

Appendix S1: Gymnosperms and their relation to water – detailed table including all 986 studied taxa.

| Taxon | Author(s) | Family | Category | References |
|---------------------------|---|-----------------|----------|------------|
| Agathis atropurpurea | B. Hyland | Aracauriaceae | 4 | 2, 6 |
| Agathis australis | (D. Don) Lindl. | Aracauriaceae | 4 | 2, 6 |
| Agathis borneensis | Warb. | Aracauriaceae | 3 | 2, 6 |
| Agathis dammara | (Lamb.) Rich. & A. Rich. | Aracauriaceae | 3 | 2, 6 |
| Agathis flavescens | Ridl. | Aracauriaceae | 4 | 2, 6 |
| Agathis kinabaluensis | de Laub. | Aracauriaceae | 4 | 6 |
| Agathis labillardieri | Warb. | Aracauriaceae | 4 | 2, 6 |
| Agathis lanceolata | (Sébert & Pancher) Warb. | Aracauriaceae | 4 | 2, 6 |
| Agathis lenticula | de Laub. | Aracauriaceae | 4 | 6 |
| Agathis macrophylla | (Lindl.) Mast. | Aracauriaceae | 4 | 2, 6 |
| Agathis microstachya | J. F. Bailey & C. T. White | Aracauriaceae | 4 | 2, 6 |
| Agathis montana | de Laub. | Aracauriaceae | 4 | 2, 6 |
| Agathis moorei | (Lindl.) Mast. | Aracauriaceae | 4 | 2, 6 |
| Agathis orbicula | de Laub. | Aracauriaceae | 4 | 2, 6 |
| Agathis ovata | (C. Moore ex Vieill.) Warb. | Aracauriaceae | 4 | 2, 6 |
| Agathis robusta | (C. Moore ex F. J. Muell.) F. M. Bailey | Aracauriaceae | 4 | 2, 6 |
| Agathis silbae | de Laub. | Aracauriaceae | 4 | 6 |
| Araucaria angustifolia | (Bertol.) Kuntze | Aracauriaceae | 4 | 2, 6 |
| Araucaria araucana | (Molina) K. Koch | Aracauriaceae | 4 | 2, 6 |
| Araucaria bernieri | J. T. Buchholz | Aracauriaceae | 3 | 2, 6 |
| Araucaria bidwillii | Hook. | Aracauriaceae | 4 | 2, 6 |
| Araucaria biramulata | J. T. Buchholz | Aracauriaceae | 4 | 2, 6 |
| Araucaria columnaris | (J. R. Forst.) Hook. | Aracauriaceae | 4 | 2, 6 |
| Araucaria cunninghamii | Aiton ex A. Cunn | Aracauriaceae | 4 | 2, 6 |
| Araucaria heterophylla | (Salisb.) Franco | Aracauriaceae | 4 | 2, 6 |
| Araucaria humboldtensis | J. T. Buchholz | Aracauriaceae | 4 | 2, 6 |
| Araucaria hunsteinii | K. Schum. | Aracauriaceae | 4 | 2, 6 |
| Araucaria laubenfelsii | Corbasson | Aracauriaceae | 4 | 2, 6 |
| Araucaria luxurians | (Brongn. & Gris) de Laub. | Aracauriaceae | 4 | 2, 6 |
| Araucaria montana | Brongn. & Gris | Aracauriaceae | 4 | 2, 6 |
| Araucaria muelleri | (Carrière) Brongn. & Gris | Aracauriaceae | 4 | 2, 6 |
| Araucaria nemorosa | de Laub. | Aracauriaceae | 4 | 2, 6 |
| Araucaria rulei | F. Muell. | Aracauriaceae | 4 | 2, 6 |
| Araucaria schmidii | de Laub. | Aracauriaceae | 4 | 2, 6 |
| Araucaria scopulorum | de Laub. | Aracauriaceae | 4 | 2, 6 |
| Araucaria subulata | Vieill. | Aracauriaceae | 4 | 2, 6 |
| Wollemia nobilis | W. G. Jones, K. Hill & J. M. Allen | Aracauriaceae | 4 | 2, 6 |
| Cephalotaxus fortunei | Hook. | Cephalotaxaceae | 3 | 2, 6 |
| Cephalotaxus hainanensis | H. L. Li | Cephalotaxaceae | 4 | 2, 6 |
| Cephalotaxus harringtonii | (Knight ex J. Forbes) K. Koch | Cephalotaxaceae | 3 | 2, 6 |
| Cephalotaxus lanceolata | K. M. Feng | Cephalotaxaceae | 4 | 2, 6 |
| Cephalotaxus latifolia | L. K. Fu & R. R. Mill. | Cephalotaxaceae | 4 | 6 |
| Cephalotaxus mannii | Hook. F. | Cephalotaxaceae | 4 | 2, 6 |
| Cephalotaxus oliveri | Mast. | Cephalotaxaceae | 3 | 2, 6 |
| Cephalotaxus sinensis | (Rehd. & E. H. Wilson) H. L. Li | Cephalotaxaceae | 3 | 2, 6 |
| Actinostrobus acuminatus | Parl. | Cupressaceae | 4 | 1, 5, 6 |
| Actinostrobus arenarius | C.A. Gardner | Cupressaceae | 4 | 1, 6 |
| Actinostrobus pyramidalis | Miq. | Cupressaceae | 4 | 1, 6 |
| Athrotaxis cupressoides | D. Don | Cupressaceae | 3 | 5, 6 |
| Athrotaxis x laxifolia | Hook. | Cupressaceae | 3 | 1, 6 |
| Athrotaxis selaginoides | D. Don | Cupressaceae | 3 | 5, 6 |
| Austrocedrus chilensis | (D. Don) Pic. Serm. & Bizzarri | Cupressaceae | 4 | 1, 5, 6 |
| Callitris baileyi | C. T. White | Cupressaceae | 4 | 1, 6 |
| Callitris canescens | (Parl.) S.T. Blake | Cupressaceae | 4 | 1, 6 |
| Callitris columellaris | F. Muell. | Cupressaceae | 4 | 1, 5 |
| Callitris drummondii | F. Muell. | Cupressaceae | 4 | 1, 6 |
| Callitris endlicheri | (Parl.) Bailey | Cupressaceae | 4 | 1, 6 |
| Callitris macleayana | (F. Muell.) F. Muell | Cupressaceae | 4 | 1, 5 |
| Callitris monticola | J. Garden | Cupressaceae | 4 | 1, 6 |
| Callitris muelleri | (Parl.) Benth. & Hook | Cupressaceae | 4 | 1, 6 |
| Callitris neocaledonia | Dummer | Cupressaceae | 4 | 1, 6 |
| Callitris oblonga | Tich. & A. Rich. | Cupressaceae | 3 | 1, 5, 6 |
| Callitris preissii | Miq. | Cupressaceae | 3 | 1, 6 |
| Callitris rhomboidea | R. Br ex Rich. & A. Rich. | Cupressaceae | 3 | 1, 5, 6 |
| Callitris roei | (Endl.) F. Muell. | Cupressaceae | 4 | 1, 6 |
| Callitris sulcata | (Parl.) Schltr. | Cupressaceae | 3 | 1, 6 |
| Callitris verrucosa | (A. Cunn. ex Endl.) F. Muell. | Cupressaceae | 4 | 1, 6 |
| Calocedrus decurrens | (Torr.) Florin | Cupressaceae | 4 | 1, 6 |
| Calocedrus formosana | (Florin) Florin | Cupressaceae | 4 | 1, 6 |
| Calocedrus macrolepis | Kurz | Cupressaceae | 4 | 1, 6 |
| Calocedrus rupestris | Aver. | Cupressaceae | 4 | 6 |
| Chamaecyparis formosensis | Matsum. | Cupressaceae | 4 | 1, 6 |
| Chamaecyparis lawsoniana | (A. Murray bi8s) Parl. | Cupressaceae | 3 | 1, 6 |
| Chamaecyparis obtusa | (Siebold & Zucc.) Endl. | Cupressaceae | 4 | 1, 6 |
| Chamaecyparis pisifera | (Siebold & Zucc.) Endl. | Cupressaceae | 3 | 1, 6 |
| Chamaecyparis thyooides | (L.) Britto, Sterns & Poggenb. | Cupressaceae | 3 | 1, 6 |
| Cryptomenia japonica | (Thunb. Ex L.f.) D. Don | Cupressaceae | 4 | 1, 6 |
| Cunninghamia konishii | Hayata | Cupressaceae | 4 | 1, 2, 3 |
| Cunninghamia lanceolata | (A. Lambert) W.L.Hooker | Cupressaceae | 4 | 1, 2, 3 |
| Cupressus arizonica | Greene | Cupressaceae | 4 | 1, 6 |
| Cupressus bakeri | Greene | Cupressaceae | 4 | 1, 6 |
| Cupressus cashmeriana | Royle ex Carrière | Cupressaceae | 4 | 1, 6 |
| Cupressus chengiana | S. Y. Hu | Cupressaceae | 4 | 1, 6 |
| Cupressus ducolouxiana | Hickel | Cupressaceae | 4 | 1, 6 |

