

Table S2

The final database of 88 studies (100 measurements, 44 species, 1981–2026) on sex-specific responses of dioecious plants to warming, drought, and combined warming and drought stress. Direction of sexual difference: Female = female advantage (females outperform males); Male = male advantage (males outperform females); Mixed = the direction depends on the trait or treatment level; None = no significant sex difference.

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
1	Hultine KR, Burtch KG, Ehleringer JR. 2013. Gender specific patterns of carbon uptake and water use in a dominant riparian tree species exposed to a warming climate. <i>Global Change Biology</i> 19:3390–3405. https://doi.org/10.1111/gcb.12230	<i>Acer negundo</i>	Tree	Warming	Male
2	Dawson TE, Ehleringer JR. 1993. Gender-specific physiology, carbon isotope discrimination, and habitat distribution in boxelder, <i>Acer-negundo</i> . <i>Ecology</i> 74:798–815. https://doi.org/10.2307/1940807	<i>Acer negundo</i>	Tree	Drought	Male
3	Dawson TE, Ward JK, Ehleringer JR. 2004. Temporal scaling of physiological responses from gas exchange to tree rings:: a gender-specific study of <i>Acer negundo</i> (Boxelder) growing under different conditions. <i>Functional Ecology</i> 18:212–222. https://doi.org/10.1111/j.0269-8463.2004.00838.x	<i>Acer negundo</i>	Tree	Drought	Male

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
4	García-Barreda S, Sangüesa-Barreda G, García-González MD, Camarero JJ. 2022. Sex and tree rings: females neither grow less nor are less water-use efficient than males in four dioecious tree species. <i>Dendrochronologia</i> 73:125944. https://doi.org/10.1016/j.dendro.2022.125944	<i>Ailanthus altissima</i>	Tree	Drought	None
5	Beltrán-Rodríguez L, Romero-Manzanares A, Borja-de la Rosa MA, Valdez-Hernández JI, Luna-Cavazos M, Blancas-Vázquez J. 2022. Adaptive advantages of wood anatomical-hydraulic features linked to sex in a tropical dioecious species. <i>Trees-Structure and Function</i> 36:39–52. https://doi.org/10.1007/s00468-021-02258-w	<i>Amphipterygium adstringens</i>	Tree	Drought	Female
6	Piraino S, Hadad MA, Ribas-Fernández YA, Roig FA. 2024. Sex-dependent resilience to extreme drought events: implications for climate change adaptation of a South American endangered tree species. <i>Ecological Processes</i> 13:24. https://doi.org/10.1186/s13717-024-00505-9	<i>Araucaria araucana</i>	Tree	Drought	None
7	Rozas V, Le Quesne C, Rojas-Badilla M, González-Reyes A, Donoso S, Olano JM. 2019. Climatic cues for secondary growth and cone production are sex-dependent in the long-lived dioecious conifer <i>Araucaria araucana</i> . <i>Agricultural and Forest Meteorology</i> 274:132–143. https://doi.org/10.1016/j.agrformet.2019.05.003	<i>Araucaria araucana</i>	Tree	Drought	Mixed

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
8	El Mujtar VA, Perdomo MH, Gallo LA, Grau O. 2012. Sex-related difference in susceptibility to cypress mortality in <i>Austrocedrus chilensis</i> from Northwestern Patagonia (Argentina). <i>Bosque</i> 33:221–226. https://doi.org/10.4067/S0717-92002012000200012	<i>Austrocedrus chilensis</i>	Tree	Drought	Male
9	Gao LS, Zhang CY, Zhao XH, Gadow KV. 2010. Gender-related climate response of radial growth in dioecious <i>Fraxinus mandshurica</i> trees. <i>Tree-Ring Research</i> 66:105–112. https://doi.org/10.3959/2009-5.1	<i>Fraxinus mandshurica</i>	Tree	Drought	None
10	He M, Shi DW, Wei XD, Hu Y, Wang T, Xie YF. 2016. Gender-related differences in adaptability to drought stress in the dioecious tree <i>Ginkgo biloba</i> . <i>Acta Physiologiae Plantarum</i> 38:124. https://doi.org/10.1007/s11738-016-2148-0	<i>Ginkgo biloba</i>	Tree	Drought	Female
11	Garcia-Barreda S, Sangüesa-Barreda G, García-González MD, Camarero JJ. 2022. Sex and tree rings: females neither grow less nor are less water-use efficient than males in four dioecious tree species. <i>Dendrochronologia</i> 73:125944. https://doi.org/10.1016/j.dendro.2022.125944	<i>Ilex aquifolium</i>	Tree	Drought	None
12	Retuerto R, Lema BF, Roiloa SR, Obeso JR. 2000. Gender, light and water effects in carbon isotope discrimination, and growth rates in the dioecious tree <i>Ilex aquifolium</i> . <i>Functional Ecology</i> 14:529–537. https://doi.org/10.1046/j.1365-2435.2000.00454.x	<i>Ilex aquifolium</i>	Tree	Drought	Female

