setigerum* (Sodiro) Diels | 15 | 11 | 30 | 44 |
| *Elaphoglossum* sp. 1 | 0 | 0 | 0 | 16 |
| *Elaphoglossum* sp. 2 | 94 | 61 | 100 | 100 |
| *Elaphoglossum* sp. 3 | 0 | 0 | 0 | 0 |
| *Elaphoglossum* sp. 4 | 0 | 0 | 0 | 2 |
| *Elaphoglossum squamipes* (Hook.) T. Moore | 0 | 0 | 0 | 0 |
| *Elaphoglossum succubus* Mickel | 9 | 4 | 27 | 44 |
| *Equisetum myriochaetum* Schltdl. & Cham. | 0 | 0 | 22 | 46 |
| *Gaga angustifolia* (Kunth) Fay W. Li & Windham | 0 | 0 | 0 | 0 |
| *Goniopteris nicaraguensis* (E. Fourn.) Salino & T.E. Almeida | 32 | 25 | 59 | 84 |
| *Histiopteris incisa* (Thunb.) J. Sm. | 19 | 14 | 39 | 58 |
| *Hymenophyllum crassipetiolatum* Stolze | 0 | 0 | 0 | 9 |
| *Hymenophyllum crispum* Kunth | 0 | 0 | 0 | 0 |
| *Hymenophyllum fucoides* (Sw.) Sw. | 79 | 59 | 100 | 100 |
| *Hymenophyllum myriocarpum* Hook. | 0 | 0 | 0 | 0 |
| *Hymenophyllum polyanthos* (Sw.) Sw. | 87 | 69 | 100 | 100 |
| *Hymenophyllum pulchellum* Schltdl. & Cham. | 100 | 100 | 100 | 100 |
| *Hymenophyllum tegularis* (Desv.) Proctor & Lourteig | 38 | 18 | 100 | 100 |
| *Hymenophyllum trapezoidale* Liebm. | 0 | 0 | 0 | 0 |
| *Jamesonia flexuosa* (Kunth) Christenh. | 0 | 0 | 0 | 19 |
| *Lomaridium ensiforme* (Liebm.) Gasper & V.A.O. Dittrich | 0 | 0 | 4 | 26 |
| *Lophosoria quadripinnata* (J.F. Gmel.) C. Chr. | 0 | 0 | 0 | 0 |
| *Macrothelypteris torresiana* (Gaudich.) Ching | 0 | 0 | 0 | 17 |
| *Marattia interposita* Christ | 0 | 0 | 0 | 0 |
| *Megalastrum subincisum* (Willd.) A.R. Sm. & R.C. Moran | 0 | 0 | 0 | 0 |
| *Melpomene moniliformis* (Lag. ex Sw.) A.R. Sm. & R.C. Moran | 66 | 32 | 100 | 100 |
| *Melpomene xiphopteroides* (Liebm.) A.R. Sm. & R.C. Moran | 0 | 0 | 0 | 0 |
| *Moranopteris basiattenuata* (Jenman) R.Y.Hirai & J.Prado | 100 | 100 | 100 | 100 |
| *Mycopteris semihirsuta* (Klotzsch) Sundue | 0 | 0 | 0 | 26 |
| *Nephrolepis cordifolia* (L.) C. Presl | 17 | 12 | 32 | 47 |
| *Niphidium crassifolium* (L.) Lellinger | 16 | 12 | 30 | 43 |
| *Osmunda regalis* L. | 95 | 69 | 100 | 100 |
| *Pecluma alfredii* (Rosenst.) M.G. Price | 0 | 0 | 0 | 0 |
| *Pecluma dulcis* (Poir.) F.C. Assis & Salino | 82 | 65 | 100 | 100 |
| *Pecluma hartwegiana* (Hook.) F.C. Assis & Salino | 99 | 72 | 100 | 100 |
| *Phanerophlebia juglandifolia* (Humb. & Bonpl. ex Willd.) J. Sm. | 0 | 0 | 38 | 77 |
| *Phlebodium areolatum* (Humb. & Bonpl. ex Willd.) J. Sm. | 0 | 0 | 0 | 0 |
| *Phlegmariurus myrsinites* (Lam.) B. Øllg. | 0 | 0 | 0 | 0 |
| *Phlegmariurus pringlei* (Underw. & F.E. Lloyd) B. Øllg. | 0 | 0 | 0 | 13 |
| *Phlegmariurus taxifolius* (Sw.) Á. Löve & D. Löve | 19 | 12 | 43 | 66 |