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| | | | | |
|-------------------------------------|-----------------------------------|--------------|---|----------|
| Cupressus dupreziana | A. Camus | Cupressaceae | 4 | 1, 6 |
| Cupressus funebris | Endl. | Cupressaceae | 4 | 1, 6 |
| Cupressus goveniana | Gordon | Cupressaceae | 4 | 1, 6 |
| Cupressus guadalupensis | S. Watson | Cupressaceae | 4 | 1, 6 |
| Cupressus lusitanica | Mill. | Cupressaceae | 4 | 1, 6 |
| Cupressus macnabiana | A. Murray bis | Cupressaceae | 4 | 1, 6 |
| Cupressus macrocarpa | Hartw. Ex Gordon | Cupressaceae | 4 | 1, 6 |
| Cupressus sargentii | Jeps. | Cupressaceae | 4 | 1, 6 |
| Cupressus sempervirens | L. | Cupressaceae | 4 | 1, 6 |
| Cupressus torulosa | D. Don | Cupressaceae | 4 | 1, 6 |
| <i>Diselma archeri</i> | Hook. f. | Cupressaceae | 3 | 1, 6 |
| <i>Fitzroya cupressoides</i> | (Molina) I. M. Johnst. | Cupressaceae | 3 | 1, 6 |
| <i>Fokienia hodginsii</i> | (Dunn) A. Henry & H. H. Thomas | Cupressaceae | 4 | 1, 6 |
| <i>Glyptosrobis pensilis</i> | (Stauton ex D. Don) K. Koch | Cupressaceae | 2 | 1, 6, 17 |
| <i>Juniperus angosturana</i> | R.P. Adams | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus arizonica</i> | (R. P. Adams) R. P. Adams | Cupressaceae | 4 | 6 |
| <i>Juniperus ashei</i> | J. Buchholz | Cupressaceae | 3 | 1, 6 |
| <i>Juniperus barbadensis</i> | L. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus bermudiana</i> | L. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus blancoi</i> | Martinez | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus brevifolia</i> | (Seub.) Antoine | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus californica</i> | Carrière | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus cedrus</i> | Webb & Berthel. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus chinensis</i> | L. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus coahuilensis</i> | (Martiniz) Gausson ex R. P. Adams | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus comitana</i> | Martinez | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus communis</i> | L. | Cupressaceae | 3 | 1, 6 |
| <i>Juniperus convallium</i> | Rehder & E. H. Wilson | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus deppeana</i> | Steud. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus drupacea</i> | Labill. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus durangensis</i> | Martinez | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus excelsa</i> | M.-Bied | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus flaccida</i> | Schtdl. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus foetidissima</i> | Wild. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus formosana</i> | Hayata | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus gamboana</i> | Martinez | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus gracilior</i> | Pilg. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus horizontalis</i> | Moench | Cupressaceae | 3 | 1, 6 |
| <i>Juniperus indica</i> | Bertol. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus jaliscana</i> | Martinez | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus komarovii</i> | Florin | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus monosperma</i> | (Engelm.) Sarg. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus monticola</i> | Martinez | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus occidentalis</i> | Hook. | Cupressaceae | 3 | 1, 6 |
| <i>Juniperus osteosperma</i> | (Torr.) Little | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus oxycedrus</i> | L. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus phoenicea</i> | L. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus pinchotii</i> | Sudw. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus pingii</i> | W.C. Cheng | Cupressaceae | 3 | 1, 6 |
| <i>Juniperus procera</i> | Hochst. Ex Endl. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus procumbens</i> | (Siebold & Endl.) Miq. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus przewalskii</i> | Kom. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus pseudosabina</i> | Fisch. & C.A. Mey. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus recurva</i> | Buch.-Ham ex D. Don | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus rigida</i> | Siebold & Zucc. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus sabina</i> | L. | Cupressaceae | 3 | 1, 6 |
| <i>Juniperus saltillensis</i> | M. T. Hall | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus saltuaria</i> | Rehder & E. H. Wilson | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus saxicola</i> | Britton & P. Wilson | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus scopulorum</i> | Sarg. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus semiglobosa</i> | Regel | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus squamata</i> | Buch.-Ham ex D. Don | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus standleyi</i> | Steyerm. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus taxifolia</i> | Hook. & Arn. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus thurifera</i> | L. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus tibetica</i> | Kom. | Cupressaceae | 4 | 1, 6 |
| <i>Juniperus virginiana</i> | L. | Cupressaceae | 3 | 1, 6 |
| <i>Libocedrus austrocaledonica</i> | Brongn. | Cupressaceae | 4 | 1, 6 |
| <i>Libocedrus bidwillii</i> | Hook. f. | Cupressaceae | 3 | 1, 6 |
| <i>Libocedrus chevalieri</i> | J. Buchholz | Cupressaceae | 4 | 1, 6 |
| <i>Libocedrus plumosa</i> | (D. Don) Sarg. | Cupressaceae | 4 | 1, 6 |
| <i>Libocedrus yateensis</i> | Guillaumin | Cupressaceae | 3 | 1, 6 |
| <i>Metasequoia glyptostroboides</i> | Hu & W.C. Cheng | Cupressaceae | 3 | 1, 6 |
| <i>Microbiota decussata</i> | Kom. | Cupressaceae | 4 | 1, 6 |
| <i>Neocallitropsis pancheri</i> | (Carrière) de laub. | Cupressaceae | 3 | 1, 6 |
| <i>Papuacedrus papuana</i> | (F. Muell.) H. L. Li | Cupressaceae | 3 | 1, 6 |
| <i>Pilgerodendron uviferum</i> | (D. Don) Florin | Cupressaceae | 3 | 1, 6 |
| <i>Platycladus orientalis</i> | (L.) Franco | Cupressaceae | 4 | 1, 6 |
| <i>Sequoia sempervirens</i> | (D. Don) Endl. | Cupressaceae | 4 | 1, 6 |
| <i>Sequoiadendron giganteum</i> | (Lindl.) J. Buchholz | Cupressaceae | 4 | 1, 6 |
| <i>Taiwania cryptomerioides</i> | Hayata, J. | Cupressaceae | 4 | 1, 6 |
| <i>Taxodium distichum</i> | (L.) Rich. | Cupressaceae | 2 | 1, 6 |
| <i>Taxodium mucronatum</i> | Ten. | Cupressaceae | 2 | 1, 6 |
| <i>Tetraclinis articulata</i> | (Vahl) Mast. | Cupressaceae | 4 | 1, 6 |
| <i>Thuja koraiensis</i> | Nakai | Cupressaceae | 4 | 1, 6 |

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|-------------------------------------|---|--------------|---|-------|
| <i>Thuja occidentalis</i> | L. | Cupressaceae | 3 | 1, 6 |
| <i>Thuja plicata</i> | Donn ex D. Donn | Cupressaceae | 4 | 1, 6 |
| <i>Thuja standishii</i> | (Gordon) Carrière | Cupressaceae | 4 | 1, 6 |
| <i>Thuja sutchuenensis</i> | Franch. | Cupressaceae | 4 | 1, 6 |
| <i>Thujopsis dolabrata</i> | (Thunb. Ex L.f.) Siebold & Zucc. | Cupressaceae | 4 | 1, 6 |
| <i>Widdringtonia cedarbergensis</i> | J. A. Marsh | Cupressaceae | 4 | 1, 6 |
| <i>Widdringtonia nodiflora</i> | (L.) Powrie | Cupressaceae | 4 | 1, 6 |
| <i>Widdringtonia schwarzii</i> | (Marloth) Mast. | Cupressaceae | 4 | 1, 6 |
| <i>Widdringtonia whytei</i> | Rendle | Cupressaceae | 4 | 1, 6 |
| <i>Xanthocyparis nootkatensis</i> | (D. Don) Farjon & Harder | Cupressaceae | 3 | 1, 6 |
| <i>Xanthocyparis vietnamensis</i> | Fajon & Hiep | Cupressaceae | 4 | 1, 6 |
| <i>Cycas aculeata</i> | K. D. Hill & H. T. Nguyen | Cycadaceae | 4 | 10 |
| <i>Cycas angulata</i> | R. Brown | Cycadaceae | 4 | 9, 10 |
| <i>Cycas apoa</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas arenicola</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas armstrongii</i> | Miquel | Cycadaceae | 4 | 9, 10 |
| <i>Cycas arnhemica</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas badensis</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas balansae</i> | Warburg | Cycadaceae | 4 | 9, 10 |
| <i>Cycas basaltica</i> | Gardner | Cycadaceae | 4 | 9, 10 |
| <i>Cycas beddomei</i> | W. Dyer | Cycadaceae | 4 | 9, 10 |
| <i>Cycas bougainvilleana</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas brachycantha</i> | K. D. Hill, T. H. Nguyen & K. L. Phan | Cycadaceae | 4 | 9, 10 |
| <i>Cycas brunnea</i> | K. Hill | Cycadaceae | 3 | 9, 10 |
| <i>Cycas cairnsiana</i> | Mueller | Cycadaceae | 4 | 9, 10 |
| <i>Cycas calcicola</i> | Maconochie | Cycadaceae | 3 | 9, 10 |
| <i>Cycas campestris</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas candida</i> | K. Hill | Cycadaceae | 4 | 10 |
| <i>Cycas canalis</i> | K. Hill | Cycadaceae | 3 | 9, 10 |
| <i>Cycas chamaoensis</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas chamberlainii</i> | W. Brown & Kienholz | Cycadaceae | 4 | 9, 10 |
| <i>Cycas changjiangensis</i> | N. Liu | Cycadaceae | 4 | 9, 10 |
| <i>Cycas chevalieri</i> | Leandri | Cycadaceae | 4 | 9, 10 |
| <i>Cycas circinalis</i> | Linnaeus | Cycadaceae | 4 | 9, 10 |
| <i>Cycas clivicola</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas collina</i> | K. D. Hill, T. H. Nguyen & K. L. Phan | Cycadaceae | 4 | 9, 10 |
| <i>Cycas condaoensis</i> | K.D. Hill & S.L. Yang | Cycadaceae | 4 | 9, 10 |
| <i>Cycas conferta</i> | Chirgwin | Cycadaceae | 3 | 9, 10 |
| <i>Cycas coultisiana</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas cupida</i> | P. I. Forster | Cycadaceae | 3 | 10 |
| <i>Cycas curranii</i> | (Schuster) K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas debaoensis</i> | Y. C. Zhong & C.-J. Chen | Cycadaceae | 4 | 9, 10 |
| <i>Cycas desolata</i> | P. I. Forster | Cycadaceae | 4 | 9, 10 |
| <i>Cycas diannanensis</i> | Z. T. Guan & G. D. Tao | Cycadaceae | 4 | 9, 10 |
| <i>Cycas dolichophylla</i> | K. D. Hill, T. H. Nguyen & K. L. Phan | Cycadaceae | 4 | 9, 10 |
| <i>Cycas edentata</i> | De Laubenfels | Cycadaceae | 4 | 9, 10 |
| <i>Cycas elephantipes</i> | A. Lindstr. & K. D. Hill | Cycadaceae | 4 | 10 |
| <i>Cycas elongata</i> | (Leandri) D.-Y. Wang | Cycadaceae | 4 | 9, 10 |
| <i>Cycas falcata</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas ferruginea</i> | F. N. Wei | Cycadaceae | 4 | 9, 10 |
| <i>Cycas fugax</i> | K. D. Hill, T. H. Nguyen & K. L. Phan | Cycadaceae | 4 | 9, 10 |
| <i>Cycas furturacea</i> | Fitzgerald | Cycadaceae | 4 | 9, 10 |
| <i>Cycas guizhouensis</i> | K. M. Lan & R. F. Zhou | Cycadaceae | 4 | 9, 10 |
| <i>Cycas hainanensis</i> | C.-J. Chen | Cycadaceae | 4 | 9, 10 |
| <i>Cycas hoabinhensis</i> | K. L. Phan & T. H. Nguyen | Cycadaceae | 4 | 9, 10 |
| <i>Cycas hongheensis</i> | S. Y. Yang & S.-L. Yang | Cycadaceae | 4 | 9, 10 |
| <i>Cycas inermis</i> | Loureiro | Cycadaceae | 4 | 9, 10 |
| <i>Cycas javana</i> | (Miquel) de Laubenfels | Cycadaceae | 4 | 9, 10 |
| <i>Cycas lane-poolei</i> | Gardner | Cycadaceae | 4 | 9, 10 |
| <i>Cycas lindstromii</i> | S.-L. Yang, K. Hill & N. T. Hiep | Cycadaceae | 4 | 9, 10 |
| <i>Cycas litoralis</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas maconochiei</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas macrocarpa</i> | Griffith | Cycadaceae | 4 | 9, 10 |
| <i>Cycas media</i> | R. Brown | Cycadaceae | 4 | 9, 10 |
| <i>Cycas megacarpa</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas micholitzii</i> | W. Dyer | Cycadaceae | 4 | 9, 10 |
| <i>Cycas micronesica</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas miquelii</i> | Warburg | Cycadaceae | 4 | 9, 10 |
| <i>Cycas multifrondis</i> | D.-Y. Wang | Cycadaceae | 4 | 9, 10 |
| <i>Cycas multipinnata</i> | C.-J. Chen & S. Y. Yang | Cycadaceae | 4 | 9, 10 |
| <i>Cycas nathorstii</i> | Schuster | Cycadaceae | 4 | 9, 10 |
| <i>Cycas nongnoochiae</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas ophiolitica</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas orientis</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas pachypoda</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas panzhihuaensis</i> | L. Zhou & S. Y. Yang | Cycadaceae | 4 | 9, 10 |
| <i>Cycas papuana</i> | Mueller | Cycadaceae | 4 | 9, 10 |
| <i>Cycas parvulus</i> | S.-L. Yang | Cycadaceae | 4 | 9, 10 |
| <i>Cycas pectinata</i> | Buchanan-Hamilton | Cycadaceae | 4 | 9, 10 |
| <i>Cycas petraea</i> | A. Lindstr. & K. D. Hill | Cycadaceae | 4 | 10 |
| <i>Cycas platyphylla</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas pranburiensis</i> | S.-L. Yang, W. Tang, K. Hill & Vatcharakorn | Cycadaceae | 4 | 9, 10 |
| <i>Cycas pruinosa</i> | Maconochie | Cycadaceae | 4 | 9, 10 |
| <i>Cycas revoluta</i> | Thunberg | Cycadaceae | 4 | 9, 10 |
| <i>Cycas riuminiana</i> | Porte ex Regel | Cycadaceae | 4 | 9, 10 |