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
13	Vilas JS, Hernández-Alonso H, Rozas V, Retuerto R. 2024. Differential growth rate, water-use efficiency and climate sensitivity between males and females of <i>Ilex aquifolium</i> in north-western Spain. <i>Annals of Botany</i> 135:357–370. https://doi.org/10.1093/aob/mcae126	<i>Ilex aquifolium</i>	Tree	Drought	Male
14	Garcia-Barreda S, Sangüesa-Barreda G, García-González MD, Camarero JJ. 2022. Sex and tree rings: Females neither grow less nor are less water-use efficient than males in four dioecious tree species. <i>Dendrochronologia</i> 73:125944. https://doi.org/10.1016/j.dendro.2022.125944	<i>Juniperus thurifera</i>	Tree	Drought	None
15	Olano JM, García-Cervigón AI, Arzac A, Rozas V. 2015. Intra-annual wood density fluctuations and tree-ring width patterns are sex- and site-dependent in the dioecious conifer <i>Juniperus thurifera</i> L. <i>Trees-Structure and Function</i> 29:1341–1353. https://doi.org/10.1007/s00468-015-1212-5	<i>Juniperus thurifera</i>	Tree	Drought	Mixed
16	Olano JM, González-Muñoz N, Arzac A, Rozas V, von Arx G, Delzon S, García-Cervigón AI. 2017. Sex determines xylem anatomy in a dioecious conifer: hydraulic consequences in a drier world. <i>Tree Physiology</i> 37:1493–1502. https://doi.org/10.1093/treephys/tpx066	<i>Juniperus thurifera</i>	Tree	Drought	Male

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
17	Rozas V, DeSoto L, Olano JM. 2009. Sex-specific, age-dependent sensitivity of tree-ring growth to climate in the dioecious tree <i>Juniperus thurifera</i> . <i>New Phytologist</i> 182:687–697. https://doi.org/10.1111/j.1469-8137.2009.02770.x	<i>Juniperus thurifera</i>	Tree	Drought	Male
18	Gao M, Zhao YX, Chen YC, Wang YD. 2025. Drought stress drives sex-specific physiological and biochemical differences in female and male <i>Litsea cubeba</i> . <i>Horticulturae</i> 11:594. https://doi.org/10.3390/horticulturae11060594	<i>Litsea cubeba</i>	Tree	Drought	Female
19	Zhang CY, Chen MH, Liu G, Huang GQ, Wang Y, Yang S, Xu X. 2020. Enhanced UV-B radiation aggravates negative effects more in females than in males of <i>Morus alba</i> saplings under drought stress. <i>Environmental and Experimental Botany</i> 169:103903. https://doi.org/10.1016/j.envexpbot.2019.103903	<i>Morus alba</i>	Tree	Drought	Male
20	Garcia-Barreda S, Sangüesa-Barreda G, García-González MD, Camarero JJ. 2022. Sex and tree rings: Females neither grow less nor are less water-use efficient than males in four dioecious tree species. <i>Dendrochronologia</i> 73:125944. https://doi.org/10.1016/j.dendro.2022.125944	<i>Pistacia terebinthus</i>	Tree	Drought	Male
21	Rodríguez-Ramírez EC, Terrazas T. 2025. Concatenating latewood blue intensity and wood anatomical sensitivity in Neotropical montane podocarps: How does sex-related climate trigger tracheid plasticity?. <i>Dendrochronologia</i> 90:126298. https://doi.org/10.1016/j.dendro.2025.126298	<i>Podocarpus matudae</i>	Tree	Drought	Mixed

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
22	Chen J, Liu Q, Yu L, Korpelainen H, Niinemets Ü, Li CY. 2021. Elevated temperature and CO ₂ interactively modulate sexual competition and ecophysiological responses of dioecious <i>Populus cathayana</i> . Forest Ecology and Management 481:118747. https://doi.org/10.1016/j.foreco.2020.118747	<i>Populus cathayana</i>	Tree	Warming	Male
23	Dong TF, Zhang R, Liu JY, Fowler JC, Miller TEX, Xu X. 2021. Warming alters sex-specific responses in leaf defense against insect herbivory in <i>Populus cathayana</i> . Environmental and Experimental Botany 189:104557. https://doi.org/10.1016/j.envexpbot.2021.104557	<i>Populus cathayana</i>	Tree	Warming	Male
24	Liao J, Cai ZY, Song HF, Zhang S. 2020. Poplar males and willow females exhibit superior adaptation to nocturnal warming than the opposite sex. Science of the Total Environment 717:137179. https://doi.org/10.1016/j.scitotenv.2020.137179	<i>Populus cathayana</i>	Tree	Warming	Male
25	Liu JY, Zhang R, Xu X, Fowler JC, Miller TEX, Dong TF. 2020. Effect of summer warming on growth, photosynthesis and water status in female and male <i>Populus cathayana</i> : implications for sex-specific drought and heat tolerances. Tree Physiology 40:1178–1191. https://doi.org/10.1093/treephys/tpaa069	<i>Populus cathayana</i>	Tree	Warming	Female