| *Pityrogramma tartarea* (Cav.) Maxon | 12 | 5 | 37 | 60 |
| *Pleopeltis alansmithii* (R.C. Moran) A.R. Sm. & Tejero | 79 | 58 | 100 | 100 |
| *Pleopeltis angusta* Humb. & Bonpl. ex Willd. | 0 | 0 | 0 | 3 |
| *Pleopeltis astrolepis* (Liebm.) E. Fourn. | 0 | 0 | 0 | 0 |
| *Pleopeltis lindeniana* (Kunze) A.R. Sm. & Tejero | 53 | 39 | 100 | 100 |
| *Pleopeltis macrocarpa* (Bory ex Willd.) Kaulf. | 0 | 0 | 0 | 0 |
| *Pleopeltis muenchii* (Christ) A.R. Sm. | 33 | 26 | 61 | 87 |
| *Pleopeltis plebeian* (Schltdl. & Cham.) A.R. Sm. & Tejero | 0 | 0 | 0 | 0 |
| *Pleopeltis* sp. 1 | 0 | 0 | 0 | 0 |
| *Polypodium fissidens* Maxon | 0 | 0 | 0 | 26 |
| *Polypodium fraternum* Schltdl. & Cham. | 0 | 0 | 0 | 5 |
| *Polypodium plesiosorum* Kunze | 0 | 0 | 0 | 0 |
| *Polypodium pleurosorum* Kunze ex Mett. | 11 | 1 | 48 | 83 |
| *Polypodium polypodioides* var. *aciculare* Weath. | 0 | 0 | 0 | 0 |
| *Polypodium rosei* Maxon | 23 | 18 | 42 | 60 |
| *Polypodium sanctae-rosae* (Maxon) C. Chr. | 0 | 0 | 0 | 0 |
| *Polypodium* sp. 1 | 0 | 0 | 0 | 0 |
| *Polypodium* sp. 2 | 17 | 13 | 31 | 44 |
| *Polypodium subpetiolatum* Hook. | 0 | 0 | 0 | 2 |
| *Polystichum hartwegii* (Klotzsch) Hieron. | 100 | 100 | 100 | 100 |
| *Polystichum muricatum* (L.) Fée | 0 | 0 | 17 | 33 |
| *Polytaenium lineatum* (Sw.) J. Sm. | 0 | 0 | 0 | 0 |
| *Pteridium arachnoideum* (Kaulf.) Maxon | 0 | 0 | 0 | 0 |
| *Pteridium caudatum* (L.) Maxon | 16 | 12 | 28 | 40 |
| *Pteridium feei* (W. Schaffn. ex Fée) Faull | 88 | 70 | 100 | 100 |
| *Pteris orizabae* M. Martens & Galeotti | 13 | 10 | 27 | 39 |
| *Pteris pungens* Willd. | 0 | 0 | 0 | 0 |
| *Pteris vittate* L. | 20 | 15 | 41 | 61 |
| *Sceptridium decompositum* (M. Martens & Galeotti) Lyon | 17 | 8 | 50 | 81 |
| *Scoliosorus ensiformis* (Hook.) T. Moore | 0 | 0 | 0 | 5 |
| *Selaginella cladorrhizans* A. Braun | 0 | 0 | 0 | 0 |
| *Selaginella guatemalensis* Baker | 0 | 0 | 0 | 0 |
| *Selaginella pallescens* (C. Presl) Spring | 0 | 0 | 0 | 0 |
| *Selaginella pulcherrima* Liebm. | 0 | 0 | 0 | 0 |
| *Selaginella silvestris* Aspl. | 39 | 30 | 72 | 100 |
| *Serpocaulon dissimile* (L.) A.R. Sm. | 16 | 2 | 68 | 100 |
| *Serpocaulon triseriale* (Sw.) A.R. Sm. | 0 | 0 | 0 | 0 |
| *Sticherus* sp. 1 | 0 | 0 | 19 | 61 |
| *Terpsichore asplenifolia* (L.) A.R. Sm. | 0 | 0 | 0 | 31 |
| *Thelypteris* sp. | 0 | 0 | 0 | 0 |
| unknown sp. 1 | 0 | 0 | 0 | 0 |
| *Vandenboschia radicans* (Sw.) Copel. | 0 | 0 | 0 | 0 |
| *Vittaria graminifolia* Kaulf. | 21 | 17 | 39 | 55 |
| *Woodwardia spinulosa* M. Martens & Galeotti | 0 | 0 | 13 | 42 |