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|--------------------------------|--|--------------------|----------|--------------|
| <i>Cycas rumphii</i> | Miquel | Cycadaceae | 4 | 9, 10 |
| <i>Cycas schumanniana</i> | Lauterbach | Cycadaceae | 4 | 9, 10 |
| <i>Cycas scratchleyana</i> | Mueller | Cycadaceae | 4 | 9, 10 |
| <i>Cycas seemannii</i> | Braun | Cycadaceae | 4 | 9, 10 |
| <i>Cycas segmentifida</i> | D.-Y. Wang & C. Y. Deng | Cycadaceae | 4 | 9, 10 |
| <i>Cycas semota</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas siamensis</i> | Miquel | Cycadaceae | 4 | 9, 10 |
| <i>Cycas silvestris</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas simplicipinna</i> | (Smitinand) K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas sphaerica</i> | Roxburg | Cycadaceae | 4 | 9, 10 |
| <i>Cycas taitungensis</i> | C. F. Chen, K. Hill, C. H. Tsou & C.-J. Chen | Cycadaceae | 4 | 9, 10 |
| <i>Cycas taiwaniana</i> | Carruthers | Cycadaceae | 4 | 9, 10 |
| <i>Cycas tanqingii</i> | D. Y. Yang | Cycadaceae | 4 | 9, 10 |
| <i>Cycas tansachana</i> | K. Hill & S.-L. Yang | Cycadaceae | 4 | 9, 10 |
| <i>Cycas thouarsii</i> | R. Brown ex Gaudichaud | Cycadaceae | 4 | 9, 10 |
| <i>Cycas tropophylla</i> | K. Hill & S. L. Yang | Cycadaceae | 4 | 9, 10 |
| <i>Cycas tuckeri</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas wadei</i> | Merrill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas xipholepis</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas yorkiana</i> | K. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Cycas yunnanensis</i> | (Schuster) K. Hill & Lindstrom | Cycadaceae | 4 | 9 |
| <i>Cycas zeylanica</i> | (J. Schust.) A. Lindstr. & K. D. Hill | Cycadaceae | 4 | 9, 10 |
| <i>Ephedra elata</i> | Decne | Ephedraceae | 4 | 3 |
| <i>Ephedra altissima</i> | Desf. | Ephedraceae | 4 | 3 |
| <i>Ephedra americana</i> | Humb. and Bonpl. Ex Willd. | Ephedraceae | 4 | 3 |
| <i>Ephedra antisiphilitica</i> | Berlandier ex Meyer | Ephedraceae | 4 | 3 |
| <i>Ephedra aphylla</i> | Forssk. | Ephedraceae | 3 | 3 |
| <i>Ephedra aspera</i> | Engelmann ex Watson | Ephedraceae | 4 | 3, 13 |
| <i>Ephedra californica</i> | Watson | Ephedraceae | 4 | 3 |
| <i>Ephedra ciliata</i> | Fisch. and Mey ex C. A. Meyer | Ephedraceae | 4 | 3 |
| <i>Ephedra coryi</i> | Reed | Ephedraceae | 4 | 3 |
| <i>Ephedra cutleri</i> | Peebles | Ephedraceae | 4 | 3 |
| <i>Ephedra distachya</i> | Linnaeus | Ephedraceae | 4 | 3 |
| <i>Ephedra equisetina</i> | Bunge | Ephedraceae | 4 | 3 |
| <i>Ephedra fasciculata</i> | Nelson | Ephedraceae | 4 | 3 |
| <i>Ephedra fedtschenkoae</i> | Pauls. | Ephedraceae | 4 | 3 |
| <i>Ephedra fragilis</i> | Desf. | Ephedraceae | 4 | 3 |
| <i>Ephedra frustillata</i> | Miers | Ephedraceae | 4 | 3 |
| <i>Ephedra funerea</i> | Coville and Morton | Ephedraceae | 4 | 3 |
| <i>Ephedra gerardiana</i> | Wall. Ex C. A. Meyer | Ephedraceae | 4 | 3 |
| <i>Ephedra intermedia</i> | Schrenk and Meyer ex C. A. Meyer | Ephedraceae | 4 | 3 |
| <i>Ephedra likiangensis</i> | Florin | Ephedraceae | 4 | 3 |
| <i>Ephedra lomatolepis</i> | Schrenk | Ephedraceae | 4 | 3 |
| <i>Ephedra macedonica</i> | Kos. | Ephedraceae | 4 | 3 |
| <i>Ephedra major</i> | (unkn.) | Ephedraceae | 4 | 3 |
| <i>Ephedra minuta</i> | Florin | Ephedraceae | 4 | 3 |
| <i>Ephedra monosperma</i> | Gmelin ex C. A. Meyer | Ephedraceae | 4 | 3 |
| <i>Ephedra nevadensis</i> | Watson | Ephedraceae | 4 | 3 |
| <i>Ephedra pachyclada</i> | Boiss. | Ephedraceae | 4 | 3 |
| <i>Ephedra pedunculata</i> | Engelmann ex Watson | Ephedraceae | 4 | 3 |
| <i>Ephedra przewalskii</i> | Stapf | Ephedraceae | 4 | 3 |
| <i>Ephedra regeliana</i> | Florin | Ephedraceae | 4 | 3 |
| <i>Ephedra rhytidiosperma</i> | Pachomova | Ephedraceae | 4 | 3 |
| <i>Ephedra sarcocarpa</i> | Aitch. And Hemsl. | Ephedraceae | 4 | 3 |
| <i>Ephedra saxatilis</i> | (Stapf) Royle ex Florin | Ephedraceae | 4 | 3 |
| <i>Ephedra sinica</i> | Stapf | Ephedraceae | 4 | 3 |
| <i>Ephedra torreyana</i> | Watson | Ephedraceae | 4 | 3 |
| <i>Ephedra trifurca</i> | Torrey ex Watson | Ephedraceae | 4 | 3 |
| <i>Ephedra viridis</i> | Coville and Morton | Ephedraceae | 4 | 3 |
| <i>Ginkgo biloba</i> | L. | Ginkgoaceae | 4 | 3 |
| <i>Gnetum acutum</i> | Markgr. | Gnetaceae | 4 | 14 |
| <i>Gnetum africanum</i> | Welw. | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum arboreum</i> | Foxw. | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum bosavicum</i> | Markgr. | Gnetaceae | 4 | 14 |
| <i>Gnetum buchholzianum</i> | Engl. | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum camporum</i> | D. Stevenson and T. Zanoni | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum catasphaericum</i> | H. Shao | Gnetaceae | 4 | 12, 14 |
| <i>Gnetum contractum</i> | Markgr. | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum costatum</i> | K. Sch. | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum cuspidatum</i> | Blume | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum diminutum</i> | Markgr. | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum formosum</i> | Markgr. | Gnetaceae | 4 | 14 |
| <i>Gnetum giganteum</i> | H. Shao | Gnetaceae | 4 | 14 |
| <i>Gnetum globosum</i> | Markgr. | Gnetaceae | 4 | 14 |
| <i>Gnetum gnemon</i> | L. | Gnetaceae | 4 | 3, 12, 14 |
| <i>Gnetum gnemonoides</i> | Brongn. | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum gracilipes</i> | C. Y. Cheng | Gnetaceae | 4 | 12, 14 |
| <i>Gnetum hainanense</i> | C. Y. Cheng | Gnetaceae | 4 | 3, 12, 14 |
| <i>Gnetum klossii</i> | Merr. Ex Markgraf | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum latifolium</i> | Blume | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum leptostachyum</i> | Blume | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum leyboldii</i> | Tulasne | Gnetaceae | 3 | 3, 14 |
| <i>Gnetum loerzingii</i> | Markgr. | Gnetaceae | 4 | 3, 14 |
| <i>Gnetum luofuense</i> | C. Y. Cheng | Gnetaceae | 4 | 12, 14 |
| <i>Gnetum macrostachyum</i> | Hook. F. | Gnetaceae | 4 | 3, 14 |

Appendix S1: Gymnosperms and their relation to water – detailed table including all 986 studied taxa.