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
26	Xu X, Yang F, Xiao XW, Zhang S, Korpelainen H, Li CY. 2008. Sex-specific responses of <i>Populus cathayana</i> to drought and elevated temperatures. Plant Cell and Environment 31:850–860. https://doi.org/10.1111/j.1365-3040.2008.01799.x	<i>Populus cathayana</i>	Tree	Warming	Female
27	Xu XA, Peng GQ, Wu CC, Han QM. 2010. Global warming induces female cuttings of <i>Populus cathayana</i> to allocate more biomass, C and N to aboveground organs than do male cuttings. Australian Journal of Botany 58:519–526. https://doi.org/10.1071/BT10108	<i>Populus cathayana</i>	Tree	Warming	Female
28	Yu L, Han Y, Jiang YL, Dong TF, Lei YB. 2018. Sex-specific responses of bud burst and early development to nongrowing season warming and drought in <i>Populus cathayana</i> . Canadian Journal of Forest Research 48:68–76. https://doi.org/10.1139/cjfr-2017-0259	<i>Populus cathayana</i>	Tree	Warming	Mixed
29	Zhao HX, Li YP, Zhang XL, Korpelainen H, Li CY. 2012. Sex-related and stage-dependent source-to-sink transition in <i>Populus cathayana</i> grown at elevated CO ₂ and elevated temperature. Tree Physiology 32:1325–1338. https://doi.org/10.1093/treephys/tps074	<i>Populus cathayana</i>	Tree	Warming	Mixed
30	Han Y, Wang L, Zhang XL, Korpelainen H, Li CY. 2013. Sexual differences in photosynthetic activity, ultrastructure and phytoremediation potential of <i>Populus cathayana</i> exposed to lead and drought. Tree Physiology 33:1043–1060. https://doi.org/10.1093/treephys/tpt086	<i>Populus cathayana</i>	Tree	Drought	Male

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
31	Han Y, Wang YH, Jiang H, Wang ML, Korpelainen H, Li CY. 2013. Reciprocal grafting separates the roles of the root and shoot in sex-related drought responses in <i>Populus cathayana</i> males and females. Plant Cell and Environment 36:356–364. https://doi.org/10.1111/j.1365-3040.2012.02578.x	<i>Populus cathayana</i>	Tree	Drought	Male
32	Li Z, Wu N, Liu T, Chen H, Tang M. 2015. Sex-related responses of <i>Populus cathayana</i> shoots and roots to am fungi and drought stress. Plos One 10:e0128841. https://doi.org/10.1371/journal.pone.0128841	<i>Populus cathayana</i>	Tree	Drought	Male
33	Li Z, Wu N, Liu T, Tang M, Chen H. 2020. Gender-related responses of dioecious plant <i>Populus cathayana</i> to AMF, drought and planting pattern. Scientific Reports 10:11530. https://doi.org/10.1038/s41598-020-68112-0	<i>Populus cathayana</i>	Tree	Drought	Male
34	Liu M, Zhao Y, Wang YT, Korpelainen H, Li CY. 2022. Stem xylem traits and wood formation affect sex-specific responses to drought and rewatering in <i>Populus cathayana</i> . Tree Physiology 42:1350–1363. https://doi.org/10.1093/treephys/tpac011	<i>Populus cathayana</i>	Tree	Drought	Male
35	Tang SL, Lin XZ, Li W, Guo CJ, Han JA, Yu L. 2023. Nutrient resorption responses of female and male <i>Populus cathayana</i> to drought and shade stress. Physiologia Plantarum 175:e13980. https://doi.org/10.1111/ppl.13980	<i>Populus cathayana</i>	Tree	Drought	Male

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
36	Tang SL, Wu JN, Liu WJ, Wu CS, Yu L. 2026. Sex-specific hydraulic and anatomical strategies underpin differential drought and shade tolerance in <i>Populus cathayana</i> . Tree Physiology 46:tpag038. https://doi.org/10.1093/treephys/tpag038	<i>Populus cathayana</i>	Tree	Drought	Male
37	Xia ZC, He Y, Zhou B, Korpelainen H, Li CY. 2020. Sex-related responses in rhizosphere processes of dioecious <i>Populus cathayana</i> exposed to drought and low phosphorus stress. Environmental and Experimental Botany 175:104049. https://doi.org/10.1016/j.envexpbot.2020.104049	<i>Populus cathayana</i>	Tree	Drought	Male
38	Xu X, Peng GQ, Wu CC, Korpelainen H, Li CY. 2008. Drought inhibits photosynthetic capacity more in females than in males of <i>Populus cathayana</i> . Tree Physiology 28:1751–1759. https://doi.org/10.1093/treephys/28.11.1751	<i>Populus cathayana</i>	Tree	Drought	Male
39	Xu X, Yang F, Xiao XW, Zhang S, Korpelainen H, Li CY. 2008. Sex-specific responses of <i>Populus cathayana</i> to drought and elevated temperatures. Plant Cell and Environment 31:850–860. https://doi.org/10.1111/j.1365-3040.2008.01799.x	<i>Populus cathayana</i>	Tree	Drought	Male
40	Yu L, Han Y, Jiang YL, Dong TF, Lei YB. 2018. Sex-specific responses of bud burst and early development to nongrowing season warming and drought in <i>Populus cathayana</i> . Canadian Journal of Forest Research 48:68–76. https://doi.org/10.1139/cjfr-2017-0259	<i>Populus cathayana</i>	Tree	Drought	Male

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
41	Liu JY, Zhang R, Xu X, Fowler JC, Miller TEX, Dong TF. 2020. Effect of summer warming on growth, photosynthesis and water status in female and male <i>Populus cathayana</i> : implications for sex-specific drought and heat tolerances. Tree Physiology 40:1178–1191. https://doi.org/10.1093/treephys/tpaa069	<i>Populus cathayana</i>	Tree	Combined	Male
42	Xu X, Yang F, Xiao XW, Zhang S, Korpelainen H, Li CY. 2008. Sex-specific responses of <i>Populus cathayana</i> to drought and elevated temperatures. Plant Cell and Environment 31:850–860. https://doi.org/10.1111/j.1365-3040.2008.01799.x	<i>Populus cathayana</i>	Tree	Combined	Male
43	Yu L, Han Y, Jiang YL, Dong TF, Lei YB. 2018. Sex-specific responses of bud burst and early development to nongrowing season warming and drought in <i>Populus cathayana</i> . Canadian Journal of Forest Research 48:68–76. https://doi.org/10.1139/cjfr-2017-0259	<i>Populus cathayana</i>	Tree	Combined	Mixed
44	He F, Wu ZQ, Zhao ZB, Chen G, Wang XG, Cui XL, Zhu TH, Chen LH, Yang P, Bi LF, Lin TT. 2022. Drought stress drives sex-specific differences in plant resistance against herbivores between male and female poplars through changes in transcriptional and metabolic profiles. Science of the Total Environment 845:157171. https://doi.org/10.1016/j.scitotenv.2022.157171	<i>Populus deltoides</i>	Tree	Drought	Male

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
45	Lin TT, Tang JY, Li SY, Li SJ, Han S, Liu YG, Yang CL, Chen G, Chen LH, Zhu TH. 2023. Drought stress-mediated differences in phyllosphere microbiome and associated pathogen resistance between male and female poplars. <i>Plant Journal</i> 115:1100–1113. https://doi.org/10.1111/tpj.16283	<i>Populus deltoides</i>	Tree	Drought	Male
46	Lin TT, Wu ZQ, Shi YJ, Yang P, Wang T, Cui XL, Hou GR, Chen G, Xie JL, Cao GX, Chen LH, He F. 2023. Male and female poplars exhibited sex-specific differences in metabolic and transcriptional responses to two levels of water deficit. <i>Industrial Crops and Products</i> 196:116441. https://doi.org/10.1016/j.indcrop.2023.116441	<i>Populus deltoides</i>	Tree	Drought	Male
47	Chen BB, Zhai JT, Sun JJ, Cui YF, Ali W, Xia ZC. 2026. Phyllosphere-specific fungal phylotypes enhance drought resistance to maintain functional stability in <i>Populus euphratica</i> . <i>Plant and Soil</i> 521:639–652. https://doi.org/10.1007/s11104-026-08412-y	<i>Populus euphratica</i>	Tree	Drought	Male
48	Liu M, Ye LY, Chen LL, Korpelainen H, Niinemets Ü, Li CY. 2024. Sex-specific phosphorus acquisition strategies and cycling in dioecious <i>Populus euphratica</i> forests along a natural water availability gradient. <i>Plant Cell and Environment</i> 47:3266–3281. https://doi.org/10.1111/pce.14951	<i>Populus euphratica</i>	Tree	Drought	Male