| | | | | |
|-----------------------------|--------------------------------------|-----------------|---|-----------|
| Gnetum microcarpum | Blume | Gnetaceae | 4 | 3, 14 |
| Gnetum montanum | Markgr. | Gnetaceae | 4 | 3, 12, 14 |
| Gnetum neglectum | H. Karst. | Gnetaceae | 4 | 3, 14 |
| Gnetum oblongum | Ridl. | Gnetaceae | 4 | 3, 14 |
| Gnetum nodiflorum | Brongniart | Gnetaceae | 4 | 3, 14 |
| Gnetum oblongum | - | Gnetaceae | 4 | 3, 14 |
| Gnetum oxycarpum | Ridl. | Gnetaceae | 4 | 3, 14 |
| Gnetum paniculatum | Bentham | Gnetaceae | 3 | 3, 14 |
| Gnetum parvifolium | (Warb.) W. C. Cheng | Gnetaceae | 4 | 12, 14 |
| Gnetum pendulum | C. Y. Cheng | Gnetaceae | 4 | 12, 14 |
| Gnetum raya | - | Gnetaceae | 4 | 14 |
| Gnetum ridleyi | Gamble ex Markgr. | Gnetaceae | 4 | 3, 14 |
| Gnetum schwackeanum | taub. ex Schenk | Gnetaceae | 4 | 3, 14 |
| Gnetum tenuifolium | Ridl. | Gnetaceae | 4 | 3, 14 |
| Gnetum ula | Brongn. | Gnetaceae | 3 | 3, 14 |
| Gnetum urens | (Aubl.) Blume | Gnetaceae | 3 | 3, 14 |
| Gnetum venosum | Spruce | Gnetaceae | 4 | 14 |
| Phyllocladus asplenifolius | (Labaillardière) J. Hooker | Phyllocladaceae | 4 | 2, 3, 6 |
| Phyllocladus hypophyllus | J. Hooker | Phyllocladaceae | 4 | 2, 3, 6 |
| Phyllocladus toatoa | Molloy | Phyllocladaceae | 4 | 2, 3, 6 |
| Phyllocladus trichomanoides | D. Don | Phyllocladaceae | 4 | 6 |
| Abies alba | Mill. | Pinaceae | 4 | 6, 8 |
| Abies amabilis | Dougl. ex Forbes | Pinaceae | 3 | 8, 15, 16 |
| Abies balsamea | (L.) Mill. | Pinaceae | 3 | 6 |
| Abies beshanzuensis | M. H. Wu | Pinaceae | 4 | 6, 8 |
| Abies x borisii-regis | Mattf. | Pinaceae | 4 | 6, 8 |
| Abies bracteata | (D. Don) D. Don ex Poit. | Pinaceae | 3 | 6, 8 |
| Abies cephalonica | Loud. | Pinaceae | 4 | 6, 8 |
| Abies chensiensis | Van Tieghem | Pinaceae | 4 | 6, 8 |
| Abies cilicica | (Ant. et Kotschy) Carrière | Pinaceae | 4 | 6, 8 |
| Abies concolor | (Gord. et Glend.) Lindl. ex Hildebr. | Pinaceae | 3 | 6, 8, 15 |
| Abies delavayi | Franch. | Pinaceae | 4 | 6, 8 |
| Abies densa | Griff. | Pinaceae | 4 | 6, 8 |
| Abies durangensis | Martinez | Pinaceae | 4 | 6, 8 |
| Abies fabri | (Masters) Craib | Pinaceae | 4 | 6, 8 |
| Abies fanjingshanensis | Huang. Tu et Fang | Pinaceae | 4 | 6, 8 |
| Abies fargesii | Franch. | Pinaceae | 4 | 6, 8 |
| Abies firma | Sieb. et Zucc. | Pinaceae | 4 | 6, 8 |
| Abies forrestii | C. Coltm. Rochers | Pinaceae | 4 | 6, 8 |
| Abies fraseri | (Pursh) Poir. | Pinaceae | 3 | 6, 8, 16 |
| Abies grandis | (Dougl. ex D. Don) Lindl. | Pinaceae | 3 | 6, 8 |
| Abies guatemalensis | Rehder | Pinaceae | 4 | 6, 8 |
| Abies hickelii | Flous et Gausson | Pinaceae | 4 | 6, 8 |
| Abies hidalgensis | Debreczy | Pinaceae | 4 | 6, 8 |
| Abies holophylla | Maxim. | Pinaceae | 4 | 6, 8 |
| Abies homolepis | Sieb. et Zucc. | Pinaceae | 4 | 6, 8 |
| Abies kawakamii | (Hayata) Ito | Pinaceae | 4 | 6, 8 |
| Abies koreana | Wilson | Pinaceae | 4 | 6, 8 |
| Abies lasiocarpa | (Hook.) Nutt. | Pinaceae | 3 | 8, 15, 16 |
| Abies magnifica | A. Murray bis. | Pinaceae | 4 | 6, 8 |
| Abies mariesii | Masters | Pinaceae | 4 | 6, 8 |
| Abies nebrodensis | (Lojac.) Mattei | Pinaceae | 4 | 6, 8 |
| Abies nephrolepis | (Trautv. ex Maxim.) Maxim. | Pinaceae | 4 | 6, 8 |
| Abies nordmanniana | (Steven) Spach | Pinaceae | 4 | 6, 8 |
| Abies numidica | De Lannoy ex Carrière | Pinaceae | 4 | 6, 8 |
| Abies pindrow | (D. Don) Royle | Pinaceae | 4 | 6, 8 |
| Abies pinsapo | Boiss. | Pinaceae | 4 | 6, 8 |
| Abies procera | Rehder | Pinaceae | 4 | 6, 8 |
| Abies recurvata | Masters | Pinaceae | 4 | 6, 8 |
| Abies religiosa | (H.B.K.) Schlecht. et Cham. | Pinaceae | 4 | 6, 8 |
| Abies sachalinensis | (Fr. Schmidt) Masters | Pinaceae | 4 | 6, 8 |
| Abies sibirica | Ledeb. | Pinaceae | 4 | 6, 8 |
| Abies spectabilis | (D. Don) Spach | Pinaceae | 4 | 6, 8 |
| Abies squamata | Masters | Pinaceae | 4 | 6, 8 |
| Abies veitchii | Lindl. | Pinaceae | 4 | 6, 8 |
| Abies vejarii | Martinez | Pinaceae | 4 | 6, 8 |
| Abies yuanbaoshanensis | Lü et Fu | Pinaceae | 4 | 6, 8 |
| Abies ziyuanensis | Fu et Mo | Pinaceae | 4 | 6, 8 |
| Cathaya argyrophylla | Chun et Kuang | Pinaceae | 4 | 6, 8 |
| Cedrus atlantica | (Endl.) Manetti ex Carrière | Pinaceae | 4 | 6, 8 |
| Cedrus deodara | (Roxb.) G. Don in Loud. | Pinaceae | 4 | 6, 8 |
| Cedrus libani | A. Rich. | Pinaceae | 4 | 6, 8 |
| Keteleeria davidiana | (Bertr.) Beissn. | Pinaceae | 4 | 6, 8 |
| Keteleeria evelyniana | Masters | Pinaceae | 4 | 6, 8 |
| Keteleeria fortunei | (Andr. Murray) Carrière | Pinaceae | 4 | 6, 8 |
| Larix x czekanowskii | Szafer | Pinaceae | 3 | 6 |
| Larix decidua | Mill. | Pinaceae | 4 | 6, 8 |
| Larix gmelinii | (Rupr) Rupr. | Pinaceae | 3 | 6, 8 |
| Larix griffithii | Hook. f. | Pinaceae | 4 | 6, 8 |
| Larix kaempferi | (Lamb.) Carrière | Pinaceae | 4 | 6, 8 |
| Larix laricina | (Du Roi) K. Koch | Pinaceae | 3 | 6, 8 |
| Larix lyallii | Parl. | Pinaceae | 4 | 6, 8 |
| Larix mastersiana | Rehder et Wilson | Pinaceae | 4 | 6, 8 |
| Larix occidentalis | Nutt. | Pinaceae | 3 | 6, 8, 16 |
| Larix potaninii | Batalin | Pinaceae | 4 | 6, 8 |

Appendix S1: Gymnosperms and their relation to water – detailed table including all 986 studied taxa.

| | | | | |
|----------------------------------|---|----------|---|--------------|
| <i>Larix sibirica</i> | Ledeb. | Pinaceae | 3 | 6, 8 |
| <i>Nothotsuga longibracteata</i> | (Cheng) Hu ex C.N. Page | Pinaceae | 4 | 6, 8 |
| <i>Picea abies</i> | (L.) Karst. | Pinaceae | 4 | 6, 8 |
| <i>Picea alcoquiana</i> | (Veitch ex Lindl.) Carrière | Pinaceae | 4 | 6, 8 |
| <i>Picea asperata</i> | Masters | Pinaceae | 4 | 6, 8 |
| <i>Picea aurantiaca</i> | Masters | Pinaceae | 4 | 6, 8 |
| <i>Picea brachytyla</i> | (Franch.) Pritzelt | Pinaceae | 4 | 6, 8 |
| <i>Picea breweriana</i> | S. Watson | Pinaceae | 4 | 6, 8 |
| <i>Picea chihuahuana</i> | Martinez | Pinaceae | 3 | 6, 8 |
| <i>Picea crassifolia</i> | Komarov | Pinaceae | 4 | 6, 8 |
| <i>Picea engelmannii</i> | Parry ex Engelm. | Pinaceae | 3 | 6, 8, 15, 16 |
| <i>Picea farreri</i> | Page et Rushforth | Pinaceae | 4 | 6, 8 |
| <i>Picea x fennica</i> | (Regel) Kom. | Pinaceae | 3 | 6, 8 |
| <i>Picea glauca</i> | (Moench) Voss | Pinaceae | 3 | 6, 8, 15, 16 |
| <i>Picea glehnii</i> | (Fr. Schmidt) Masters | Pinaceae | 4 | 6, 8 |
| <i>Picea jezoensis</i> | (Sieb. et Zucc.) Carrière | Pinaceae | 4 | 6, 8 |
| <i>Picea koraiensis</i> | Nakai | Pinaceae | 3 | 6, 8 |
| <i>Picea koyamae</i> | Shirasawa | Pinaceae | 4 | 6, 8 |
| <i>Picea likiangensis</i> | (Franch.) Pritzelt | Pinaceae | 4 | 6, 8 |
| <i>Picea linzhiensis</i> | (W. C. Cheng & L. K. Fu) Rushforth | Pinaceae | 4 | 6, 8 |
| <i>Picea x lutzii</i> | Little | Pinaceae | 4 | 6, 8 |
| <i>Picea mariana</i> | (Mill.) B.S.P. | Pinaceae | 3 | 6, 8, 16 |
| <i>Picea martiniezii</i> | T. F. Patt. | Pinaceae | 4 | 6, 8 |
| <i>Picea maximowiczii</i> | Regel ex Masters | Pinaceae | 4 | 6, 8 |
| <i>Picea meyeri</i> | Rehder et Wilson | Pinaceae | 4 | 6, 8 |
| <i>Picea morrisonicola</i> | Hayata | Pinaceae | 4 | 6, 8 |
| <i>Picea neoveitchii</i> | Masters | Pinaceae | 4 | 6, 8 |
| <i>Picea obovata</i> | Ledeb. | Pinaceae | 3 | 6, 8 |
| <i>Picea omorika</i> | (Pancic) Purkyne | Pinaceae | 4 | 6, 8 |
| <i>Picea orientalis</i> | (L.) Link | Pinaceae | 4 | 6, 8 |
| <i>Picea pungens</i> | Engelm. | Pinaceae | 3 | 6, 8, 16 |
| <i>Picea purpurea</i> | Masters | Pinaceae | 4 | 6, 8 |
| <i>Picea retroflexa</i> | Masters | Pinaceae | 4 | 6, 8 |
| <i>Picea rubens</i> | Sargent | Pinaceae | 3 | 6, 8, 15, 16 |
| <i>Picea schrenkiana</i> | Fischer et Meyer | Pinaceae | 3 | 6, 8 |
| <i>Picea sitchensis</i> | (Bong.) Carrière | Pinaceae | 3 | 6, 8, 15, 16 |
| <i>Picea smithiana</i> | (Wallich) Boiss. | Pinaceae | 4 | 6, 8 |
| <i>Picea spinulosa</i> | (Griff.) Henry | Pinaceae | 4 | 6, 8 |
| <i>Picea torano</i> | (K. Koch) Koehne | Pinaceae | 4 | 6, 8 |
| <i>Picea wilsonii</i> | Masters | Pinaceae | 4 | 6, 8 |
| <i>Pinus albicaulis</i> | Engelm. | Pinaceae | 4 | 6, 7 |
| <i>Pinus amamiana</i> | Koidzumii | Pinaceae | 4 | 6, 7 |
| <i>Pinus aristata</i> | Engelmann | Pinaceae | 4 | 6, 7 |
| <i>Pinus arizonica</i> | Engelmann | Pinaceae | 4 | 6, 7 |
| <i>Pinus armandii</i> | Franchet | Pinaceae | 4 | 6, 7 |
| <i>Pinus attenuata</i> | Lemmon | Pinaceae | 4 | 6, 7 |
| <i>Pinus ayacahuite</i> | Ehrenberg ex Schlechtendahl | Pinaceae | 4 | 6, 7 |
| <i>Pinus balfouriana</i> | Balf. | Pinaceae | 4 | 6, 7 |
| <i>Pinus banksiana</i> | Lambert | Pinaceae | 3 | 6, 7, 15, 16 |
| <i>Pinus bhutanica</i> | Grierson et al. | Pinaceae | 4 | 6, 7 |
| <i>Pinus brutia</i> | Tenore | Pinaceae | 4 | 6, 7 |
| <i>Pinus bungeana</i> | Zuccarini ex Endlicher | Pinaceae | 4 | 6, 7 |
| <i>Pinus canariensis</i> | C. Smith | Pinaceae | 4 | 6, 7 |
| <i>Pinus caribaea</i> | Morelet | Pinaceae | 4 | 6, 7 |
| <i>Pinus cembra</i> | Lam. | Pinaceae | 4 | 6, 7 |
| <i>Pinus cembroides</i> | Zuccarini | Pinaceae | 4 | 6, 7 |
| <i>Pinus clausa</i> | (Chapman ex Engelmann) Vasey ex Sargent | Pinaceae | 4 | 6, 7 |
| <i>Pinus contorta</i> | Douglas ex Loudon | Pinaceae | 3 | 6, 7, 15, 16 |
| <i>Pinus coulteri</i> | D. Don | Pinaceae | 4 | 6, 7 |
| <i>Pinus cubensis</i> | Grisebach | Pinaceae | 4 | 6, 7 |
| <i>Pinus culminicola</i> | Andresen et Beaman | Pinaceae | 4 | 6, 7 |
| <i>Pinus dalatensis</i> | Ferré | Pinaceae | 4 | 6, 7 |
| <i>Pinus densata</i> | Masters | Pinaceae | 4 | 6, 7 |
| <i>Pinus x densithunbergii</i> | Uyeki | Pinaceae | 3 | 6 |
| <i>Pinus densiflora</i> | Siebold et Zuccarini | Pinaceae | 3 | 6, 7 |
| <i>Pinus devoniana</i> | Lindley | Pinaceae | 4 | 6, 7 |
| <i>Pinus douglasiana</i> | Martínez | Pinaceae | 4 | 6, 7 |
| <i>Pinus durangensis</i> | Martínez | Pinaceae | 4 | 6, 7 |
| <i>Pinus echinata</i> | Miller | Pinaceae | 4 | 6, 7 |
| <i>Pinus edulis</i> | Engelmann | Pinaceae | 4 | 6, 7 |
| <i>Pinus elliottii</i> | Engelmann | Pinaceae | 3 | 6, 7, 16 |
| <i>Pinus engelmannii</i> | Carrière | Pinaceae | 4 | 6, 7 |
| <i>Pinus fenzieliana</i> | Hand.-Mazz. | Pinaceae | 4 | 6, 7 |
| <i>Pinus flexilis</i> | E. James | Pinaceae | 4 | 6, 7 |
| <i>Pinus gerardiana</i> | Wall. ex D. Don | Pinaceae | 4 | 6, 7 |
| <i>Pinus glabra</i> | Walt. | Pinaceae | 3 | 6, 7, 16 |
| <i>Pinus greggii</i> | Engelmann ex Parlatores | Pinaceae | 4 | 6, 7 |
| <i>Pinus x hakkodensis</i> | Makino | Pinaceae | 4 | 6, 7 |
| <i>Pinus halepensis</i> | Mill. | Pinaceae | 4 | 6, 7 |
| <i>Pinus hartwegii</i> | Lindl. | Pinaceae | 4 | 6, 7 |
| <i>Pinus heldreichii</i> | H. Christ | Pinaceae | 4 | 6, 7 |
| <i>Pinus henryi</i> | Mast. | Pinaceae | 4 | 6, 7 |
| <i>Pinus herrerae</i> | Martínez | Pinaceae | 4 | 6, 7 |
| <i>Pinus hwangshanensis</i> | W.Y. Hsia | Pinaceae | 4 | 6, 7 |
| <i>Pinus jaliscana</i> | Pérez de la Rosa | Pinaceae | 4 | 6, 7 |