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
49	Xia ZC, He Y, Zhu ZD, Korpelainen H, Li CY. 2022. Covariations and trade-offs of phosphorus (P) acquisition strategies in dioecious <i>Populus euphratica</i> as affected by soil water availability. Functional Ecology 36:3188–3199. https://doi.org/10.1111/1365-2435.14193	<i>Populus euphratica</i>	Tree	Drought	Male
50	Yu L, Dai HX, Fang LD, Korpelainen H, Niinemets Ü, Li CY. 2025. Sex-specific non-structural carbohydrate variation and hydraulics explain differences in drought resistance of <i>Populus euphratica</i> females and males along an aridity gradient. Functional Ecology 39:2925–2939. https://doi.org/10.1111/1365-2435.70160	<i>Populus euphratica</i>	Tree	Drought	Male
51	Yu L, Huang ZD, Tang SL, Korpelainen H, Li CY. 2023. <i>Populus euphratica</i> males exhibit stronger drought and salt stress resistance than females br. Environmental and Experimental Botany 205:105114. https://doi.org/10.1016/j.envexpbot.2022.105114	<i>Populus euphratica</i>	Tree	Drought	Male
52	Zhou HH, Ye ZX, Yang YH, Zhu CG. 2024. Drought stress might induce sexual spatial segregation in dioecious <i>Populus euphratica</i> -insights from long-term water use efficiency and growth rates. Biology-Basel 13:318. https://doi.org/10.3390/biology13050318	<i>Populus euphratica</i>	Tree	Drought	Male
53	Lu YW, Miao XL, Song QY, Peng SM, Duan BL. 2018. Morphological and ecophysiological plasticity in dioecious plant <i>Populus tomentosa</i> under drought and alkaline stresses. Photosynthetica 56:1353–1364. https://doi.org/10.1007/s11099-018-0846-0	<i>Populus tomentosa</i>	Tree	Drought	Male

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
54	Randriamanana TR, Lavola A, Julkunen-Tiitto R. 2015. Interactive effects of supplemental UV-B and temperature in European aspen seedlings: Implications for growth, leaf traits, phenolic defense and associated organisms. <i>Plant Physiology and Biochemistry</i> 93:84–93. https://doi.org/10.1016/j.plaphy.2015.03.001	<i>Populus tremula</i>	Tree	Warming	Female
55	Sobuj N, Virjamo V, Nissinen K, Sivadasan U, Mehtätalo L, Nybakken L, Peltola H, Julkunen-Tiitto R. 2020. Responses in growth and phenolics accumulation to lateral bud removal in male and female saplings of <i>Populus tremula</i> (L.) under simulated climate change. <i>Science of the Total Environment</i> 704:135462. https://doi.org/10.1016/j.scitotenv.2019.135462	<i>Populus tremula</i>	Tree	Warming	None
56	Sobuj N, Virjamo V, Zhang YD, Nybakken L, Julkunen-Tiitto R. 2018. Impacts of elevated temperature and CO ₂ concentration on growth and phenolics in the sexually dimorphic <i>Populus tremula</i> (L.). <i>Environmental and Experimental Botany</i> 146:34–44. https://doi.org/10.1016/j.envexpbot.2017.08.003	<i>Populus tremula</i>	Tree	Warming	None
57	Silva RDD, Thomas BR. 2026. Family and sex-related responses of aspen (<i>Populus tremuloides</i> Michx.) seedlings to drought stress. <i>Forest Ecology and Management</i> 619:124064. https://doi.org/10.1016/j.foreco.2026.124064	<i>Populus tremuloides</i>	Tree	Drought	None

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
58	Chen FG, Gong Y, Liu SY, Wang YY, Luo LJ, Zhu GP, Zhao H. 2023. More effective protection supports male better than female siblings over water deficit in artificially bred poplar hybrids. <i>Forests</i> 14:995. https://doi.org/10.3390/f14050995	<i>Populus x euramericana</i>	Tree	Drought	Male
59	Li L, Duan BL, Deng DZ, Tu WG, Zhang YB. 2014. Soil salinity alters the sexual responses to elevated CO ₂ and temperature in growth and leaf traits of a dioecious plant. <i>Canadian Journal of Forest Research</i> 44:1292–1301. https://doi.org/10.1139/cjfr-2013-0453	<i>Populus yunnanensis</i>	Tree	Warming	Mixed
60	Chen LH, Zhang S, Zhao HX, Korpelainen H, Li CY. 2010. Sex-related adaptive responses to interaction of drought and salinity in <i>Populus yunnanensis</i> . <i>Plant Cell and Environment</i> 33:1767–1778. https://doi.org/10.1111/j.1365-3040.2010.02182.x	<i>Populus yunnanensis</i>	Tree	Drought	Male
61	Peng SM, Jiang H, Zhang S, Chen LH, Li XG, Korpelainen H, Li CY. 2012. Transcriptional profiling reveals sexual differences of the leaf transcriptomes in response to drought stress in <i>Populus yunnanensis</i> . <i>Tree Physiology</i> 32:1541–1555. https://doi.org/10.1093/treephys/tps110	<i>Populus yunnanensis</i>	Tree	Drought	Male
62	Zhang R, Liu JY, Liu QS, He HG, Xu X, Dong TF. 2019. Sexual differences in growth and defence of <i>Populus yunnanensis</i> under drought stress. <i>Canadian Journal of Forest Research</i> 49:491–499. https://doi.org/10.1139/cjfr-2018-0270	<i>Populus yunnanensis</i>	Tree	Drought	Male

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
63	Zhang YB, Xu G, Peng SM, Bai JW, Lu Q, Duan BL. 2021. Water relations and non-structural carbohydrate responses to the combined effects of defoliation and progressive drought in a dioecious tree. <i>New Forests</i> 52:605–619. https://doi.org/10.1007/s11056-020-09811-4	<i>Populus yunnanensis</i>	Tree	Drought	Male
64	Iszkulo G, Jasinska AK, Giertych MJ, Boratynski A. 2009. Do secondary sexual dimorphism and female intolerance to drought influence the sex ratio and extinction risk of <i>Taxus baccata</i> ?. <i>Plant Ecology</i> 200:229–240. https://doi.org/10.1007/s11258-008-9447-5	<i>Taxus baccata</i>	Tree	Drought	Male
65	Wang JW, Liu Y, Xu YX, Chen WJ, Han YN, Wang GG, Jin SH. 2022. Sexual differences in gas exchange and chlorophyll fluorescence of <i>Torreya grandis</i> under drought stress. <i>Trees-Structure and Function</i> 36:283–294. https://doi.org/10.1007/s00468-021-02205-9	<i>Torreya grandis</i>	Tree	Drought	Female
66	Morales M, Pintó-Marijuan M, Munné-Bosch S. 2016. Seasonal, Sex- and Plant size-related effects on photoinhibition and photoprotection in the dioecious mediterranean dwarf palm, <i>Chamaerops humilis</i> . <i>Frontiers in Plant Science</i> 7:1116. https://doi.org/10.3389/fpls.2016.01116	<i>Chamaerops humilis</i>	Shrub	Drought	Male

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
67	Alvarez-Cansino L, Barradas MCD, Zunzunegui M, Esquivias MP, Dawson TE. 2012. Gender-specific variation in physiology in the dioecious shrub <i>Corema album</i> throughout its distributional range. Functional Plant Biology 39:968–978. https://doi.org/10.1071/FP12131	<i>Corema album</i>	Shrub	Drought	Female
68	Alvarez-Cansino L, Zunzunegui M, Barradas MCD, Esquivias MP. 2010. Physiological performance and xylem water isotopic composition underlie gender-specific responses in the dioecious shrub <i>Corema album</i> . Physiologia Plantarum 140:32–45. https://doi.org/10.1111/j.1399-3054.2010.01382.x	<i>Corema album</i>	Shrub	Drought	Female
69	Díaz-Barradas MC, Zunzunegui M, Correia O, Ain-Lhout F, Esquivias MP, Alvarez-Cansino L. 2018. Gender dimorphism in <i>Corema album</i> across its biogeographical area and implications under a scenario of extreme drought events. Environmental and Experimental Botany 155:609–618. https://doi.org/10.1016/j.envexpbot.2018.08.011	<i>Corema album</i>	Shrub	Drought	Female
70	Li CY, Ren J, Luo JX, Lu RS. 2004. Sex-specific physiological and growth responses to water stress in <i>Hippophae rhamnoides</i> L. populations. Acta Physiologiae Plantarum 26:123–129. https://doi.org/10.1007/s11738-004-0001-3	<i>Hippophae rhamnoides</i>	Shrub	Drought	Male

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
71	Su Y, Li SX, Jiang H, Duan BL, Liu MY, Zhang YB. 2023. Sex-specific physiological and growth responses to elevated temperature and CO ₂ concentration in Chinese seabuckthorn (<i>Hippophae rhamnoides</i> subsp. <i>sinensis</i> Rousi). <i>Acta Physiologiae Plantarum</i> 45:53. https://doi.org/10.1007/s11738-023-03520-z	<i>Hippophae rhamnoides sinensis</i>	Shrub	Warming	Male
72	Amitrano C, Balzano A, Motti R, Merela M, De Micco V. 2025. Sex matters: understanding wood-leaf hydraulic coordination in dioecious species in a drying world. <i>Tree Physiology</i> 45:tpaf133. https://doi.org/10.1093/treephys/tpaf133	<i>Pistacia lentiscus</i>	Shrub	Drought	Mixed
73	Correia O, Barradas MCD. 2000. Ecophysiological differences between male and female plants of <i>Pistacia lentiscus</i> L. <i>Plant Ecology</i> 149:131–142. https://doi.org/10.1023/A:1026588326204	<i>Pistacia lentiscus</i>	Shrub	Drought	Male
74	Juvany M, Müller M, Pintó-Marijuan M, Munné-Bosch S. 2014. Sex-related differences in lipid peroxidation and photoprotection in <i>Pistacia lentiscus</i> . <i>Journal of Experimental Botany</i> 65:1039–1049. https://doi.org/10.1093/jxb/ert446	<i>Pistacia lentiscus</i>	Shrub	Drought	Male
75	Amitrano C, Balzano A, Motti R, Merela M, De Micco V. 2025. Sex matters: understanding wood-leaf hydraulic coordination in dioecious species in a drying world. <i>Tree Physiology</i> 45:tpaf133. https://doi.org/10.1093/treephys/tpaf133	<i>Rhamnus alaternus</i>	Shrub	Drought	Mixed