Appendix S1: Gymnosperms and their relation to water – detailed table including all 986 studied taxa.

| | | | | |
|-------------------------------|---------------------------------------|---------------|---|--------------|
| <i>Pinus jeffreyi</i> | Balf. | Pinaceae | 4 | 6, 7 |
| <i>Pinus kesiya</i> | Royle ex Gordon | Pinaceae | 4 | 6, 7 |
| <i>Pinus koraiensis</i> | Siebold et Zucc. | Pinaceae | 4 | 6, 7 |
| <i>Pinus krempfii</i> | Lecomte | Pinaceae | 3 | 6, 7 |
| <i>Pinus lambertiana</i> | Douglas | Pinaceae | 4 | 6, 7 |
| <i>Pinus latteri</i> | Mason | Pinaceae | 4 | 6, 7 |
| <i>Pinus lawsonii</i> | Roehl ex Gordon | Pinaceae | 4 | 6, 7 |
| <i>Pinus leiophylla</i> | Schiede ex Schlechtendal et Chamisso | Pinaceae | 4 | 6, 7 |
| <i>Pinus longaeva</i> | D.K. Bailey | Pinaceae | 4 | 6, 7 |
| <i>Pinus luchuensis</i> | Mayr | Pinaceae | 4 | 6, 7 |
| <i>Pinus lumholtzii</i> | B. L. Rob. et Fernald | Pinaceae | 4 | 6, 7 |
| <i>Pinus luzmariae</i> | Pérez de la Rosa | Pinaceae | 4 | 6 |
| <i>Pinus massoniana</i> | (Lamb.) Opiz | Pinaceae | 4 | 6, 7 |
| <i>Pinus maximartinezii</i> | Martínez piñon | Pinaceae | 4 | 6, 7 |
| <i>Pinus maximinoi</i> | H.E. Moore | Pinaceae | 4 | 6, 7 |
| <i>Pinus merkusii</i> | Junghuhn & de Vriese | Pinaceae | 4 | 6, 7 |
| <i>Pinus monophylla</i> | Torrey et Frémont | Pinaceae | 4 | 6, 7 |
| <i>Pinus montezumae</i> | Lambert | Pinaceae | 4 | 6, 7 |
| <i>Pinus monticola</i> | Douglas ex D. Don | Pinaceae | 3 | 6, 7, 15, 16 |
| <i>Pinus morrisonicola</i> | Hayata | Pinaceae | 4 | 6, 7 |
| <i>Pinus mugo</i> | Turra | Pinaceae | 3 | 6, 7 |
| <i>Pinus muricata</i> | D. Don | Pinaceae | 3 | 6, 7 |
| <i>Pinus x neilreichiana</i> | Reichardt | Pinaceae | 4 | 6 |
| <i>Pinus nelsonii</i> | Nelson piñon | Pinaceae | 4 | 6, 7 |
| <i>Pinus nigra</i> | J.F. Arnold | Pinaceae | 4 | 6 |
| <i>Pinus occidentalis</i> | Swartz | Pinaceae | 4 | 6, 7 |
| <i>Pinus oocarpa</i> | Schiede ex Schlechtendahl | Pinaceae | 4 | 6, 7 |
| <i>Pinus palustris</i> | Miller | Pinaceae | 3 | 6, 7, 15, 16 |
| <i>Pinus parviflora</i> | Siebold & Zucc. | Pinaceae | 4 | 6, 7 |
| <i>Pinus patula</i> | Schiede ex Schlechtendahl et Chamisso | Pinaceae | 4 | 6, 7 |
| <i>Pinus peuce</i> | Grisebach | Pinaceae | 4 | 6, 7 |
| <i>Pinus pinaster</i> | Aiton | Pinaceae | 4 | 6, 7 |
| <i>Pinus pinceana</i> | Gordon | Pinaceae | 4 | 6, 7 |
| <i>Pinus pinea</i> | Linnaeus | Pinaceae | 4 | 6, 7 |
| <i>Pinus ponderosa</i> | Douglas ex Lawson et C. Lawson | Pinaceae | 3 | 6, 7, 15, 16 |
| <i>Pinus praetermissa</i> | Styles et McVaugh | Pinaceae | 4 | 6, 7 |
| <i>Pinus pringlei</i> | Shaw | Pinaceae | 4 | 6, 7 |
| <i>Pinus pseudostrobus</i> | Lindley | Pinaceae | 4 | 6, 7 |
| <i>Pinus pumila</i> | (Pallas) Regel | Pinaceae | 4 | 6, 7 |
| <i>Pinus pungens</i> | Lambert | Pinaceae | 4 | 6, 7 |
| <i>Pinus quadrifolia</i> | Parlatore ex Sudworth | Pinaceae | 4 | 6, 7 |
| <i>Pinus radiata</i> | D. Don | Pinaceae | 4 | 6, 7 |
| <i>Pinus remota</i> | (Little) D. K. Bailey & Hawksw. | Pinaceae | 4 | 6 |
| <i>Pinus resinosa</i> | Aiton | Pinaceae | 3 | 6, 7, 15, 16 |
| <i>Pinus x rhaetica</i> | Brügger | Pinaceae | 4 | 6 |
| <i>Pinus rigida</i> | Miller | Pinaceae | 3 | 6, 7, 15, 16 |
| <i>Pinus roxburghii</i> | Sarent | Pinaceae | 4 | 6, 7 |
| <i>Pinus rzedowskii</i> | Madrigal Sánchez et Caballero Deloya | Pinaceae | 4 | 6, 7 |
| <i>Pinus sabiniana</i> | Douglas ex D. Don | Pinaceae | 4 | 6, 7 |
| <i>Pinus serotina</i> | Michaux | Pinaceae | 3 | 6, 7, 16 |
| <i>Pinus sibirica</i> | Du Tour | Pinaceae | 4 | 6, 7 |
| <i>Pinus squamata</i> | Li | Pinaceae | 4 | 6, 7 |
| <i>Pinus strobiformis</i> | Engelmann | Pinaceae | 4 | 6, 7 |
| <i>Pinus strobus</i> | Linnaeus | Pinaceae | 3 | 6, 7, 15, 16 |
| <i>Pinus sylvestris</i> | Linnaeus | Pinaceae | 3 | 6, 7 |
| <i>Pinus tabuliformis</i> | Carrière | Pinaceae | 4 | 6, 7 |
| <i>Pinus taeda</i> | Linnaeus | Pinaceae | 3 | 6, 7, 16 |
| <i>Pinus taiwanensis</i> | Hayata | Pinaceae | 4 | 6, 7 |
| <i>Pinus tecunumanii</i> | Eguiluz et Perry | Pinaceae | 4 | 6, 7 |
| <i>Pinus teocote</i> | Schiede ex Schlechtendal et Chamisso | Pinaceae | 4 | 6, 7 |
| <i>Pinus thunbergii</i> | Parlatore | Pinaceae | 3 | 6, 7 |
| <i>Pinus torreyana</i> | Parry ex Carrière | Pinaceae | 4 | 6, 7 |
| <i>Pinus tropicalis</i> | Morelet | Pinaceae | 4 | 6, 7 |
| <i>Pinus uncinata</i> | Ramond ex DC. | Pinaceae | 3 | 6 |
| <i>Pinus virginiana</i> | Miller | Pinaceae | 4 | 6, 7 |
| <i>Pinus wallichiana</i> | A.B. Jacks | Pinaceae | 4 | 6, 7 |
| <i>Pinus wangii</i> | Hu et W.C. Cheng | Pinaceae | 4 | 6 |
| <i>Pinus yunnanensis</i> | Franch. | Pinaceae | 4 | 6, 7 |
| <i>Pseudolarix amabilis</i> | (Nelson) Rehder | Pinaceae | 4 | 6, 8 |
| <i>Pseudotsuga japonica</i> | (Shirasawa) Beissn. | Pinaceae | 4 | 6, 8 |
| <i>Pseudotsuga macrocarpa</i> | (Vasey) Mayr | Pinaceae | 4 | 6, 8 |
| <i>Pseudotsuga menziesii</i> | (Mirb.) Franco | Pinaceae | 4 | 6, 8 |
| <i>Pseudotsuga sinensis</i> | Dode | Pinaceae | 4 | 6, 8 |
| <i>Tsuga canadensis</i> | (L.) Carrière | Pinaceae | 3 | 8, 15, 16 |
| <i>Tsuga caroliniana</i> | Engelm. | Pinaceae | 3 | 6, 8 |
| <i>Tsuga chinensis</i> | (Franch.) Pritzel in Diels | Pinaceae | 4 | 6, 8 |
| <i>Tsuga diversifolia</i> | (Maxim.) Masters | Pinaceae | 4 | 6, 8 |
| <i>Tsuga dumosa</i> | (D. Don) Eichler | Pinaceae | 4 | 6, 8 |
| <i>Tsuga forrestii</i> | Downie | Pinaceae | 4 | 6, 8 |
| <i>Tsuga heterophylla</i> | (Raf.) Sargent | Pinaceae | 3 | 6, 8, 15, 16 |
| <i>Tsuga mertensiana</i> | (Bong.) Carrière | Pinaceae | 3 | 3 |
| <i>Tsuga sieboldii</i> | Carrière | Pinaceae | 4 | 6, 8 |
| <i>Tsugapyle pancheri</i> | (Ad. Brongniart & Gris) Pilger | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Tsugapyle sahniana</i> | J. Buchholz | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Afrocarpus dawei</i> | (Stapf) C. N. Page | Podocarpaceae | 3 | 6 |