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
76	Jones MH, Macdonald SE, Henry GHR. 1999. Sex- and habitat-specific responses of a high arctic willow, <i>Salix arctica</i> , to experimental climate change. <i>Oikos</i> 87:129–138. https://doi.org/10.2307/3547004	<i>Salix arctica</i>	Shrub	Warming	Mixed
77	Dawson TE, Bliss LC. 1989. Patterns of water-use and the tissue water relations in the dioecious shrub, <i>Salix-arctica</i> - the physiological-basis for habitat partitioning between the sexes. <i>Oecologia</i> 79:332–343. https://doi.org/10.1007/BF00384312	<i>Salix arctica</i>	Shrub	Drought	Male
78	Dudley LS, Galen C. 2007. Stage-dependent patterns of drought tolerance and gas exchange vary between sexes in the alpine willow, <i>Salix glauca</i> . <i>Oecologia</i> 153:1–9. https://doi.org/10.1007/s00442-007-0712-4	<i>Salix glauca</i>	Shrub	Drought	Male
79	Dudley LS. 2006. Ecological correlates of secondary sexual dimorphism in <i>Salix glauca</i> (Salicaceae). <i>American Journal of Botany</i> 93:1775–1783. https://doi.org/10.3732/ajb.93.12.1775	<i>Salix glauca</i>	Shrub	Drought	Male
80	Randriamanana TR, Nissinen K, Moilanen J, Nybakken L, Julkunen-Tiitio R. 2015. Long-term UV-B and temperature enhancements suggest that females of <i>Salix myrsinifolia</i> plants are more tolerant to UV-B than males. <i>Environmental and Experimental Botany</i> 109:296–305. https://doi.org/10.1016/j.envexpbot.2014.06.007	<i>Salix myrsinifolia</i>	Shrub	Warming	Mixed

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
81	He Y, Guo Z, Liu RX, Li Q, He YT, Feng J, Zhang S. 2024. Enhancing temperature resilience in dioecious <i>Salix myrtillacea</i> : The role of acetic acid in eco-physiological and microbial adaptations. Industrial Crops and Products 218:118888. https://doi.org/10.1016/j.indcrop.2024.118888	<i>Salix myrtillacea</i>	Shrub	Warming	Female
82	Cai ZY, Han YY, Duan BL, Song HF. 2022. <i>Salix myrtillacea</i> female cuttings performed better than males under nitrogen deposition on leaves and drought conditions. Forests 13:821. https://doi.org/10.3390/f13060821	<i>Salix myrtillacea</i>	Shrub	Drought	Female
83	He Y, Dai YJ, Li HH, Li MH, Zhang S. 2023. Growth and defense trade-offs in dioecious <i>Salix myrtillacea</i> exposed to drought and low temperature stress. Environmental and Experimental Botany 215:105504. https://doi.org/10.1016/j.envexpbot.2023.105504	<i>Salix myrtillacea</i>	Shrub	Drought	Mixed
84	Fu MY, Liao J, Liu XJ, Li MH, Zhang S. 2023. Artificial warming affects sugar signals and flavonoid accumulation to improve female willows' growth faster than males. Tree Physiology 43:1584–1602. https://doi.org/10.1093/treephys/tpad081	<i>Salix paraplesia</i>	Shrub	Warming	Female
85	Liao J, Cai ZY, Song HF, Zhang S. 2020. Poplar males and willow females exhibit superior adaptation to nocturnal warming than the opposite sex. Science of the Total Environment 717:137179. https://doi.org/10.1016/j.scitotenv.2020.137179	<i>Salix paraplesia</i>	Shrub	Warming	Female

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
86	Liao J, Song HF, Tang DT, Zhang S. 2019. Sexually differential tolerance to water deficiency of <i>Salix paraplesia</i> - A female-biased alpine willow. Ecology and Evolution 9:8450–8464. https://doi.org/10.1002/ece3.5175	<i>Salix paraplesia</i>	Shrub	Drought	Female
87	Cai ZY, Fu MY, Yao Y, Chen Y, Song HF, Zhang S. 2023. Differences in phytohormone and flavonoid metabolism explain the sex differences in responses of <i>Salix rehderiana</i> to drought and nitrogen deposition. Plant Journal 114:534–553. https://doi.org/10.1111/tpj.16152	<i>Salix rehderiana</i>	Shrub	Drought	Female
88	Deng B, Wang YD, Ren WW, Wang XF, Zhang J, Liao J. 2026. Morphological and physiological responses of <i>Salix variegata</i> to heat stress, drought stress, and combined heat - drought stress: a sex - specific analysis. Trees-Structure and Function 40:25. https://doi.org/10.1007/s00468-026-02730-5	<i>Salix variegata</i>	Shrub	Warming	Female
89	Deng B, Wang YD, Ren WW, Wang XF, Zhang J, Liao J. 2026. Morphological and physiological responses of <i>Salix variegata</i> to heat stress, drought stress, and combined heat - drought stress: a sex - specific analysis. Trees-Structure and Function 40:25. https://doi.org/10.1007/s00468-026-02730-5	<i>Salix variegata</i>	Shrub	Drought	Female