Appendix S1: Gymnosperms and their relation to water – detailed table including all 986 studied taxa.

| | | | | |
|-----------------------------------|---------------------------------------|---------------|---|-------------|
| <i>Afrocarpus falcatus</i> | (Thunberg) C. Page | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Afrocarpus gracilior</i> | (Pilg.) C. N. Page | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Afrocarpus mannii</i> | (J. Hooker) C. Page | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Afrocarpus usambarensis</i> | (Pilg.) C. N. Page | Podocarpaceae | 4 | 6 |
| <i>Dacrycarpus cinctus</i> | (Pilger) de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Dacrycarpus compactus</i> | (Wasscher) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrycarpus cumingii</i> | (Parlatore) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrycarpus dacrydioides</i> | (A. Richard) de Laubenfels | Podocarpaceae | 2 | 2, 3, 6 |
| <i>Dacrycarpus expansus</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrycarpus imbricatus</i> | (Blume) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrycarpus kinabaluensis</i> | (Wasscher) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrycarpus steupii</i> | (Wasscher) de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Dacrycarpus vieillardii</i> | (Parlatore) de Laubenfels | Podocarpaceae | 3 | 2, 3, 6, 11 |
| <i>Dacrydium araucarioides</i> | Ad. Brongniart & Gris | Podocarpaceae | 3 | 2, 3, 6, 11 |
| <i>Dacrydium balansae</i> | Ad. Brongniart & Gris | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Dacrydium beccarii</i> | Parlatore | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium comosum</i> | Corner | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium cornwallianum</i> | de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Dacrydium cupressinum</i> | Solander ex J. G. Forster | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium elatum</i> | (Roxburgh) N. Wallich ex W. J. Hooker | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Dacrydium ericoides</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium gibbsiae</i> | Stapf | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium gracile</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium guillauminii</i> | J. Buchholz | Podocarpaceae | 2 | 2, 3, 6, 11 |
| <i>Dacrydium leptophyllum</i> | (Wasscher) de Laubenfels ex Silba | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium lycopodioides</i> | Ad. Brongniart & Gris | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Dacrydium magnum</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium medium</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium nausoriensis</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium nidulum</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium novoguineense</i> | L. Gibbs | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium pectinatum</i> | de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Dacrydium spathoides</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Dacrydium x suprinii</i> | Nimsch | Podocarpaceae | 3 | 6 |
| <i>Dacrydium xanthandrum</i> | Pilger | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Falcatifolium angustum</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Falcatifolium falciforme</i> | (Parlatore) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Falcatifolium gruezoi</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Falcatifolium papuanum</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Falcatifolium sleumeri</i> | de Laubenfels & Silba | Podocarpaceae | 4 | 6 |
| <i>Falcatifolium taxoides</i> | (Ad. Brongniart & Gris) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Halocarpus bidwillii</i> | (J. Hooker ex T. Kirk) Quinn | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Halocarpus biformis</i> | (W. J. Hooker) Quinn | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Halocarpus kirkii</i> | (F. J. Mueller ex Parlatore) Quinn | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Lagarostrobos franklinii</i> | (J. Hooker) Quinn | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Lepidothamnus fonkii</i> | R. Philippi | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Lepidothamnus intermedius</i> | (T. Kirk) Quinn | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Lepidothamnus laxifolius</i> | (J. Hooker) Quinn | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Manoao colensoi</i> | (W. J. Hooker) Molloy | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Microcachrys tetragona</i> | J. Hooker | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Nageia fleuryi</i> | (P. Hickel) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Nageia maxima</i> | (de Laubenfels) de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Nageia motleyi</i> | (Parlatore) de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Nageia nagi</i> | (Thunberg) O. Kuntze | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Nageia wallichiana</i> | (C. Presl) O. Kuntze | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Parasitaxus usta</i> | (Vieillard) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Ptherosphaera fitzgeraldii</i> | (F. Muell.) Hook. F. | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Ptherosphaera hookeriana</i> | W. Archer | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus acuminatus</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus acutifolius</i> | T. Kirk | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus affinis</i> | B. Seemann | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus angustifolius</i> | Grisebach | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus aracensis</i> | de Laub. & Silba | Podocarpaceae | 3 | 6 |
| <i>Podocarpus archboldii</i> | N. Gray | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus atjehensis</i> | (Wasscher) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus borneensis</i> | de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus bracteatus</i> | Blume | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus brasiliensis</i> | de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus brassii</i> | Pilger | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus brevifolius</i> | (Stapf) Foxw. | Podocarpaceae | 4 | 6 |
| <i>Podocarpus buchii</i> | Urb. | Podocarpaceae | 4 | 6 |
| <i>Podocarpus capuronii</i> | de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus celatus</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus chingianus</i> | (N. E. Gray) S. Y. Hu | Podocarpaceae | 4 | 6 |
| <i>Podocarpus confertus</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus coriaceus</i> | L. Richard & A. Richard | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus costalis</i> | C. Presl | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus costaricensis</i> | de Laubenfels ex Silba | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus crassigemma</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus cunninghamii</i> | Colenso | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus decumbens</i> | N. Gray | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Podocarpus deflexus</i> | H. Ridley | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus dispermus</i> | C. White | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus drouynianus</i> | F. J. Mueller | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus ekmanii</i> | Urb. | Podocarpaceae | 3 | 6 |

Appendix S1: Gymnosperms and their relation to water – detailed table including all 986 studied taxa.

| | | | | |
|-------------------------------------|--|----------------------|----------|--------------|
| <i>Podocarpus elatus</i> | R. Brown ex Endlicher | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus elongatus</i> | (W. Aiton) l'Héritier ex Persoon | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus fasciculatus</i> | de Laubenfels | Podocarpaceae | 4 | 6 |
| <i>Podocarpus gibbsiae</i> | N. Gray | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus glaucus</i> | Foxw. | Podocarpaceae | 3 | 6 |
| <i>Podocarpus globulus</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus glomeratus</i> | D. Don | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus gnidioides</i> | Carrière | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Podocarpus grayae</i> | de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus guatemalensis</i> | P. Standley | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus henkelii</i> | Stapf ex Dallimore & A. B. Jackson | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus hispaniolensis</i> | de Laubenfels | Podocarpaceae | 4 | 6 |
| <i>Podocarpus humbertii</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus insularis</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus lambertii</i> | Klotzsch ex Endlicher | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus latifolius</i> | (Thunberg) R. Brown ex Mirbel | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus laubenfelsii</i> | Tiong | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus lawrencei</i> | J. Hooker | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus ledermannii</i> | Pilger | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus levis</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus longifoliolatus</i> | Pilger | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Podocarpus lophatus</i> | de Laubenfels | Podocarpaceae | 4 | 6 |
| <i>Podocarpus lucienii</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Podocarpus macrocarpus</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus macrophyllus</i> | (Thunberg) R. Sweet | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus madagascariensis</i> | Baker | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus magnifolius</i> | J. Buchholz & N. Gray | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus matudae</i> | C. Lundell | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus micropedunculatus</i> | de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus milanjanus</i> | Rendle | Podocarpaceae | 4 | 6 |
| <i>Podocarpus nakaii</i> | Hayata | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus neriiifolius</i> | D. Don | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus nivalis</i> | W. J. Hooker | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus novae-caledoniae</i> | Vieillard | Podocarpaceae | 3 | 2, 3, 6, 11 |
| <i>Podocarpus nubigenus</i> | Lindley | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus oleifolius</i> | D. Don | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus palawensis</i> | de Laub. & Silba | Podocarpaceae | 4 | 6 |
| <i>Podocarpus pallidus</i> | N. Gray | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus parlatorei</i> | Pilger | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus pendulifolius</i> | J. Buchholz & N. Gray | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus perrieri</i> | Gaussen & Woltz | Podocarpaceae | 4 | 6 |
| <i>Podocarpus pilgeri</i> | Foxworthy | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus polyspermus</i> | de Laubensfeld | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Podocarpus polystachyus</i> | R. Brown ex Endlicher | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus pseudobracteatus</i> | de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus purdieanus</i> | W. J. Hooker | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus ramosii</i> | R. R. Mill | Podocarpaceae | 4 | 6 |
| <i>Podocarpus ridleyi</i> | (Wasscher) N. Gray | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus roraimae</i> | Pilger | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus rostratus</i> | L. Laurent | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus rubens</i> | de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus rumphii</i> | Blume | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus rusbyi</i> | J. Buchholz & N. Gray | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus salicifolius</i> | Klotzsch & H. Karsten ex Endlicher | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus salignus</i> | D. Don | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus salomoniensis</i> | Wasscher | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus sellowii</i> | Klotzsch ex Endlicher | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus smithii</i> | de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus spathoides</i> | de Laubenfels | Podocarpaceae | 4 | 6 |
| <i>Podocarpus spinulosus</i> | (J. E. Smith) R. Brown ex Mirbel | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus sprucei</i> | Parlatore | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus steyermarkii</i> | J. Buchholz & N. Gray | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus subtropicalis</i> | de Laubenfels | Podocarpaceae | 4 | 6 |
| <i>Podocarpus sylvestris</i> | J. Buchholz | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Podocarpus tepuiensis</i> | J. Buchholz & N. Gray | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus teysmannii</i> | Miquel | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Podocarpus totara</i> | G. Bennett ex D. Don | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus transiens</i> | (Pilg.) de Laub. ex Silba | Podocarpaceae | 4 | 6 |
| <i>Podocarpus trinitensis</i> | J. Buchholz & N. Gray | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Podocarpus urbanii</i> | Pilger | Podocarpaceae | 4 | 6 |
| <i>Prumnopitys andina</i> | (Poeppig ex Endlicher) de Laubenfels | Podocarpaceae | 3 | 2, 3, 6 |
| <i>Prumnopitys exigua</i> | de Laubenfels | Podocarpaceae | 4 | 6 |
| <i>Prumnopitys ferruginea</i> | (G. Bennett ex D. Don) | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Prumnopitys ferruginoides</i> | (R. Compton) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Prumnopitys harmsiana</i> | (Pilger) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Prumnopitys laevis</i> | (F. M. Bailey) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Prumnopitys montana</i> | (Humboldt & Bonpland ex Willdenow) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Prumnopitys standleyi</i> | (J. T. Buchholz & N. E. Gray) de Laubenfels | Podocarpaceae | 4 | 6 |
| <i>Prumnopitys taxifolia</i> | (J. Banks & Solander ex D. Don) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Retrophyllum comptonii</i> | (J. Buchholz) C. Page | Podocarpaceae | 4 | 2, 3, 6, 11 |
| <i>Retrophyllum minus</i> | (Carrière) C. Page | Podocarpaceae | 1 | 6, 11 |
| <i>Retrophyllum piresii</i> | (Silba) C. Page | Podocarpaceae | 4 | 6 |
| <i>Retrophyllum rospigliosii</i> | (Pilger) C. Page | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Retrophyllum vitiense</i> | (B. Seemann) C. Page | Podocarpaceae | 4 | 2, 3, 6 |
| <i>Saxegothaea conspicua</i> | Lindley | Podocarpaceae | 3 | 2, 3, 6 |

Appendix S1: Gymnosperms and their relation to water – detailed table including all 986 studied taxa.

| | | | | |
|-----------------------------------|--|----------------------|----------|--------------|
| Sundacarpus amarus | (Blume) de Laubenfels | Podocarpaceae | 4 | 2, 3, 6 |
| Sciadopitys verticillata | (Thunberg) P. Siebold & Zuccarini | Sciadopityaceae | 4 | 6 |
| Bowenia serrulata | (Bull) Chamberlain | Stangeriaceae | 4 | 10 |
| Bowenia spectabilis | W. Hooker ex J. Hooker | Stangeriaceae | 3 | 10 |
| Stangeria eriopus | (Kunze) Baillon | Stangeriaceae | 4 | 10 |
| Amentotaxus argotaenia | (Hance) Pilger | Taxaceae | 3 | 2, 6 |
| Amentotaxus assamica | D. K. Ferguson | Taxaceae | 4 | 2, 6 |
| Amentotaxus formosana | H. L. Li | Taxaceae | 4 | 2, 6 |
| Amentotaxus hatuyenensis | Hiep | Taxaceae | 4 | 2, 6 |
| Amentotaxus poilanei | (Ferré & Rouane) D. K. Ferguson | Taxaceae | 4 | 6 |
| Amentotaxus yunnanensis | H. L. Li | Taxaceae | 4 | 6 |
| Austrotaxus spicata | R. Compton | Taxaceae | 4 | 2, 6 |
| Pseudotaxus chienii | (W. C. Cheng) W. C. Cheng | Taxaceae | 4 | 2, 6 |
| Taxus baccata | L. | Taxaceae | 3 | 2, 6 |
| Taxus brevifolia | Nutt. | Taxaceae | 3 | 2, 6 |
| Taxus canadensis | Marshall | Taxaceae | 3 | 2, 6 |
| Taxus chinensis | (Pilg.) Rehd. | Taxaceae | 3 | 6 |
| Taxus contorta | Griff. | Taxaceae | 4 | 6 |
| Taxus cuspidata | P. Siebold & Zuccarini | Taxaceae | 4 | 2, 6 |
| Taxus floridana | A. W. Chapman | Taxaceae | 3 | 2, 6 |
| Taxus globosa | D. F. L. Schlechtendal | Taxaceae | 3 | 2, 6 |
| Taxus mairei | (Lemée & Lév.) S. Y. Hu ex T. S. Liu | Taxaceae | 3 | 6 |
| Taxus wallichiana | Zuccarini | Taxaceae | 4 | 2, 6 |
| Torreya californica | J. Torrey | Taxaceae | 3 | 2, 6 |
| Torreya fargesii | Franchet | Taxaceae | 3 | 2, 6 |
| Torreya grandis | Fortune ex Lindley | Taxaceae | 3 | 2, 6 |
| Torreya jackii | W. Y. Chun | Taxaceae | 3 | 2, 6 |
| Torreya nucifera | (Linnaeus) P. Siebold & Zuccarini | Taxaceae | 3 | 2, 6 |
| Torreya taxifolia | G. Arnott | Taxaceae | 4 | 2, 6 |
| Welwitschia mirabilis | Hooker | Welwitschiaceae | 4 | 3 |
| Ceratozamia alvarezii | Pérez-Farrera, Vovides & Iglesias | Zamiaceae | 4 | 9, 10 |
| Ceratozamia euryphyllidia | Vasq. Torres, Sabato & D.W. Stev | Zamiaceae | 4 | 9, 10 |
| Ceratozamia hildae | G.P. Landry & M.C. Wilson | Zamiaceae | 4 | 9, 10 |
| Ceratozamia kuesteriana | Regel | Zamiaceae | 4 | 9, 10 |
| Ceratozamia latifolia | Miq. | Zamiaceae | 4 | 9, 10 |
| Ceratozamia matudae | Lundell | Zamiaceae | 4 | 9, 10 |
| Ceratozamia mexicana | Brongn. | Zamiaceae | 4 | 9, 10 |
| Ceratozamia microstrobila | Vovides & J.D. Rees | Zamiaceae | 4 | 9, 10 |
| Ceratozamia miqueliana | H. Wendl. | Zamiaceae | 4 | 9, 10 |
| Ceratozamia mirandae | Vovides, Pérez-Farrera & Iglesias | Zamiaceae | 4 | 9, 10 |
| Ceratozamia mixeorum | Chemnick & T.J. Greg. & S. Salas-Mor. | Zamiaceae | 4 | 9, 10 |
| Ceratozamia moretii | Vazques Torres & Vovides | Zamiaceae | 4 | 9, 10 |
| Ceratozamia norstogii | D.W. Stev. | Zamiaceae | 4 | 9, 10 |
| Ceratozamia robusta | Miq. | Zamiaceae | 4 | 9, 10 |
| Ceratozamia sabatoi | Vovides, Vazques Torres, Schutzman & Iglesias | Zamiaceae | 4 | 9, 10 |
| Ceratozamia whitelockiana | Chemnick & T.J. Greg | Zamiaceae | 4 | 9, 10 |
| Ceratozamia zaragozae | Medellin-Leal | Zamiaceae | 4 | 9, 10 |
| Ceratozamia zoquensis | M.A. Perez-Farrera | Zamiaceae | 4 | 9, 10 |
| Chigua bernalii | D.W. Stev. | Zamiaceae | 4 | 9, 10 |
| Chigua restrepoi | D.W. Stev | Zamiaceae | 4 | 9, 10 |
| Dioon angustifolium | Miquel | Zamiaceae | 4 | 9, 10 |
| Dioon califanoi | De Luca & Sabato | Zamiaceae | 4 | 9, 10 |
| Dioon caputoi | De Luca, Sabato & Vásq. Torres | Zamiaceae | 4 | 9, 10 |
| Dioon edule | Lindley | Zamiaceae | 4 | 9, 10 |
| Dioon holmgrenii | De Luca, Sabato & Vásq. Torres | Zamiaceae | 4 | 9, 10 |
| Dioon mejiae | Standl. & L.O. Williams | Zamiaceae | 4 | 9, 10 |
| Dioon merolae | De Luca, Sabato & Vásq. Torres | Zamiaceae | 4 | 9, 10 |
| Dioon purpusii | Rose | Zamiaceae | 4 | 9, 10 |
| Dioon rzedowskii | De Luca, A. Moretti, Sabato & Vásq. Torres | Zamiaceae | 4 | 9, 10 |
| Dioon sonorensis | (De Luca, Sabato & Vázq. Torres) Chemnick & T.J. | Zamiaceae | 4 | 9, 10 |
| Dioon spinulosum | Dyer ex Eichler, Gart. | Zamiaceae | 4 | 9, 10 |
| Dioon tomasellii | De Luca, Sabato & Vázq. Torres | Zamiaceae | 4 | 9, 10 |
| Encephalartos aemulans | Vorster | Zamiaceae | 4 | 9, 10 |
| Encephalartos altensteinii | Lehmann | Zamiaceae | 4 | 9, 10 |
| Encephalartos aplanatus | Vorster | Zamiaceae | 4 | 9, 10 |
| Encephalartos arenarius | R. Dyer | Zamiaceae | 4 | 9, 10 |
| Encephalartos barberi | Carruthers | Zamiaceae | 4 | 9, 10 |
| Encephalartos brevifoliolatus | Vorster | Zamiaceae | 4 | 9, 10 |
| Encephalartos bubalinus | Melville | Zamiaceae | 4 | 9, 10 |
| Encephalartos caffer | (Thunberg) Lehmann | Zamiaceae | 4 | 9, 10 |
| Encephalartos cerinus | Lavranos & Goode | Zamiaceae | 4 | 9, 10 |
| Encephalartos chimanimaniensis | R. Dyer & Verdoorn | Zamiaceae | 4 | 9, 10 |
| Encephalartos concinnus | R. Dyer & Verdoorn | Zamiaceae | 4 | 9, 10 |
| Encephalartos cupidus | R. Dyer | Zamiaceae | 4 | 9, 10 |
| Encephalartos cycadifolius | (Jacquin) Lehmann | Zamiaceae | 4 | 9, 10 |
| Encephalartos delucanus | Malaisse, Sclavo & Crosiers | Zamiaceae | 4 | 9, 10 |
| Encephalartos dolomiticus | Lavranos & Goode | Zamiaceae | 4 | 9, 10 |
| Encephalartos dyerianus | Lavranos & Goode | Zamiaceae | 4 | 9, 10 |
| Encephalartos equatorialis | Hurter | Zamiaceae | 4 | 9, 10 |
| Encephalartos eugene-maraisii | Verdoorn | Zamiaceae | 4 | 9, 10 |
| Encephalartos ferox | Bertoloni | Zamiaceae | 4 | 9, 10 |
| Encephalartos friderici-guilielmi | Lehmann | Zamiaceae | 4 | 9, 10 |
| Encephalartos ghellinckii | Lemaire | Zamiaceae | 4 | 9, 10 |
| Encephalartos gratus | Prain | Zamiaceae | 3 | 9, 10 |
| Encephalartos heenanii | R. Dyer | Zamiaceae | 4 | 9, 10 |

Appendix S1: Gymnosperms and their relation to water – detailed table including all 986 studied taxa.