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
90	Deng B, Wang YD, Ren WW, Wang XF, Zhang J, Liao J. 2026. Morphological and physiological responses of <i>Salix variegata</i> to heat stress, drought stress, and combined heat - drought stress: a sex - specific analysis. <i>Trees-Structure and Function</i> 40:25. https://doi.org/10.1007/s00468-026-02730-5	<i>Salix variegata</i>	Shrub	Combined	Female
91	de la Bandera MD, Traveset A, Valladares F, Gulías J. 2008. Gender, season and habitat: Patterns of variation in photosynthetic activity, growth and fecundity in <i>Thymelaea velutina</i> . <i>Acta Oecologica-International Journal of Ecology</i> 34:294–302. https://doi.org/10.1016/j.actao.2008.06.002	<i>Thymelaea velutina</i>	Shrub	Drought	None
92	Varga S, Kytöviita MM. 2008. Sex-specific responses to mycorrhiza in a dioecious species. <i>American Journal of Botany</i> 95:1225–1232. https://doi.org/10.3732/ajb.0800068	<i>Antennaria dioica</i>	Herb	Drought	Male
93	Liu MY, Su YL, Teng K, Fan XF, Yue YS, Xiao GZ, Liu LY. 2024. Transcriptome regulation mechanisms difference between female and male <i>Buchloe dactyloides</i> in response to drought stress and rehydration. <i>International Journal of Molecular Sciences</i> 25:9653. https://doi.org/10.3390/ijms25179653	<i>Buchloe dactyloides</i>	Herb	Drought	Female

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
94	Fox JF, Harrison AT. 1981. Habitat assortment of sexes and water-balance in a dioecious grass. <i>Oecologia</i> 49:233–235. https://doi.org/10.1007/BF00349194	<i>Hesperochloa kingii</i>	Herb	Drought	None
95	Yang J, Hu LJ, Wang ZK, Zhu WL, Meng LH. 2014. Responses to drought stress among sex morphs of <i>Oxyria sinensis</i> (Polygonaceae), a subdioecious perennial herb native to the East Himalayas. <i>Ecology and Evolution</i> 4:4033–4040. https://doi.org/10.1002/ece3.1178	<i>Oxyria sinensis</i>	Herb	Drought	None
96	Houssard C, Escarre J, Vartanian N. 1992. Water-stress effects on successional populations of the dioecious herb, rumex-acetosellal. <i>New Phytologist</i> 120:551–559. https://doi.org/10.1111/j.1469-8137.1992.tb01805.x	<i>Rumex acetosella</i>	Herb	Drought	Male
97	Gong CS, Wang J, Guo SM, Dong TF, Zhang CY. 2026. Sex-specific trade-offs of ecological strategies of <i>Spinacia oleracea</i> plants under intermittent drought stress. <i>Flora</i> 334:152892. https://doi.org/10.1016/j.flora.2025.152892	<i>Spinacia oleracea</i>	Herb	Drought	Female
98	Wang J, Guo SM, Gong CS, Yang SX, Zhang CY. 2025. Sex-specific dynamics of surface water storage and their relationship with drought resistance in dioecious <i>Spinacia oleracea</i> . <i>Ecohydrology</i> 18:e70117. https://doi.org/10.1002/eco.70117	<i>Spinacia oleracea</i>	Herb	Drought	Female

No.	Reference	Species	Life form	Stress type	Direction of sexual difference
99	Oñate M, Blanc J, Munné-Bosch S. 2011. Influence of stress history on the response of the dioecious plant <i>Urtica dioica</i> L. to abiotic stress. <i>Plant Ecology & Diversity</i> 4:45–54. https://doi.org/10.1080/17550874.2011.557400	<i>Urtica dioica</i>	Herb	Drought	None
100	Simancas B, Juvany M, Cotado A, Munné-Bosch S. 2016. Sex-related differences in photoinhibition, photo-oxidative stress and photoprotection in stinging nettle (<i>Urtica dioica</i> L.) exposed to drought and nutrient deficiency. <i>Journal of Photochemistry and Photobiology B-Biology</i> 156:22–28. https://doi.org/10.1016/j.jphotobiol.2016.01.005	<i>Urtica dioica</i>	Herb	Drought	Male