| | | | | |
|-------------------------------|------------------------------------|-----------|---|-------|
| Encephalartos hildebrandtii | Braun & Bouché | Zamiaceae | 4 | 9, 10 |
| Encephalartos hirsutus | Hurter | Zamiaceae | 4 | 9, 10 |
| Encephalartos horridus | (Jacquin) Lehmann | Zamiaceae | 4 | 9, 10 |
| Encephalartos humilis | Verdoorn | Zamiaceae | 4 | 9, 10 |
| Encephalartos inopinus | R. Dyer | Zamiaceae | 4 | 9, 10 |
| Encephalartos ituriensis | Bamps & Lisowski | Zamiaceae | 4 | 9, 10 |
| Encephalartos kisambo | Faden & Beentje | Zamiaceae | 4 | 9, 10 |
| Encephalartos laevifolius | Stapf & Burtt Davy | Zamiaceae | 4 | 9, 10 |
| Encephalartos lanatus | Stapf & Burtt Davy | Zamiaceae | 4 | 9, 10 |
| Encephalartos latifrons | Lehmann | Zamiaceae | 4 | 9, 10 |
| Encephalartos laurentianus | Dewildman | Zamiaceae | 3 | 9, 10 |
| Encephalartos lebomboensis | Verdoorn | Zamiaceae | 4 | 9, 10 |
| Encephalartos lehmannii | Lehmann | Zamiaceae | 4 | 9, 10 |
| Encephalartos longifolius | (Jacquin) Lehmann | Zamiaceae | 4 | 9, 10 |
| Encephalartos macrostrobilus | S. Jones & Wynants | Zamiaceae | 3 | 9, 10 |
| Encephalartos manikensis | (Gilliland) Gilliland | Zamiaceae | 4 | 9, 10 |
| Encephalartos marunguensis | Devred | Zamiaceae | 4 | 9, 10 |
| Encephalartos middelburgensis | Vorster | Zamiaceae | 4 | 9, 10 |
| Encephalartos msinganus | Vorster | Zamiaceae | 4 | 9, 10 |
| Encephalartos munchii | R. Dyer & Verdoorn | Zamiaceae | 4 | 9, 10 |
| Encephalartos natalensis | R. Dyer & Verdoorn | Zamiaceae | 4 | 9, 10 |
| Encephalartos ngoyanus | Verdoorn | Zamiaceae | 4 | 9, 10 |
| Encephalartos nubimontanus | Hurter | Zamiaceae | 4 | 9, 10 |
| Encephalartos paucidentatus | Stapf & Burtt Davy | Zamiaceae | 3 | 9, 10 |
| Encephalartos poggei | Ascherson | Zamiaceae | 4 | 9, 10 |
| Encephalartos princeps | R. Dyer | Zamiaceae | 4 | 9, 10 |
| Encephalartos pterogonus | R. Dyer & Verdoorn | Zamiaceae | 4 | 9, 10 |
| Encephalartos schajjesii | Malaisse, Sclavo & Crosiers | Zamiaceae | 4 | 9, 10 |
| Encephalartos schmitzii | Malaisse | Zamiaceae | 4 | 9, 10 |
| Encephalartos sclavoi | Deluca, Stevenson & Moretti | Zamiaceae | 4 | 9, 10 |
| Encephalartos senticosus | Vorster | Zamiaceae | 4 | 9, 10 |
| Encephalartos septentrionalis | Schweinfurth | Zamiaceae | 4 | 9, 10 |
| Encephalartos tegulaneus | Melville | Zamiaceae | 4 | 9, 10 |
| Encephalartos transvenosus | Stapf & Burtt Davy | Zamiaceae | 4 | 9, 10 |
| Encephalartos trispinosus | (J. Hooker) R. Dyer | Zamiaceae | 4 | 9, 10 |
| Encephalartos turneri | Lavranos & Goode | Zamiaceae | 4 | 9, 10 |
| Encephalartos umbeluziensis | R. Dyer | Zamiaceae | 3 | 9, 10 |
| Encephalartos villosus | Lemaire | Zamiaceae | 4 | 9, 10 |
| Encephalartos whitelockii | Hurter | Zamiaceae | 4 | 9, 10 |
| Encephalartos woodii | Sander | Zamiaceae | 4 | 9, 10 |
| Lepidozamia hopei | Regel | Zamiaceae | 3 | 9, 10 |
| Lepidozamia peroffskyana | Regel | Zamiaceae | 4 | 9, 10 |
| Macrozamia cardiaca | P. I. Forster & D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia communis | Johnson | Zamiaceae | 4 | 9, 10 |
| Macrozamia concinna | D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia conferta | D. Jones & P. I. Forster | Zamiaceae | 4 | 9, 10 |
| Macrozamia cranei | D. Jones & P. I. Forster | Zamiaceae | 3 | 9, 10 |
| Macrozamia crassifolia | D. Jones & P. I. Forster | Zamiaceae | 4 | 9, 10 |
| Macrozamia diplomera | (Mueller) Johnson | Zamiaceae | 4 | 9, 10 |
| Macrozamia douglasii | W. Hill Ex Bailey | Zamiaceae | 3 | 9, 10 |
| Macrozamia dyeri | (Mueller) Gardner | Zamiaceae | 4 | 9, 10 |
| Macrozamia elegans | K. Hill & D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia fawcettii | C. Moore | Zamiaceae | 3 | 9, 10 |
| Macrozamia fearnsidei | D. Jones | Zamiaceae | 3 | 9, 10 |
| Macrozamia flexuosa | C. Moore | Zamiaceae | 4 | 9, 10 |
| Macrozamia fraseri | Miquel | Zamiaceae | 4 | 9, 10 |
| Macrozamia glaucophylla | D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia heteromera | C. Moore | Zamiaceae | 3 | 9, 10 |
| Macrozamia humilis | D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia johnsonii | D. Jones & K. Hill | Zamiaceae | 4 | 9, 10 |
| Macrozamia lomandroides | D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia longispina | P. I. Forster & D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia lucida | Johnson | Zamiaceae | 4 | 9, 10 |
| Macrozamia macdonnellii | (Mueller ex Miquel) A. de Candolle | Zamiaceae | 3 | 9, 10 |
| Macrozamia machinii | P. I. Forster & D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia macleayi | Miquel | Zamiaceae | 4 | 9, 10 |
| Macrozamia miquelii | (Mueller) A. de Candolle | Zamiaceae | 3 | 9, 10 |
| Macrozamia montana | K. Hill | Zamiaceae | 4 | 9, 10 |
| Macrozamia moorei | Mueller | Zamiaceae | 4 | 9, 10 |
| Macrozamia mountperriensis | Bailey | Zamiaceae | 4 | 9, 10 |
| Macrozamia occidua | D. Jones & P. I. Forster | Zamiaceae | 4 | 9, 10 |
| Macrozamia parcifolia | P. I. Forster & D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia pauli-guilielmi | W. Hill & Mueller | Zamiaceae | 4 | 9, 10 |
| Macrozamia platyrhachis | Bailey | Zamiaceae | 4 | 9, 10 |
| Macrozamia plurinervia | (Johnson) D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia polymorpha | D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia reducta | K. Hill & D. Jones | Zamiaceae | 4 | 9, 10 |
| Macrozamia riedlei | (Fischer ex Gaudichaud) Gardner | Zamiaceae | 4 | 9, 10 |
| Macrozamia secunda | (Bentham) C. Moore | Zamiaceae | 4 | 9, 10 |
| Macrozamia serpentina | D. Jones & P. I. Forster | Zamiaceae | 4 | 9, 10 |
| Macrozamia spiralis | (Salisbury) Miquel | Zamiaceae | 4 | 9, 10 |
| Macrozamia stenomera | Johnson | Zamiaceae | 3 | 9, 10 |
| Macrozamia viridis | D. Jones & P. I. Forster | Zamiaceae | 4 | 9, 10 |
| Microcyacas calocoma | (Miquel) A. de Candolle | Zamiaceae | 4 | 9, 10 |
| Zamia acuminata | Ørsted ex W. Dyer | Zamiaceae | 4 | 9, 10 |

Appendix S1: Gymnosperms and their relation to water – detailed table including all 986 studied taxa.

| | | | | |
|------------------------|--------------------------------------|-----------|---|-------|
| Zamia amazonum | Stevenson, Ined. | Zamiaceae | 4 | 9, 10 |
| Zamia amblyphyllidia | Stevenson | Zamiaceae | 4 | 9, 10 |
| Zamia amplifolia | Bull ex Masters | Zamiaceae | 4 | 9, 10 |
| Zamia angustifolia | Jacquin | Zamiaceae | 4 | 9, 10 |
| Zamia boliviana | (Brongniart) A. de Candolle | Zamiaceae | 4 | 9, 10 |
| Zamia chigua | Seemann | Zamiaceae | 3 | 9, 10 |
| Zamia cremnophila | Vovides, Schutzman & Dehgan | Zamiaceae | 4 | 9, 10 |
| Zamia cunaria | Dressler & Stevenson | Zamiaceae | 4 | 9, 10 |
| Zamia disodon | Stevenson & Sabato, Ined. | Zamiaceae | 4 | 9, 10 |
| Zamia dressleri | Stevenson | Zamiaceae | 4 | 9, 10 |
| Zamia elegantissima | Schutzman, Vovides & Adams | Zamiaceae | 4 | 9, 10 |
| Zamia encephalartoides | Stevenson | Zamiaceae | 4 | 9, 10 |
| Zamia fairchildiana | Gómez | Zamiaceae | 4 | 9, 10 |
| Zamia fischeri | Miquel | Zamiaceae | 4 | 9, 10 |
| Zamia furfuracea | Linnaeus F. | Zamiaceae | 4 | 9, 10 |
| Zamia gentryi | Dodson | Zamiaceae | 4 | 9, 10 |
| Zamia herrerae | Calderon & Standley | Zamiaceae | 4 | 9, 10 |
| Zamia hymenophyllidia | Stevenson, Ined. | Zamiaceae | 4 | 9, 10 |
| Zamia inermis | Vovides, Rees & Vazquez Torres | Zamiaceae | 4 | 9, 10 |
| Zamia integrifolia | Linnaeus F. | Zamiaceae | 4 | 9, 10 |
| Zamia ipetiensis | Stevenson | Zamiaceae | 4 | 9, 10 |
| Zamia lacandona | Schutzman & Vovides | Zamiaceae | 4 | 9, 10 |
| Zamia lecointei | Ducke | Zamiaceae | 4 | 9, 10 |
| Zamia loddigesii | Miquel | Zamiaceae | 4 | 9, 10 |
| Zamia manicata | Linden ex Regel | Zamiaceae | 4 | 9, 10 |
| Zamia melanorrhachis | Stevenson, Ined. | Zamiaceae | 4 | 9, 10 |
| Zamia montana | Braun | Zamiaceae | 4 | 9, 10 |
| Zamia monticola | Chamberlain | Zamiaceae | 4 | 9, 10 |
| Zamia muricata | Willdenow | Zamiaceae | 4 | 9, 10 |
| Zamia neurophyllidia | tevenson | Zamiaceae | 4 | 9, 10 |
| Zamia obliqua | Braun | Zamiaceae | 4 | 9, 10 |
| Zamia paucijuga | Wieland | Zamiaceae | 4 | 9, 10 |
| Zamia poeppigiana | Martius & Eichler | Zamiaceae | 4 | 9, 10 |
| Zamia polymorpha | Stevenson, Moretti & Gaudio | Zamiaceae | 4 | 9, 10 |
| Zamia portoricensis | Urban | Zamiaceae | 4 | 9, 10 |
| Zamia prasina | Bull | Zamiaceae | 4 | 9, 10 |
| Zamia pseudoparasitica | Yates | Zamiaceae | 4 | 9, 10 |
| Zamia pumila | Linnaeus | Zamiaceae | 4 | 9, 10 |
| Zamia purpurea | Vovides, Rees & Vazquez Torres | Zamiaceae | 4 | 9, 10 |
| Zamia pygmaea | Sims | Zamiaceae | 4 | 9, 10 |
| Zamia roezlii | Linden | Zamiaceae | 3 | 9, 10 |
| Zamia skinneri | Warscewicz ex Dietrich | Zamiaceae | 4 | 9, 10 |
| Zamia soconuscensis | Schutzman, Vovides & Adams | Zamiaceae | 4 | 9, 10 |
| Zamia spartea | A. de Candolle | Zamiaceae | 4 | 9, 10 |
| Zamia standleyi | Schutzman | Zamiaceae | 4 | 9, 10 |
| Zamia tuerckheimii | J. Smith | Zamiaceae | 4 | 9, 10 |
| Zamia ulei | Dammer | Zamiaceae | 4 | 9, 10 |
| Zamia urep | Small | Zamiaceae | 4 | 9, 10 |
| Zamia variegata | Warscewicz | Zamiaceae | 4 | 9, 10 |
| Zamia vazquezii | Stevenson, Sabato, Moretti & de Luca | Zamiaceae | 4 | 9, 10 |
| Zamia verschaffeltii | Miquel | Zamiaceae | 4 | 9, 10 |
| Zamia wallisii | Veitch ex Braun | Zamiaceae | 4 | 9, 10 |

Legend:

| | |
|-------|------------|
| taxon | category 4 |
| taxon | category 3 |
| taxon | category 2 |
| taxon | category 1 |

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